



Transmittal

Date: Wednesday, July 25, 2018

Project: AE 0044-12 Federal Way Link Extension

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Subject: AE 0044-12 3.7.N Phase II ESA FL-203 and FL-252 Draft 2

FWLE Team,

Please find attached the following deliverable:

- AE 0044-12 3.7.N Phase II ESA FL-203 Draft 2
- AE 0044-12 3.7.N Phase II ESA FL-252 Draft 2

These have been reviewed by Mark Menard and considered final. Let us know if you have any questions.

July 2018

FEDERAL WAY LINK EXTENSION

AE 0044-12 3.7.N
Focused Phase II
Environmental Site
Assessment
FL-252 Draft 2

Tax Parcel 2122049046



CENTRAL PUGET SOUND
REGIONAL TRANSIT AUTHORITY

**Focused Phase II Environmental Site Assessment
Report
Sound Transit – Federal Way Link Extension
Parcel FL-252, Gresham Transfer/Former Widing
Transportation Facility
24300 Pacific Highway South
Kent, Washington**

File No. 4082-039-01

July 25, 2018

Prepared for:

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Attention: Mark Menard

Prepared by:

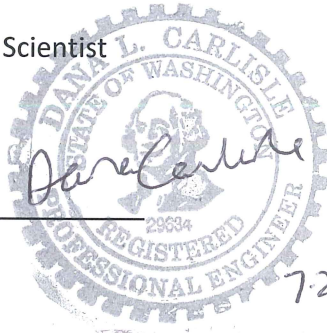
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RECORD OF REVISIONS TO FEDERAL WAY LINK EXTENSION, PHASE 3 QUALITY MANAGEMENT PLAN

[illegible]

Acronyms and Abbreviations

AST	aboveground storage tank
ASTM	ASTM International
bgs	below ground surface
CLARC	Cleanup Levels and Risk Calculation
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
ESA	environmental site assessment
HREC	Historical Recognized Environmental Condition
mg/kg	milligrams per kilogram
MTCA	Model Toxics Control Act
NAVD 88	North American Vertical Datum of 1988
PAH	polycyclic aromatic hydrocarbon
PCBs	polychlorinated biphenyls
PID	photoionization detector
ppm	parts per million
QC	quality control
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
TCE	temporary construction easement
TSP	Tacoma Smelter Plume
UST	underground storage tank
VOC	volatile organic compound
WAC	Washington Administrative Code

EXECUTIVE SUMMARY

This report summarizes the results of the Focused Phase II Environmental Site Assessment (ESA) of the eastern approximately 1 acre of the 9.44-acre Gresham Transfer facility at 24300 Pacific Highway South in Kent, Washington (Figure 1), King County Tax Parcel 2122049046, identified by Sound Transit as Federal Way parcel FL-252 ("Parcel"). The Focused Phase II ESA was conducted to assess soil and groundwater in Sound Transit's proposed construction area in the eastern margin of the Parcel for potential contamination that may be encountered during Sound Transit construction activities on the Parcel.

The Parcel is currently owned by City Pacific Land Co., LLC and is occupied by Gresham Transfer, a trucking company. Gresham Transfer's current operations on the Parcel include truck parking, storage, repair and maintenance. The Parcel was previously used by Widing Transportation (Widing), also a trucking company. Gresham Transfer and Widing are both included in Ecology/EPA databases as past contaminated sites.

Based on current design information for the FWLE project (HDR, provided in March 2018), Sound Transit proposes a guideway easement and permanent access and drainage easements in the eastern margin of the Parcel (Figure 2). Sound Transit also proposes temporary construction easements (TCEs) surrounding the other easements. The total easement area is approximately 1 acre. Based on preliminary design information for the project as of March 2018, Sound Transit's proposed construction on the Parcel includes the aerial guideway and tracks, possible guideway support columns, an access road, a new wall and utilities. Proposed construction activities by Sound Transit could change as project design is refined. The Focused Phase II ESA exploration locations were limited to the guideway, permanent and temporary construction easement areas.

Phase I ESA Summary

The recent Phase I ESA (GeoEngineers October 2017) was completed for the Parcel; refer to the Phase I ESA Report for a full list of Recognized Environmental Conditions (RECs) identified for the entirety of the Parcel. Based on information in the Phase I ESA, the following subset of RECs pertain to areas which correspond to Sound Transit's future construction activities.

- **Former Widing Operations** - Widing, a registered transporter of hazardous waste, operated a bulk tanker truck carrier terminal with a truck maintenance and washing facility on the Parcel between approximately 1967 and 1986. The specific areas of potential environmental concern associated with the Widing operations were primarily in the western and central portions of the Parcel (see Figure 2 inset graphic and reports from Ecology files in Appendix C). Widing operations that occurred in the future Sound Transit construction areas were primarily equipment storage; however, contaminants associated with Widing operations in other areas could have migrated into the future Sound Transit construction areas via soil erosion or surface runoff (see below), by tracking of surface soil by truck and equipment movement, and/or through groundwater contaminant migration. The

direction of groundwater flow on the Parcel is anticipated to be toward the south.

According to EPA documents, Widing was licensed to haul chemicals, acids, chlorinated and non-chlorinated solvents, and petroleum products. Trucks containing raw turpentine, sodium sulfide, toluene, epoxy resin and other chemicals associated with the pulp and paper industry were rinsed at the Widing facility on Parcel FL-252. Rinsewaters were conveyed into three interconnected rinseate lagoons (“former settling ponds”), two of which were unlined. In addition to the truck wash and rinseate lagoons, the Widing facility had a fueling area with two USTs, a small office building and two Quonset Hut storage and shop buildings. A septic tank was apparently situated between the two Quonset huts. A machine/auto salvage business reportedly operated from the Quonset huts before the Widing facility began operations.

In the 1970s and 1980s, complaints and violations regarding spills and dumping of chemicals were filed against Widing. EPA reported “various inadequacies in the management and disposal of site-generated waste, such as allowing the lagoons to overflow, uncontrolled runoff, air emissions and sludge reportedly buried on-site south of the lagoons. Surface water runoff was initially uncontrolled but was later channeled into ditches along the north and south Parcel boundaries which discharged to the west. Runoff on the eastern half of the Parcel was reported to have continued to flow in an uncontrolled manner during Widing operations, following natural drainage routes at the northeast and southeast corners of the Parcel (see notations regarding “alleged runoff” in the inset on Figure 2).

In 1986, the lagoons were “closed” and excavated under the direction of Ecology. The semi-volatile contaminant bis(2-ethylhexyl) phthalate was found to have migrated downward into soil beneath the lagoons. More than 900 tons of contaminated soil and sludge from the lagoon areas were classified as Dangerous Waste and shipped to the hazardous waste treatment, storage and disposal (TSD) facility near Arlington, Oregon. Concrete from the one concrete-lined pond was sandblasted on site to remove contaminants and the concrete and residue from sandblasting were reportedly disposed at the Coal Creek landfill in Renton. The excavated ponds were filled with clean fill material reportedly from the Renton METRO project.

EPA oversaw a sampling effort in 1988 to assess post-lagoon closure soil conditions on the Parcel (Ecology and Environment Inc., Site Inspection Report for Widing Transportation Inc., Kent, Washington dated July 1988). This 1988 report concluded that no impact to groundwater was evident; however, groundwater sampling was not performed. The 1988 study did not find evidence of allegedly buried sludge and the report concluded that “sufficient evidence was not found to indicate that rinseate lagoon contaminants migrated laterally into nearby on- or off-site soils.” However, the report also concluded that lead, copper and acetone were identified at elevated levels in soil samples from the south drainage ditch.

EPA “closed out” the open regulatory case file for the facility in 1988. We note that no Ecology documentation from the years since MTCA was enacted in 1989 was identified in relation to the

Widing facility operations.

- **Current Truck Repair and Maintenance by Gresham Transfer** - Gresham has conducted truck repair and maintenance at the Parcel since about 1990. References in the regulatory file indicate that truck washing operations were performed on the Parcel in the past without containing the rinse water. The risk of a potential release of truck repair and maintenance chemicals, and oily wash water was considered to be relatively high because the majority of the Parcel is unpaved. One regulatory file document was located suggesting poor handling practices for hazardous substances: in 1996, an incident occurred in which the lids were blown off drums that contained mixtures of magnesium oxide, dirt, cement dust, and soda ash. Based on the size and scale of the Gresham Transfer facility operations, the years and duration of truck repair and maintenance operations, the unpaved nature of most of the Parcel, we concluded there is a potential for contaminants to have impacted stormwater runoff and discharge from the eastern portion of the Parcel.
- **Fill of Unknown Origin** - Approximately 8 feet of loose fill material containing wood debris was encountered during drilling of geotechnical boring FWLE-A26P located in the southeast corner of the Parcel (Figure 2). The specific source(s) of this fill was not determined from the available sources. Imported fill of unknown origin may contain contaminants such as petroleum, metals or polycyclic aromatic hydrocarbons (PAHs).
- **Tacoma Smelter Plume** - The subject property is within Ecology's mapped footprint of the Tacoma Smelter Plume (TSP - areawide contamination) where arsenic concentrations in surface/near surface soil are predicted to exceed the MTCA Method A cleanup level for unrestricted land use. The Parcel falls within the area where surface soil concentrations of arsenic are expected to be in the range of 40 to 100 ppm; the MTCA Method A cleanup level for arsenic for unrestricted land use is equivalent to 20 ppm.

Focused Phase II ESA Conclusions

The purpose of the Focused Phase II ESA was to evaluate soil and groundwater in Sound Transit's proposed construction area for potential contamination that may be encountered during Sound Transit construction activities on the Parcel.

Site Reconnaissance

We conducted a visual site reconnaissance of the proposed Sound Transit construction area in May 2018. The proposed construction area is an open gravel lot used for parking truck trailers. No visual evidence of potential sources of contamination was noted during the site reconnaissance.

Focused Phase II ESA Findings

Four hollow stem auger borings (FL252-B1 through FL252-B4) were completed in the eastern portion of the Parcel in areas corresponding to proposed Sound Transit construction. Borings FL252-B1, FL252-B3 and FL252-B4 were advanced to depths of 11.5 feet bgs. Boring FL252-B2 was advanced to a depth of 50 feet bgs and a permanent monitoring well was installed in this boring to enable collection of a groundwater sample. Soil samples were collected from each boring and submitted for chemical

analyses. One groundwater sample was collected for analysis from monitoring well FL252-B2. In addition, shallow soil samples obtained from the Focused Phase II ESA explorations were assessed for potential contaminants associated with the Tacoma Smelter Plume (lead and arsenic).

Organics, roots and wood debris suspected to be fill were noted in a dark brown sandy layer observed in FL252-B3 at a depth of 1 to 1.5 feet bgs, and in FL252-B4 at a depth of 5 to 5.5 feet bgs.

Soil

Twenty-four soil samples collected from the borings were submitted for chemical analysis of one more of the following: gasoline-range petroleum hydrocarbons, diesel- and lube oil-range petroleum hydrocarbons, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs) including phenols, PAHs, and priority pollutant metals. Of the 24 soil samples, eight shallow samples collected at 0 to 1-foot bgs were analyzed to evaluate contaminants associated with the TSP; the remaining 16 soil samples were analyzed for potential contaminants associated with current and former operations on the Parcel and with fill.

Diesel- and/or lube oil-range petroleum hydrocarbons were detected in six of 17 soil samples analyzed. The sum of diesel- and lube oil-range petroleum hydrocarbons in the sample from FL252-B4 at a depth of 5 to 6 feet bgs (3,600 mg/kg) was greater than the MTCA Method A cleanup level of 2,000 mg/kg. Diesel- and/or lube oil-range petroleum hydrocarbons were also detected in soil samples FL252-B1-0-1.5, FL252-B3-2.5-3.5, FL252-B3-5-6, FL252-B4-0-1, and FL252-B4-6-6.5 at concentrations less than MTCA Method A cleanup levels.

Low-level VOCs¹ were detected in soil samples FL252-B3-2.5-3.5, FL252-B4-5-6 and FL252-B4-7.5-8.5. Low-level SVOCs² not typically associated with petroleum releases were detected in soil samples FL252-B1-0-1.5, FL252-B4-5-6 and FL252-B4-10-11. The compound bis(2-ethylhexyl) phthalate identified in the regulatory files as a residual contaminant associated with Widing was not detected in the Focused Phase II ESA soil samples.

Carcinogenic and noncarcinogenic PAHs were detected in soil samples FL252-B1-0-1.5 (lube oil also detected), FL252-B1-2.5-3.5, FL252-B3-0-1, FL252-B4-0-1 (lube oil also detected) and FL252-B4-5-6 feet bgs (diesel and lube oil also detected as noted above). The detected concentration of cPAHs in sample FL252-B1-0-1.5 (0.7828 mg/kg) was greater than the corresponding MTCA Method A cleanup level of 0.1 mg/kg. Based on these boring locations and sample depths, the source(s) of cPAHs and petroleum hydrocarbons detected in these samples may be related to past releases from truck maintenance or washing operations.

Metals, including arsenic and lead, were not detected at concentrations greater than the corresponding MTCA cleanup levels in the soil samples analyzed with one exception. Arsenic was

¹ 1,1-dichloroethane, carbon disulfide, isopropylbenzene, and/or p-isopropyltoluene were detected in these samples.

² Carbazole, dibenzofuran, 3&4 methylphenol and/or dibutyl phthalate were detected in these samples.

detected in sample FL252-B1-0-1.5 at a concentration of 28 mg/kg which is greater than the MTCA Method A cleanup level of 20 mg/kg.

Petroleum hydrocarbons, cPAHs and metals which were detected in samples from FL252-B1, FL252-B3 and FL252-B4, are common contaminants associated with fill of unknown origin. Shallow soil impacts may also be related to former or current facility operations (e.g., impacts from runoff and/or truck and trailer storage and maintenance activities).

Groundwater

The depth to groundwater in monitoring well FL252-B2 was 25.6 feet below the well casing rim (measured on June 1, 2018). Petroleum hydrocarbons, priority pollutant metals, cyanide, VOCs and SVOCs were not detected in the groundwater sample collected from FL252-B2. The compound bis(2-ethylhexyl) phthalate identified in the regulatory files as a residual contaminant associated with Widing was not detected in the Focused Phase II ESA groundwater sample.

Tacoma Smelter Plume

Detected arsenic and lead concentrations in the 8 samples collected for the purpose of evaluating TSP impacts were less than respective MTCA Method A cleanup levels (20 mg/kg for arsenic and 250 mg/kg for lead). Residual impacts from the Tacoma Smelter Plume do not appear to be a concern based on the results for arsenic and lead in 8 near surface soil samples.

Sound Transit Future Construction Recommendations

Based on current design information for the FWLE project (HDR, provided in March 2018), Sound Transit proposes a guideway easement and permanent access and drainage easements in the eastern margin of the Parcel (Figure 2). Sound Transit also proposes temporary construction easements (TCEs) surrounding the other easements. The total easement area is approximately 1 acre. Based on preliminary design information for the project as of March 2018, Sound Transit's proposed construction on the Parcel includes the aerial guideway and tracks, possible guideway support columns, an access road, a new wall and utilities. Proposed construction activities by Sound Transit could change as project design is refined. The Focused Phase II ESA exploration locations were limited to the guideway, permanent and temporary construction easement areas.

Localized areas of impacted and contaminated soil were identified during the Focused Phase II ESA. Contaminants of potential concern detected in one or more samples included petroleum hydrocarbons (greater than MTCA Method A cleanup level in one sample), VOCs, SVOCs, cPAHs (greater than MTCA Method A cleanup level in one sample) and metals (arsenic greater than MTCA Method A cleanup level in one sample). Soil that will be excavated for the Project may require special handling and disposal in accordance with applicable regulations and the contract documents.

We recommend Sound Transit contractors follow procedures to identify and characterize excavated soil in accordance with contaminated/impacted soil screening and handling plans and the contract documents. Soil segregation, handling, stockpiling, waste characterization, and end use/disposal

should be based on the results of this Focused Phase II ESA and additional follow-up chemical analytical testing. Widing Transportation was a registered hazardous waste transporter, and for this reason, some of the excavated material may classify as dangerous waste. If additional testing conducted in the future identifies contaminant impacts that may be related to past Widing operations, then waste classifications for the impacted media should be further evaluated as appropriate.

Ecology's "Guidance for Remediation of Petroleum-Contaminated Soil" should be used as a guidance document for soil handling and end use options as appropriate for petroleum-related contaminants.

Based on groundwater analytical data from the May 2018 sample at FL252-B2, we did not identify impacted or contaminated groundwater. However, given the type of information in regulatory files associated with Widing and Gresham Transfer, we recommend as a precaution that solids/fluids encountered and removed during future construction of guideway support columns be additionally characterized to confirm appropriate disposal in accordance with applicable regulations and the contract documents.

We recommend the Sound Transit update the construction cost estimate based on the findings of the Focused Phase II ESA which identified isolated locations/depths of contaminated and impacted soil that may be encountered during Sound Transit's planned construction.

In accordance with WAC 173-160, we recommend decommissioning of monitoring well FL252-B2 if it is no longer needed.

This Executive Summary should be used only in the context of the full report for which it is intended.

1.0 Introduction

This report summarizes the results of the Focused Phase II Environmental Site Assessment (ESA) of the eastern approximately 1 acre of the 9.44-acre Gresham Transfer facility at 24300 Pacific Highway South in Kent, Washington (Figure 1), King County Tax Parcel 2122049046, identified by Sound Transit as Federal Way parcel FL-252 (“Parcel”). The Focused Phase II ESA was conducted to assess soil and groundwater in Sound Transit’s proposed construction area in the eastern margin of the Parcel for potential contamination that may be encountered during Sound Transit construction activities on the Parcel. The Parcel is currently owned by City Pacific Land Co., LLC and is occupied by Gresham Transfer, a trucking company. Gresham Transfer’s current operations on the Parcel include truck parking, storage, repair and maintenance. The Parcel was previously used by Widing Transportation (Widing), also a trucking company. Gresham Transfer and Widing are both included in Ecology/EPA databases as past contaminated sites. The Parcel is shown relative to surrounding physical features on the Vicinity Map, Figure 1. The layout of the Parcel and surrounding properties is shown on the Site Plan and Boring Location Map – FL-252, Figure 2.

Based on current design information for the FWLE project (HDR, provided in March 2018), Sound Transit proposes a guideway easement and permanent access and drainage easements in the eastern margin of the Parcel (Figure 2). Sound Transit also proposes temporary construction easements (TCEs) surrounding the other easements. The total easement area is approximately 1 acre. Based on preliminary design information for the project as of March 2018, Sound Transit’s proposed construction on the Parcel includes the aerial guideway and tracks, possible guideway support columns, an access road, a new wall and utilities. Proposed construction activities by Sound Transit could change as project design is refined. The Focused Phase II ESA exploration locations were limited to the guideway, permanent and temporary construction easement areas.

The results of this Focused Phase II ESA will be used by Sound Transit as part of their evaluation of potential environmental liabilities associated with design and construction of the FWLE. This report has been prepared for the exclusive use of Sound Transit, their agents and project design team. Because this environmental report is not intended for use by others, no one else should rely on this report without first conferring with GeoEngineers.

Throughout the report, references to “the FWLE”, the “project”, the “proposed project”, “the alignment,” or the “light rail corridor” refer to the alignment selected by the Sound Transit Board in January 2017 after publication of the FEIS.

1.1 FWLE Project Description

Sound Transit intends to extend light rail between the cities of SeaTac and Federal Way, through the Federal Way Link Extension Preferred Alternative route. The Sound Transit 2 (ST2) Plan, approved by voters in 2008, included environmental study and design of this extension. This 7.8-mile extension would extend light rail south from the Angle Lake Station terminus of the Central Link system at South

200th Street in SeaTac to the Federal Way Transit Center (FWTC) at South 317th Street. The FWLE would travel within the cities of SeaTac, Des Moines, Kent, and Federal Way in King County.

Link Light Rail is currently operating between University of Washington, Seattle and Sea-Tac International Airport. In 2008 the ST2 program was approved by voters. This package added nearly 36 new miles of service to the north, south, and east, to Sound Transit's (ST) initial light rail line, resulting in 55 miles of light rail open for revenue service by 2023. The ST2 program of projects includes construction of light rail from the Angle Lake Station, just south of SeaTac Airport, to Kent/Des Moines Station. ST2 funds were also programmed to provide environmental clearance and preliminary engineering design to downtown Federal Way.

In June 2016, the ST Board unanimously approved to move forward with a November 2016 ballot asking taxpayers to fund Sound Transit 3 (ST3) which was subsequently passed by the taxpayers. ST3 funds the remaining segments from Kent/Des Moines station to the FWTC. Revenue service to the FWTC Station is targeted to open by 2024.

1.2 Authorization

This report was prepared under the terms of the subcontract between HDR and GeoEngineers, Inc. (GeoEngineers) dated August 24, 2012, along with Amendments 1 through 12. The subcontract authorizes GeoEngineers to provide environmental services for the Sound Transit Federal Way Link Extension in accordance with Agreement No. RTA/AE 044-12 between HDR and Sound Transit.

1.3 Site History and Summary of RECs

In October 2017, GeoEngineers completed a Phase I ESA for Parcel FL-252. Several RECs were identified for the Parcel, primarily related to activities that occurred in the western and central portions of the Parcel. One of the identified RECs was Gresham Transfer's underground storage tank (UST) and fueling island that was assessed and a cleanup was performed in 1998. Because these sources of contamination did not impact soil in the proposed Sound Transit construction area, this REC was not considered further with regard to this Focused Phase II ESA. Also, the potential off-site concern of a diesel spill that impacted the northern adjacent Lowe's stormwater ponds was determined to present a low risk to the Parcel, in our opinion.

The following is a summary of pertinent recognized environmental conditions (RECs) in connection with the Parcel.

- **Former Widing Operations** - Widing, a registered transporter of hazardous waste, operated a bulk tanker truck carrier terminal with a truck maintenance and washing facility on the Parcel between approximately 1967 and 1986. The specific areas of potential environmental concern associated with the Widing operations were primarily in the western and central portions of the Parcel (see Figure 2 inset graphic and reports from Ecology files in Appendix C). Widing operations that occurred in the future Sound Transit construction areas were primarily equipment storage; however, contaminants associated with Widing operations in other areas could have migrated into the future

Sound Transit construction areas via soil erosion or surface runoff (see below), by tracking of surface soil by truck and equipment movement, and/or through groundwater contaminant migration. The direction of groundwater flow on the Parcel is anticipated to be toward the south.

According to EPA documents, Widing was licensed to haul chemicals, acids, chlorinated and non-chlorinated solvents, and petroleum products. Trucks containing raw turpentine, sodium sulfide, toluene, epoxy resin and other chemicals associated with the pulp and paper industry were rinsed at the Widing facility on Parcel FL-252. Rinsewaters were conveyed into three interconnected rinseate lagoons (“former settling ponds”), two of which were unlined. In addition to the truck wash and rinseate lagoons, the Widing facility had a fueling area with two USTs, a small office building and two Quonset Hut storage and shop buildings. A septic tank was apparently situated between the two Quonset huts. A machine/auto salvage business reportedly operated from the Quonset huts before the Widing facility began operations.

In the 1970s and 1980s, complaints and violations regarding spills and dumping of chemicals were filed against Widing. EPA reported “various inadequacies in the management and disposal of site-generated waste, such as allowing the lagoons to overflow, uncontrolled runoff, air emissions and sludge reportedly buried on-site south of the lagoons. Surface water runoff was initially uncontrolled but was later channeled into ditches along the north and south Parcel boundaries which discharged to the west. Runoff on the eastern half of the Parcel was reported to have continued to flow in an uncontrolled manner during Widing operations, following natural drainage routes at the northeast and southeast corners of the Parcel (see notations regarding “alleged runoff” in the inset on Figure 2).

In 1986, the lagoons were “closed” and excavated under the direction of Ecology. The semi-volatile contaminant bis(2-ethylhexyl) phthalate was found to have migrated downward into soil beneath the lagoons. More than 900 tons of contaminated soil and sludge from the lagoon areas were classified as Dangerous Waste and shipped to the hazardous waste treatment, storage and disposal (TSD) facility near Arlington, Oregon. Concrete from the one concrete-lined pond was sandblasted on site to remove contaminants and the concrete and residue from sandblasting were reportedly disposed at the Coal Creek landfill in Renton. The excavated ponds were filled with clean fill material reportedly from the Renton METRO project.

EPA oversaw a sampling effort in 1988 to assess post-lagoon closure soil conditions on the Parcel (Ecology and Environment Inc., Site Inspection Report for Widing Transportation Inc., Kent, Washington dated July 1988). This 1988 report concluded that no impact to groundwater was evident; however, groundwater sampling was not performed. The 1988 study did not find evidence of allegedly buried sludge and the report concluded that “sufficient evidence was not found to indicate that rinseate lagoon contaminants migrated laterally into nearby on- or off-site soils.” However, the report also concluded that lead, copper and acetone were identified at elevated levels in soil samples from the south drainage ditch.

EPA “closed out” the open regulatory case file for the facility in 1988. We note that no Ecology documentation from the years since MTCA was enacted in 1989 was identified in relation to the Widing facility operations.

- **Current Truck Repair and Maintenance by Gresham Transfer** - Gresham has conducted truck repair and maintenance at the Parcel since about 1990. References in the regulatory file indicate that truck washing operations were performed on the Parcel in the past without containing the rinse water. The risk of a potential release of truck repair and maintenance chemicals, and oily wash water was considered to be relatively high because the majority of the Parcel is unpaved. One regulatory file document was located suggesting poor handling practices for hazardous substances: in 1996, an incident occurred in which the lids were blown off drums that contained mixtures of magnesium oxide, dirt, cement dust, and soda ash. Based on the size and scale of the Gresham Transfer facility operations, the years and duration of truck repair and maintenance operations, the unpaved nature of most of the Parcel, we concluded there is a potential for contaminants to have impacted stormwater runoff and discharge from the eastern portion of the Parcel.
- **Fill of Unknown Origin** - Approximately 8 feet of loose fill material containing wood debris was encountered during drilling of geotechnical boring FWLE-A26P located in the southeast corner of the Parcel (Figure 2). The specific source(s) of this fill was not determined from the available sources. Imported fill of unknown origin may contain contaminants such as petroleum, metals or polycyclic aromatic hydrocarbons (PAHs).
- **Tacoma Smelter Plume** - The subject property is within Ecology’s mapped footprint of the Tacoma Smelter Plume (TSP - areawide contamination) where arsenic concentrations in surface/near surface soil are predicted to exceed the MTCA Method A cleanup level for unrestricted land use. The Parcel falls within the area where surface soil concentrations of arsenic are expected to be in the range of 40 to 100 ppm; the MTCA Method A cleanup level for arsenic for unrestricted land use is equivalent to 20 ppm.

1.4 Purpose and Scope of Services

The purpose of the Focused Phase II ESA is to evaluate potential for contamination in soil and groundwater that may be encountered during Sound Transit construction activities. GeoEngineers’ scope of services consisted of the following:

1. Performed a site reconnaissance of the property.
2. Developed a health and safety plan for use by our field representatives in accordance with WAC 296-24.
3. Coordinated the marking of subsurface utilities at the exploration locations by notifying the one-call locate service for underground utilities in public rights-of-way and a private utility locate service for underground utilities on private property.
4. Advanced four hollow stem auger soil borings (three borings to 11.5 feet bgs and one boring to 50 feet bgs) to evaluate soil and groundwater conditions in areas of proposed construction

activities.

5. Obtained soil samples from the borings using a 2.5-inch-diameter split-spoon sampler at the end of the drilling rods. The core sampler was driven ahead of the auger using a 140-pound hammer with 30-inch drop in 18-inch intervals.
6. Field screened the soil samples for evidence of petroleum and volatiles using visual, water sheen and headspace vapor screening methods. Visually classified the samples in general accordance with ASTM D 2488 and maintained a detailed log of each boring.
7. Obtained a groundwater sample collected from a permanent monitoring well installed in one of the borings to characterize groundwater conditions in the proposed Sound Transit construction area.
8. Submitted select soil and groundwater samples for chemical analysis of one or more of the following: gasoline-range petroleum hydrocarbons by NWTPH-Gx, diesel- and lube oil-range petroleum hydrocarbons by NWTPH-Dx, Priority Pollutant metals, cyanide, and/or arsenic and lead by United States Environmental Protection Agency (EPA) Method 6000/7000 series, hexavalent chromium by EPA Method 7196A modified, SVOCs by EPA 8270D and 8270D/SIM methods, and VOCs by EPA Method 8260C.
9. Evaluated the soil and groundwater sampling field and chemical analytical data relative to Washington State Department of Ecology (Ecology) Toxics Cleanup Program Model Toxics Control Act (MTCA) screening levels and naturally occurring background metals concentrations in Puget Sound region soil.

2.0 Site Description

2.1 Location and Property Description

General location and property description information for the Parcel are summarized in Table 2-1 below. The location is shown relative to surrounding physical features in Figure 1. The current layout of the Parcel and surrounding properties are shown in Figure 2. Site photographs are presented in Appendix A in Figures A-6 through A-9.

Table 2-1. Subject Property Location and Description

Quarter/Quarter, Section, Township and Range	NE/NE quarter of Section 21, Township 22, Range 4, Willamette Meridian
Address	24300 Pacific Highway South in Kent, King County, Washington
Tax Parcel Number	King County Parcel 2122049046
Approximate Parcel Area	9.44 acres
Approximate Sound Transit Construction Area	Approximately 1 acre
Existing Use(s)	Gresham Transfer Trucking Company facility

2.2 Site Vicinity and General Characteristics

The Parcel is in an area that is developed for commercial uses, with some nearby residential. Adjacent property to the north includes a lot that has been prepared for future development. The stormwater ponds associated with the nearby Lowe's store to the north are situated adjacent to the northeast of the Parcel. Adjacent property to the east is undeveloped. A trailer park development and undeveloped areas are situated south of the Parcel. Pacific Highway South is situated to the west. Figure 2 shows the configuration of the Parcel and surrounding properties.

2.3 Site Reconnaissance

GeoEngineers personnel conducted a visual site reconnaissance of the proposed Sound Transit construction area in May 2018. The proposed construction area is an open gravel lot used by Gresham Transfer for parking truck trailers. No visual evidence of potential sources of contamination was noted during the site reconnaissance.

3.0 Physical Setting

3.1 Topography and Hydrogeologic Setting

The Parcel has a surface elevation of approximately 385 feet (North American Vertical Datum of 1988 [NAVD 88], sea level). Land surface across the Parcel is generally flat. The Parcel is approximately 5 to 8 feet higher in elevation than the eastern adjacent property, and approximately 3 to 4 feet lower in elevation than the northern adjacent property.

Our knowledge of the general physiographic setting, geology and groundwater occurrence in the vicinity of the Parcel is based on our review of the available maps, our general experience in the area and our recent soil explorations. Surface and near surface conditions observed during our recent soil explorations are described in the following sections of this report.

3.1.1 Geologic Setting

Glaciation events in the Puget Lowland left thick deposits of glacially-derived and reworked sediments across the region. The upland plateau in the Project area was formed during the latest glacial epoch called the Vashon stade of the continental Fraser glaciation. The advance and retreat of the Vashon-age Puget glacial lobe, approximately 14,000 to 10,000 years ago, deposited most of the near-surface materials and sculpted most of the present landforms within the Puget Lowland.

After the latest glaciation, Holocene period sediments were deposited over the glacial soils. These deposits typically consist of alluvial soils commonly found in river valleys as well as colluvial deposits (landslide materials) on slopes. Peat and other organic soils occur in numerous depressional areas at the surface. Some of these Holocene period sediments have been modified by human activity, including placement of undocumented landfill material in the Midway landfill and placement of roadway embankment fill for construction of I-5.

Geotechnical boring FWLE-A26P completed in the southern portion of the Parcel documented approximately 8 feet of loose fill containing wood debris. The Gresham Transfer facility is several feet higher in elevation than the eastern adjacent parcel and appears to have been filled to level off the east side.

3.1.2 Groundwater Conditions

Groundwater encountered in the FWLE project area may be grouped into one of three main aquifer types: unconfined, semi-confined and confined artesian. Unconfined aquifers may include groundwater within recent alluvium along streams and creeks, within recessional outwash that is perched above low-permeability glacial till, within discontinuous lenses of permeable layers in glacial till, or within advance outwash that is exposed at the ground surface. The semi-confined aquifer is present in the advance outwash where it is overlain by less permeable soils, but the groundwater level is below the confining layer, making the aquifer semi-confined. Confined aquifers encountered in the project area are either flowing artesian (elevated groundwater levels aboveground surface) or sub-

artesian (elevated groundwater levels at or near ground surface).

The depth to groundwater measured on June 1, 2018 in monitoring well FL252-B2 completed during the Phase II ESA was 25.6 feet below the well casing rim. The groundwater is noted as being in a semi-confined aquifer type (GeoEngineers 2017). The inferred groundwater flow direction is toward the south based on surface topography and previous environmental reports for the subject property.

4.0 Contaminants of Concern and Cleanup Levels

In addition to contaminants associated with the Tacoma Smelter Plume (i.e., lead and arsenic), potential contaminants identified for Sound Transit's proposed construction area in the eastern margin of FL-252 are associated with pollutants related to current and former site operations and possible fill from unknown sources. Potential contaminants assessed during the Focused Phase II ESA were petroleum hydrocarbons, VOCs, SVOCs, priority pollutant metals and cyanide.

The chemical analytical data for samples obtained during this investigation were compared to the respective Model Toxics Control Act (MTCA) Method A cleanup levels. MTCA Method B cleanup levels protective of soil direct contact were used for analytes where MTCA Method A cleanup levels are not established. Where appropriate, detected concentrations of metals in soil also were compared to naturally occurring background metals concentrations in Puget Sound region soil (Washington State Department of Ecology [Ecology], 1994). Additionally, detected concentrations of lead and arsenic exceeding MTCA Method A cleanup levels were compared relative to Ecology's "Tacoma Smelter Plume Model Remedies Guidance" (Ecology 2012) for evaluation and remediation of impacts from the Tacoma Smelter Plume.

4.1 Contaminated and Impacted Soil and Groundwater Classifications

For purposes of Sound Transit's future construction activities at FL-252, contaminated soil/groundwater and impacted soil/groundwater are defined as follows:

- **Contaminated Soil/Groundwater:** Soil/groundwater containing concentrations of contaminants greater than applicable cleanup levels such as MTCA Method A Cleanup Levels for Unrestricted Use, or other relevant cleanup levels established by state, local, or federal regulation, law, or permit condition, if no Method A level has been developed.
- **Impacted Soil/Groundwater:** Soil/groundwater containing detectable concentrations of contaminants that are less than applicable cleanup levels, specifically MTCA Method A Cleanup Levels for Unrestricted Land Use, or other relevant cleanup levels established by state, local, or federal regulation, law, or permit condition, if no Method A level has been developed. Also, soil containing detectable concentrations of total metals that are less than MTCA Cleanup Levels but greater than naturally occurring background metals concentrations in Puget Sound region soil (Ecology, 1994). Impacted soil/groundwater is not considered contaminated but may be subject to regulatory requirements under the Dangerous Waste regulations, and restrictions or conditions for end use at off-site facilities and recovered groundwater may be subject to permit for sewer discharge limits and/or may require pretreatment.

4.2 Evaluation of Tacoma Smelter Plume Impacts

The "Tacoma Smelter Plume Model Remedies Guidance" (Ecology 2012) was used to evaluate whether a soil cleanup action for Tacoma Smelter Plume (TSP) impacts would be necessary on the subject

property in connection with future property redevelopment. Detected concentrations of lead and arsenic from TSP impacts were evaluated according to Ecology guidance. In general, discrete soil samples analyzed from within the upper 1-foot with detectable concentrations of either lead or arsenic exceeding MTCA Method A cleanup levels (250 mg/kg and 20 mg/kg, respectively), do not require further action with regard to TSP impacts on a redevelopment property provided that: (a) no single sample has a concentration exceeding twice the corresponding MTCA Method A cleanup level, and (b) the average concentrations of lead and arsenic for each 6-inch sampling interval (i.e., 0-0.5 foot or 0.5-1 foot bgs) are less than the corresponding MTCA Method A cleanup level.

5.0 Subsurface Explorations

5.1 General

The Focused Phase II ESA explorations included four hollow stem auger borings (FL252-B1 through FL252-B4) from which soil samples were obtained to characterize surface and subsurface conditions; groundwater was also collected from a permanent monitoring well installed in one of the borings to characterize local groundwater conditions. In addition, soil was assessed for potential contaminants associated with the Tacoma Smelter Plume.

The four borings were completed in the eastern portion of the Parcel in the area of proposed Sound Transit construction, to investigate the potential for contamination related to current and former site operations, possible fill from unknown sources and potential TSP impacts. The field explorations were completed on May 22 and 23, 2018 by GeoEngineers' field technicians. Ground surface elevations for the boring locations were determined by HDR personnel. Groundwater sampling was performed on June 1, 2018.

Three borings (FL252-B1, FL252-B3 and FL252-B4) were completed to depths of 11.5 feet bgs; boring FL252-B2 was completed to a depth of 50 feet bgs using hollow stem auger drilling methods. Boring logs and the field exploration program are presented in Appendix A. Approximate boring locations are shown on Figure 2.

The subsurface explorations were monitored by a representative of GeoEngineers who visually classified and performed field screening tests on soil samples collected from the explorations for evidence of petroleum and volatiles. Soil conditions and field screening results are shown on the exploration logs presented in Appendix A. Soil and groundwater samples were submitted to OnSite Environmental Laboratories (OnSite) in Redmond, Washington for chemical analysis. The soil chemical analytical results are summarized in Table 1; groundwater chemical analytical results are summarized in Table 2. Copies of the laboratory reports are presented in Appendix B.

5.2 Sampling and Analysis Plan

Site historical use, subsurface conditions and field screening results were evaluated to develop the sampling and analysis plan for the Focused Phase II ESA. The exploration locations are shown in Figure 2. Analyses completed for each exploration are summarized in the following table.

Table 5.1 Sampling and Analysis Summary

Direct-Push Boring ID	Analyses Completed							
	Diesel- and Lube-Oil Range PHCs	Gasoline -Range PHCs	PAHs	SVOCs	VOCs	Priority Pollutant Metals	Cyanide	As, Pb (surface soil)
FL252-B1	S	S	S	S	S	S	--	S
FL252-B2	S / W	S / W	S / W	S / W	S / W	S / W	W	S
FL252-B3	S	S	S	S	S	S	--	S
FL252-B4	S	S	S	S	S	S	--	S

Notes:

“S” = Soil sample analyzed; “W” = Groundwater sample analyzed; PHCs = petroleum hydrocarbons; PAHs = polycyclic aromatic hydrocarbons; SVOCs = semi-volatile organic compounds; VOCs = volatile organic compounds; As = arsenic; Pb = lead.

6.0 Findings

6.1 Subsurface Observations and Field Screening

We observed the completion of four hollow stem auger borings FL252-B1 through FL252-B4, located in the eastern portion of the Parcel. Discrete soil samples were collected from each boring for field screening and possible chemical analysis.

Soil conditions encountered generally consisted of interbedded sands and silts with occasional gravel to the total depths explored. Organics (roots and wood debris) were noted in a dark brown sandy layer observed in FL252-B3 at a depth of 1 to 1.5 feet bgs, and in FL252-B4 at a depth of 5 to 5.5 feet bgs (see Photograph 8 in Figure A-9).

Perched groundwater zones were encountered during drilling of boring FL252-B2 at depths of approximately 10 to 20 feet bgs. Groundwater was measured at a depth of 25.6 feet bgs in FL252-B2 on June 1, 2018, prior to the collection of a groundwater sample for chemical analysis.

Slight and moderate sheens were observed in shallow soil samples collected from FL252-B2, FL252-B3 and FL252-B4. Field screening did not indicate volatiles in soil as measured by a PID. Field screening results are shown in the boring logs in Appendix A.

6.2 Analytical Testing Results

6.2.1 Soil

Twenty-four soil samples collected from the borings were submitted for chemical analysis of one more of the following: gasoline-range petroleum hydrocarbons, diesel- and lube oil-range petroleum hydrocarbons, VOCs, SVOCs, PAHs, and priority pollutant metals. Of the 24 soil samples, eight shallow samples collected at 0 to 1-foot bgs were analyzed to evaluate contaminants associated with the TSP; the remaining 16 soil samples were analyzed for potential contaminants associated with current and former operations on the Parcel and with fill.

6.2.1.1 Petroleum Hydrocarbons

Diesel- and lube oil-range petroleum hydrocarbons were detected in six of 17 soil samples analyzed. The sum of diesel- and lube oil-range petroleum hydrocarbons in the sample from FL252-B4 at a depth of 5 to 6 feet bgs (3,600 mg/kg) was greater than the MTCA Method A cleanup level of 2,000 mg/kg. Diesel- and/or lube oil-range petroleum hydrocarbons were also detected in soil samples FL252-B1-0-1.5, FL252-B3-2.5-3.5, FL252-B3-5-6, FL252-B4-0-1, and FL252-B4-6-6.5 at concentrations less than MTCA Method A cleanup levels (ranging from 120 to 440 mg/kg). Samples FL252-B3-2.5-3.5, FL252-B3-5-6, FL252-B4-0-1, FL252-B4-5-6 and FL252-B4-6-6.5 were analyzed for diesel- and lube oil-range hydrocarbons using Method NWTPH-Dx one day outside of the holding time and results should be considered estimated.

Although gasoline-range hydrocarbons were initially detected by NWTPH-HCID in sample FL252-B4-5-6, gasoline-range hydrocarbons were not detected in the follow up analysis by method NWTPH-Gx. The analysis was performed one day outside of the method holding time and results should be considered estimated.

6.2.1.2 VOCs

Low-level VOCs were detected in soil samples analyzed from FL252-B3 and FL252-B4 as follows: FL252-B3-2.5-3.5 (isopropylbenzene – 0.011 mg/kg, p-isopropyltoluene – 0.12 mg/kg); FL252-B4-5-6 (1,1-dichloroethane – 0.0020 mg/kg); and FL252-B4-7.5-8.5 (carbon disulfide – 0.0018 mg/kg, p-isopropyltoluene – 0.0018 mg/kg). The low-level detections of these VOCs were significantly less than the corresponding MTCA screening levels (if established).

Acetone and 2-butanone (MEK), common laboratory contaminants, were detected in several samples tested for VOCs.

6.2.1.3 SVOCs

Low-level SVOCs were detected in soil samples analyzed from FL252-B1 and FL252-B4 as follows: FL252-B1-0-1.5 (carbazole – 0.13 mg/kg, dibenzofuran – 0.056 mg/kg); FL252-B4-5-6 (3&4 methylphenol – 1.1 mg/kg); and FL252-B4-10-11 (dibutyl phthalate – 0.18 mg/kg). The low-level detections of these VOCs were significantly less than the corresponding MTCA screening levels, where established, for direct contact.

6.2.1.4 PAHs

Carcinogenic and noncarcinogenic PAHs were detected in soil samples analyzed from FL252-B1 (0-1.5 feet and 2.5-3.5 feet bgs), FL252-B3 (0-1-foot bgs) and FL252-B4 (0-1 and 5-6 feet bgs); refer to Table 1 for individual compound concentrations. The detected concentration of cPAHs in sample FL252-B1-0-1.5 (0.7828 mg/kg) was greater than the corresponding MTCA Method A cleanup level of 0.1 mg/kg. This sample also had a low level of lube oil-range hydrocarbons.

The detected concentrations of PAHs in the remaining samples noted above were less than the corresponding MTCA screening levels.

6.2.1.5 Metals

Metals, including arsenic and lead, were not detected at concentrations greater than the corresponding MTCA cleanup levels in the soil samples analyzed with one exception. Arsenic was detected in sample FL252-B1-0-1.5 at a concentration of 28 mg/kg which is greater than the MTCA cleanup level of 20 mg/kg. This sample depth does not meet the criteria for evaluating Tacoma Smelter Plume impacts (further discussion is presented below).

The table below summarizes soil samples with metals detected at concentrations greater than the naturally occurring background concentration in Puget Sound soils:

Metal	Frequency and Sample Depth where Detected Concentration Exceeded Background Concentration	Naturally Occurring Background Concentration (mg/kg)
Arsenic	10 of 18 (0 to 6 feet bgs)	7
Chromium*	2 of 18 (0 to 3.5 feet bgs)	48
Copper	2 of 12 (0 to 1.5 feet bgs)	36
Lead	1 of 18 (0 to 1.5 feet bgs)	24
Nickel	3 of 12 (2.5 to 8.5 feet bgs)	48
Zinc	2 of 12 (0 to 1.5 feet bgs)	85

*The sample with the highest detected concentration of chromium (62 mg/kg) was also analyzed for hexavalent chromium. Hexavalent chromium was not detected.

There are eight soil samples from a depth of 0 to 1-foot bgs that were analyzed for arsenic and lead in general accordance with the “Tacoma Smelter Plume Model Remedies Guidance” (Ecology 2012). Detected arsenic and lead concentrations in the 8 samples were less than respective MTCA Method A cleanup levels (20 mg/kg for arsenic and 250 mg/kg for lead). Therefore, no cleanup action would be required with regard to TSP impacts on this parcel.

6.2.2 Groundwater

One groundwater sample was collected from permanent monitoring well FL252-B2 and was submitted for chemical analysis of the following: gasoline-range petroleum hydrocarbons, diesel- and lube oil-range petroleum hydrocarbons, VOCs, SVOCs, PAHs, total metals and cyanide. Analytes were not detected in the groundwater sample.

7.0 Conclusions and Recommendations

The purpose of the Focused Phase II ESA was to evaluate the potential for RECs or other potential sources of contamination to affect the subject property, and/or to impact soil or groundwater that may be encountered during Sound Transit construction activities at the site.

7.1 Site Reconnaissance

We conducted a visual site reconnaissance of the proposed Sound Transit construction area in May 2018. The proposed construction area is an open gravel lot used for parking truck trailers. No visual evidence of potential sources of contamination was noted during the site reconnaissance.

7.1.1 Focused Phase II ESA Findings

Four hollow stem auger borings (FL252-B1 through FL252-B4) were completed in the eastern portion of the Parcel in areas corresponding to proposed Sound Transit construction. Borings FL252-B1, FL252-B3 and FL252-B4 were advanced to depths of 11.5 feet bgs. Boring FL252-B2 was advanced to a depth of 50 feet bgs and a permanent monitoring well was installed in this boring to enable collection of a groundwater sample. Soil samples were collected from each boring and submitted for chemical analyses. One groundwater sample was collected for analysis from monitoring well FL252-B2. In addition, shallow soil samples obtained from the Focused Phase II ESA explorations were assessed for potential contaminants associated with the Tacoma Smelter Plume (lead and arsenic).

Organics, roots and wood debris suspected to be fill were noted in a dark brown sandy layer observed in FL252-B3 at a depth of 1 to 1.5 feet bgs, and in FL252-B4 at a depth of 5 to 5.5 feet bgs.

7.1.1.1 Soil

Twenty-four soil samples collected from the borings were submitted for chemical analysis of one more of the following: gasoline-range petroleum hydrocarbons, diesel- and lube oil-range petroleum hydrocarbons, VOCs, SVOCs including phenols, PAHs, and priority pollutant metals. Of the 24 soil samples, eight shallow samples collected at 0 to 1-foot bgs were analyzed to evaluate contaminants associated with the TSP; the remaining 16 soil samples were analyzed for potential contaminants associated with current and former operations on the Parcel and with fill.

Diesel- and/or lube oil-range petroleum hydrocarbons were detected in six of 17 soil samples analyzed. The sum of diesel- and lube oil-range petroleum hydrocarbons in the sample from FL252-B4 at a depth of 5 to 6 feet bgs (3,600 mg/kg) was greater than the MTCA Method A cleanup level of 2,000 mg/kg. Diesel- and/or lube oil-range petroleum hydrocarbons were also

detected in soil samples FL252-B1-0-1.5, FL252-B3-2.5-3.5, FL252-B3-5-6, FL252-B4-0-1, and FL252-B4-6-6.5 at concentrations less than MTCA Method A cleanup levels.

Low-level VOCs³ were detected in soil samples FL252-B3-2.5-3.5, FL252-B4-5-6 and FL252-B4-7.5-8.5. Low-level SVOCs⁴ not typically associated with petroleum releases were detected in soil samples FL252-B1-0-1.5, FL252-B4-5-6 and FL252-B4-10-11. The compound bis(2-ethylhexyl) phthalate identified in the regulatory files as a residual contaminant associated with Widing was not detected in the Focused Phase II ESA soil samples.

Carcinogenic and noncarcinogenic PAHs were detected in soil samples FL252-B1-0-1.5 (lube oil also detected), FL252-B1-2.5-3.5, FL252-B3-0-1, FL252-B4-0-1 (lube oil also detected) and FL252-B4-5-6 feet bgs (diesel and lube oil also detected as noted above). The detected concentration of cPAHs in sample FL252-B1-0-1.5 (0.7828 mg/kg) was greater than the corresponding MTCA Method A cleanup level of 0.1 mg/kg. Based on these boring locations and sample depths, the source(s) of cPAHs and petroleum hydrocarbons detected in these samples may be related to past releases from truck maintenance or washing operations.

Metals, including arsenic and lead, were not detected at concentrations greater than the corresponding MTCA cleanup levels in the soil samples analyzed with one exception. Arsenic was detected in sample FL252-B1-0-1.5 at a concentration of 28 mg/kg which is greater than the MTCA Method A cleanup level of 20 mg/kg.

Petroleum hydrocarbons, cPAHs and metals which were detected in samples from FL252-B1, FL252-B3 and FL252-B4, are common contaminants associated with fill of unknown origin. Shallow soil impacts may also be related to former or current facility operations (e.g., impacts from runoff and/or truck and trailer storage and maintenance activities).

7.1.1.2 Groundwater

The depth to groundwater in monitoring well FL252-B2 was 25.6 feet below the well casing rim (measured on June 1, 2018). Petroleum hydrocarbons, priority pollutant metals, cyanide, VOCs and SVOCs were not detected in the groundwater sample collected from FL252-B2. The compound bis(2-ethylhexyl) phthalate identified in the regulatory files as a residual contaminant associated with Widing was not detected in the Focused Phase II ESA groundwater samples.

7.1.1.3 Tacoma Smelter Plume

Detected arsenic and lead concentrations in the 8 samples collected for the purpose of evaluating TSP impacts were less than respective MTCA Method A cleanup levels (20 mg/kg for

³ 1,1-dichloroethane, carbon disulfide, isopropylbenzene, and/or p-isopropyltoluene were detected in these samples.

⁴ Carbazole, dibenzofuran, 3&4 methylphenol and/or dibutyl phthalate were detected in these samples.

arsenic and 250 mg/kg for lead). Residual impacts from the Tacoma Smelter Plume do not appear to be a concern based on the results for arsenic and lead in 8 near surface soil samples.

7.2 Sound Transit Future Construction Recommendations

Based on current design information for the FWLE project (HDR, provided in March 2018), Sound Transit proposes a guideway easement and permanent access and drainage easements in the eastern margin of the Parcel (Figure 2). Sound Transit also proposes TCEs surrounding the other easements. The total easement area is approximately 1 acre. Based on preliminary design information for the project as of March 2018, Sound Transit's proposed construction on the Parcel includes the aerial guideway and tracks, possible guideway support columns, an access road, a new wall and utilities. Proposed construction activities by Sound Transit could change as project design is refined. The Focused Phase II ESA exploration locations were limited to the guideway, permanent and temporary construction easement areas.

Localized areas of impacted and contaminated soil were identified during the Focused Phase II ESA. Contaminants of potential concern detected in one or more samples included petroleum hydrocarbons (greater than MTCA Method A cleanup level in one sample), VOCs, SVOCs, cPAHs (greater than MTCA Method A cleanup level in one sample) and metals (arsenic greater than MTCA Method A cleanup level in one sample). Soil that will be excavated for the Project may require special handling and disposal in accordance with applicable regulations and the contract documents.

We recommend Sound Transit contractors follow procedures to identify and characterize excavated soil in accordance with contaminated/impacted soil screening and handling plans and the contract documents. Soil segregation, handling, stockpiling, waste characterization, and end use/disposal should be based on the results of this Focused Phase II ESA and additional follow-up chemical analytical testing. Widing Transportation was a registered hazardous waste transporter, and for this reason, some of the excavated material may classify as dangerous waste. If additional testing conducted in the future identifies contaminant impacts that may be related to past Widing operations, then waste classifications for the impacted media should be further evaluated as appropriate.

Ecology's "Guidance for Remediation of Petroleum-Contaminated Soil" should be used as a guidance document for soil handling and end use options as appropriate for petroleum-related contaminants.

Based on groundwater analytical data from the May 2018 sample at FL252-B2, we did not identify impacted or contaminated groundwater. However, given the type of information in regulatory files associated with Widing and Gresham Transfer, we recommend as a precaution that solids/fluids encountered and removed during future construction of guideway support columns be additionally characterization to confirm appropriate disposal in accordance with

applicable regulations and the contract documents.

We recommend the Sound Transit update the construction cost estimate based on the findings of the Focused Phase II ESA which identified isolated locations/depths of contaminated and impacted soil that may be encountered during Sound Transit's planned construction.

In accordance with WAC 173-160, we recommend decommissioning of monitoring well FL252-B2 if it is no longer needed.

8.0 Limitations and Guidelines for Use

These Limitations provide information to help you manage your risks with respect to the use of this report. Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory “limitations” provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you are unclear how these “Limitations and Guidelines for Use” apply to your project or site.

This Focused Phase II ESA has been prepared, in general accordance with the scope and limitations of the subcontract between HDR and GeoEngineers dated August 24, 2012, along with Amendments 1 through 12 and Agreement No. RTA/AE 044-12 between HDR and Sound Transit.

This report has been prepared for the exclusive use of Sound Transit and their agents. This report is not intended for use by others, and the information contained herein is not applicable to other properties. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and generally accepted environmental practices in this area at the time this report was prepared.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. The conclusions and opinions presented in this report are based on our professional knowledge, judgment and experience. No warranty, express or implied, applies to this report.

Any electronic form, facsimile or hard copy of the original document (email, text, table and/or figure), if provided, and any attachments should be considered a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.

Please refer to the appendix titled “Report Limitations and Guidelines for Use” for additional information pertaining to use of this report.

9.0 References

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<https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>.

Table 1
Summary of Soil Chemical Analytical Results¹
Sound Transit - Federal Way Link Extension FL-252
Kent, Washington

Boring Identification	FL252-B1				FL252-B2				MTCA Screening Level ¹³	Naturally Occurring Background Metals in Puget Sound Soils ¹⁷
	FL252-B1-0-0.5	FL252-B1-0-1.5	FL252-B1-0.5-1	FL252-B1-2.5-3.5	FL252-B2-0-0.5	FL252-B2-0.5-1	FL252-B2-1-2	FL252-B2-5-6		
	Sample Identification ²	Sample Date	Sample Start Depth (feet bgs)	Sample End Depth (feet bgs)	Sample Date	Sample Start Depth (feet bgs)	Sample End Depth (feet bgs)	Sample Date		
	5/23/2018	5/22/2018	5/23/2018	5/22/2018	5/23/2018	5/23/2018	5/22/2018	5/22/2018		
	0.0	0.0	0.5	2.5	0.0	0.5	1.0	5.0		
	0.5	1.5	1.0	3.5	0.5	1.0	2.0	6.0		
NWTPH-HCID ³ (mg/kg)										
Gasoline-range hydrocarbons	--	22 U	--	23 U	--	--	22 U	--	30/100 ¹⁴	N/A
Diesel-range hydrocarbons	--	54 U	--	56 U	--	--	56 U	--	2,000	
Lube Oil-range Hydrocarbons	--	Detected	--	110 U	--	--	110 U	--	2,000	
NWTPH-Gx ⁴ (mg/kg)										
Gasoline-range hydrocarbons	--	--	--	--	--	--	--	5.6 U	30/100 ¹⁴	N/A
NWTPH-Dx ⁵ (mg/kg)										
Diesel-range hydrocarbons	--	27 U	--	--	--	--	--	27 U	2,000	N/A
Lube Oil-range Hydrocarbons	--	140	--	--	--	--	--	53 U		
Metals ⁶ (mg/kg)										
Antimony	--	7.8	--	5.6 U	--	--	5.6 U	5.3 U	32	NE
Arsenic	11	28	14	11 U	11	9.4	6.6	5.3 U	20	7
Beryllium	--	0.54 U	--	0.56 U	--	--	0.56 U	0.53 U	160	0.6
Cadmium	--	0.54 U	--	0.56 U	--	--	0.56 U	0.53 U	2	1
Chromium	--	52	--	62	--	--	29	42	2,000 ¹⁵	48
Chromium, Hexavalent	--	--	--	1.1 U	--	--	--	--	19	NE
Copper	--	47	--	27	--	--	22	15	3,200	36
Lead	15	39	12	5.6 U	13	5.8 U	5.6 U	5.3 U	250	24
Mercury	--	0.27 U	--	0.28 U	--	--	0.28 U	0.26 U	2	0.07
Nickel	--	46	--	77	--	--	35	28	1,600	48
Selenium	--	11 U	--	11 U	--	--	11 U	11 U	400	NE
Silver	--	1.1 U	--	1.1 U	--	--	1.1 U	1.1 U	400	NE
Thallium	--	2.7 U	--	2.8 U	--	--	2.8 U	2.6 U	0.8	NE
Zinc	--	110	--	39	--	--	39	27	24,000	85
VOCs ⁷ (mg/kg)										
1,1,1,2-Tetrachloroethane	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	38.5	N/A
1,1,1-Trichloroethane	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	2	
1,1,2,2-Tetrachloroethane	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	5	
1,1,2-Trichloroethane	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	17.5	
1,1-Dichloroethane	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	175	
1,1-Dichloroethene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	4,000	
1,1-Dichloropropene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	NE	
1,2,3-Trichlorobenzene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	NE	
1,2,3-Trichloropropane	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	0.0333	
1,2,4-Trichlorobenzene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	34.5	
1,2,4-Trimethylbenzene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	NE	

Boring Identification	FL252-B1				FL252-B2				MTCA Screening Level ¹³	Naturally Occurring Background Metals in Puget Sound Soils ¹⁷
	FL252-B1-0-0.5	FL252-B1-0-1.5	FL252-B1-0.5-1	FL252-B1-2.5-3.5	FL252-B2-0-0.5	FL252-B2-0.5-1	FL252-B2-1-2	FL252-B2-5-6		
	5/23/2018	5/22/2018	5/23/2018	5/22/2018	5/23/2018	5/23/2018	5/22/2018	5/22/2018		
	0.0	0.0	0.5	2.5	0.0	0.5	1.0	5.0		
	0.5	1.5	1.0	3.5	0.5	1.0	2.0	6.0		
1,2-Dibromo-3-Chloropropane	--	0.0065 U	--	0.0047 U	--	--	0.0056 U	0.0043 U	1.25	N/A
1,2-Dibromoethane	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	0.005	
1,2-Dichlorobenzene (o-Dichlorobenzene)	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	7,200	
1,2-Dichloroethane	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	11	
1,2-Dichloropropane	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	27.8	
1,3,5-Trimethylbenzene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	800	
1,3-Dichlorobenzene (m-Dichlorobenzene)	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	NE	
1,3-Dichloropropane	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	NE	
1,4-Dichlorobenzene (p-Dichlorobenzene)	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	185	
2,2-Dichloropropane	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	NE	
2-Butanone (MEK)	--	0.0065 U	--	0.0047 U	--	--	0.0056 U	0.0043 U	48,000	
2-Chloroethyl vinyl ether	--	0.0065 U	--	0.0047 U	--	--	0.0056 U	0.0043 U	NE	
2-Chlorotoluene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	1,600	
2-Hexanone	--	0.0065 U	--	0.0047 U	--	--	0.0056 U	0.0043 U	NE	
4-Chlorotoluene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	NE	
4-Methyl-2-Pentanone (Methyl isobutyl ketone)	--	0.0065 U	--	0.0047 U	--	--	0.0056 U	0.0043 U	6,400	
Acetone ⁸	--	0.023	--	0.018	--	--	0.27	0.0043 U	72,000	
Benzene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	0.03	
Bromobenzene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	NE	
Bromochloromethane	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	NE	
Bromodichloromethane	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	16.1	
Bromoform (Tribromomethane)	--	0.0065 U	--	0.0047 U	--	--	0.0056 U	0.0043 U	127	
Bromomethane	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	112	
Carbon Disulfide	--	0.0018 U	--	0.0013 U	--	--	0.0016 U	0.0012 U	8,000	
Carbon Tetrachloride	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	14.3	
Chlorobenzene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	1,600	
Chloroethane	--	0.0065 U	--	0.0047 U	--	--	0.0056 U	0.0043 U	NE	
Chloroform	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	32.3	
Chloromethane	--	0.0065 U	--	0.0047 U	--	--	0.0056 U	0.0043 U	NE	
cis-1,2-Dichloroethene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	160	
cis-1,3-Dichloropropene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	NE	
Dibromochloromethane	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	11.9	
Dibromomethane	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	800	
Dichlorodifluoromethane (CFC-12)	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	16,000	
Ethylbenzene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	6	
Hexachlorobutadiene	--	0.0065 U	--	0.0047 U	--	--	0.0056 U	0.0043 U	12.8	
Isopropylbenzene (Cumene)	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	8,000	
Methyl Iodide (Iodomethane)	--	0.0065 U	--	0.0047 U	--	--	0.0056 U	0.0043 U	NE	
Methyl t-butyl ether	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	0.1	
Methylene Chloride	--	0.0065 U	--	0.0047 U	--	--	0.0056 U	0.0043 U	0.02	

Boring Identification	FL252-B1				FL252-B2				MTCA Screening Level ¹³	Naturally Occurring Background Metals in Puget Sound Soils ¹⁷
Sample Identification ²	FL252-B1-0-0.5	FL252-B1-0-1.5	FL252-B1-0.5-1	FL252-B1-2.5-3.5	FL252-B2-0-0.5	FL252-B2-0.5-1	FL252-B2-1-2	FL252-B2-5-6		
Sample Date	5/23/2018	5/22/2018	5/23/2018	5/22/2018	5/23/2018	5/23/2018	5/22/2018	5/22/2018		
Sample Start Depth (feet bgs)	0.0	0.0	0.5	2.5	0.0	0.5	1.0	5.0		
Sample End Depth (feet bgs)	0.5	1.5	1.0	3.5	0.5	1.0	2.0	6.0		
Naphthalene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	5	N/A
n-Butylbenzene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	4,000	
n-Propylbenzene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	8,000	
p-Isopropyltoluene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	NE	
Sec-Butylbenzene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	8,000	
Styrene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	16,000	
Tert-Butylbenzene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	8,000	
Tetrachloroethene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	0.05	
Toluene	--	0.0065 U	--	0.0047 U	--	--	0.0056 U	0.0043 U	7	
Trans-1,2-Dichloroethene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	1,600	
Trans-1,3-Dichloropropene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	NE	
Trichloroethene	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	0.03	
Trichlorofluoromethane (CFC-11)	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	24,000	
Vinyl Acetate	--	0.0065 U	--	0.0047 U	--	--	0.0056 U	0.0043 U	80,000	
Vinyl Chloride	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U	240	
Xylene, m-,p-	--	0.0026 U	--	0.0019 U	--	--	0.0022 U	0.0017 U	9	
Xylene, o-	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U		
Total Xylenes ⁹	--	0.0013 U	--	0.00093 U	--	--	0.0011 U	0.00086 U		
SVOCs ¹⁰ (mg/kg)										
1,2,4-Trichlorobenzene	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	34.5	N/A
1,2-Dichlorobenzene (o-Dichlorobenzene)	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	7,200	
1,2-Diphenylhydrazine	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	1.25	
1,3-Dichlorobenzene (m-Dichlorobenzene)	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	NE	
1,3-Dinitrobenzene	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	8	
1,4-Dichlorobenzene (p-Dichlorobenzene)	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	185	
1,4-Dinitrobenzene	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	8	
2,3,4,6-Tetrachlorophenol	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	2,400	
2,3,5,6-Tetrachlorophenol	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	NE	
2,3-Dichloroaniline	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	NE	
2,4,5-Trichlorophenol	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	8,000	
2,4,6-Trichlorophenol	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	80	
2,4-Dichlorophenol	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	240	
2,4-Dimethylphenol	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	1,600	
2,4-Dinitrophenol	--	0.18 U	--	0.19 U	--	--	0.19 U	0.18 U	160	
2,4-Dinitrotoluene	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	3.23	
2,6-Dinitrotoluene	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	0.667	
2-Chloronaphthalene	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	6,400	
2-Chlorophenol	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	400	
2-methylphenol (o-Cresol)	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	4,000	

Boring Identification	FL252-B1				FL252-B2				MTCA Screening Level ¹³	Naturally Occurring Background Metals in Puget Sound Soils ¹⁷
	FL252-B1-0-0.5	FL252-B1-0-1.5	FL252-B1-0.5-1	FL252-B1-2.5-3.5	FL252-B2-0-0.5	FL252-B2-0.5-1	FL252-B2-1-2	FL252-B2-5-6		
	5/23/2018	5/22/2018	5/23/2018	5/22/2018	5/23/2018	5/23/2018	5/22/2018	5/22/2018		
	0.0	0.0	0.5	2.5	0.0	0.5	1.0	5.0		
	0.5	1.5	1.0	3.5	0.5	1.0	2.0	6.0		
2-Nitroaniline	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	800	N/A
2-Nitrophenol	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	NE	
3 & 4 Methylphenol	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	NE	
3,3'-Dichlorobenzidine	--	0.18 U	--	0.19 U	--	--	0.19 U	0.18 U	2.22	
3-Nitroaniline	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	NE	
4,6-Dinitro-2-Methylphenol	--	0.18 U	--	0.19 U	--	--	0.19 U	0.18 U	NE	
4-Bromophenyl phenyl ether	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	NE	
4-Chloro-3-Methylphenol	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	NE	
4-Chloroaniline	--	0.18 U	--	0.19 U	--	--	0.19 U	0.18 U	5	
4-Chlorophenyl-Phenylether	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	NE	
4-Nitroaniline	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	NE	
4-Nitrophenol (p-Nitrophenol)	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	NE	
Aniline	--	0.18 U	--	0.19 U	--	--	0.19 U	0.18 U	175	
Benzidine	--	0.36 U	--	0.37 U	--	--	0.37 U	0.35 U	0.00435	
Benzyl Alcohol	--	0.18 U	--	0.19 U	--	--	0.19 U	0.18 U	8,000	
Bis(2-Chloroethoxy)Methane	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	NE	
Bis(2-Chloroethyl)Ether	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	0.909	
Bis(2-chloroisopropyl) ether	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	NE	
Bis(2-Ethylhexyl) Phthalate	--	0.18 U	--	0.19 U	--	--	0.19 U	0.18 U	71.4	
Bis(2-Ethylhexyl)Ester	--	0.18 U	--	0.19 U	--	--	0.19 U	0.18 U	833	
Butyl benzyl Phthalate	--	0.18 U	--	0.19 U	--	--	0.19 U	0.18 U	526	
Carbazole	--	0.13	--	0.037 U	--	--	0.037 U	0.035 U	NE	
Dibenzofuran	--	0.056	--	0.037 U	--	--	0.037 U	0.035 U	80	
Dibutyl Phthalate	--	0.18 U	--	0.19 U	--	--	0.19 U	0.18 U	8,000	
Diethyl Phthalate	--	0.18 U	--	0.19 U	--	--	0.19 U	0.18 U	64,000	
Dimethyl Phthalate	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	NE	
Di-N-Octyl Phthalate	--	0.18 U	--	0.19 U	--	--	0.19 U	0.18 U	800	
Hexachlorobenzene	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	0.625	
Hexachlorobutadiene	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	12.8	
Hexachlorocyclopentadiene	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	480	
Hexachloroethane	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	25	
Isophorone	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	1,050	
Nitrobenzene	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	160	
N-Nitrosodimethylamine	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	0.0196	
N-Nitrosodi-n-propylamine	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	0.143	
N-Nitrosodiphenylamine (as diphenylamine)	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	204	
o-Dinitrobenzene	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	8	
Pentachlorophenol	--	0.18 U	--	0.19 U	--	--	0.19 U	0.18 U	2.5	
Phenol	--	0.036 U	--	0.037 U	--	--	0.037 U	0.035 U	24,000	
Pyridine	--	0.36 U	--	0.37 U	--	--	0.37 U	0.35 U	80	

Boring Identification	FL252-B1				FL252-B2				MTCA Screening Level ¹³	Naturally Occurring Background Metals in Puget Sound Soils ¹⁷
Sample Identification ²	FL252-B1-0-0.5	FL252-B1-0-1.5	FL252-B1-0.5-1	FL252-B1-2.5-3.5	FL252-B2-0-0.5	FL252-B2-0.5-1	FL252-B2-1-2	FL252-B2-5-6		
Sample Date	5/23/2018	5/22/2018	5/23/2018	5/22/2018	5/23/2018	5/23/2018	5/22/2018	5/22/2018		
Sample Start Depth (feet bgs)	0.0	0.0	0.5	2.5	0.0	0.5	1.0	5.0		
Sample End Depth (feet bgs)	0.5	1.5	1.0	3.5	0.5	1.0	2.0	6.0		
PAHs ¹¹ (mg/kg)										
1-Methylnaphthalene	--	0.019	--	0.0075 U	--	--	0.0075 U	0.0071 U	5	N/A
2-Methylnaphthalene	--	0.024	--	0.0075 U	--	--	0.0075 U	0.0071 U		
Naphthalene	--	0.062	--	0.0075 U	--	--	0.0075 U	0.0071 U		
Total Naphthalenes ¹²	--	0.105	--	0.0075 U	--	--	0.0075 U	0.0071 U		
Acenaphthene	--	0.060	--	0.0075 U	--	--	0.0075 U	0.0071 U	4,800	
Acenaphthylene	--	0.014	--	0.0075 U	--	--	0.0075 U	0.0071 U	NE	
Anthracene	--	0.19	--	0.0075 U	--	--	0.0075 U	0.0071 U	24,000	
Benzo(a)anthracene	--	0.67	--	0.0075 U	--	--	0.0075 U	0.0071 U	See cPAHs	
Benzo(a)pyrene	--	0.55	--	0.0075 U	--	--	0.0075 U	0.0071 U	See cPAHs	
Benzo(b)fluoranthene	--	0.83	--	0.0075 U	--	--	0.0075 U	0.0071 U	See cPAHs	
Benzo(g,h,i)perylene	--	0.39	--	0.0075 U	--	--	0.0075 U	0.0071 U	NE	
Benzo(j,k)fluoranthene	--	0.26	--	0.0075 U	--	--	0.0075 U	0.0071 U	See cPAHs	
Chrysene	--	0.68	--	0.0075 U	--	--	0.0075 U	0.0071 U	See cPAHs	
Dibenzo(a,h)anthracene	--	0.10	--	0.0075 U	--	--	0.0075 U	0.0071 U	See cPAHs	
Fluoranthene	--	1.2	--	0.010	--	--	0.0075 U	0.0071 U	3,200	
Fluorene	--	0.045	--	0.0075 U	--	--	0.0075 U	0.0071 U	3,200	
Indeno(1,2,3-c,d)pyrene	--	0.40	--	0.0075 U	--	--	0.0075 U	0.0071 U	See cPAHs	
Phenanthrene	--	0.82	--	0.0075 U	--	--	0.0075 U	0.0071 U	NE	
Pyrene	--	1.0	--	0.0081	--	--	0.0075 U	0.0071 U	2,400	
cPAHs (benzo(a)pyrene toxicity equivalent concentration) ¹⁶	--	0.7828	--	0.0057 U	--	--	0.0057 U	0.0054 U	0.1	

Notes:

¹ Chemical analysis performed by OnSite Environmental, Inc., of Redmond, Washington.

² Sample ID = Parcel ID - boring number - depth of sample [feet bgs]. FL252-B1-0-0.5 = Boring 1 from Parcel FL252, collected from a depth of 0 to 0.5 feet bgs.

³ Petroleum Hydrocarbon Identification by Northwest Method NWTPH-HCID.

⁴ Gasoline-range petroleum hydrocarbons by Northwest Method NWTPH-Gx.

⁵ Diesel- and lube oil-range petroleum hydrocarbons by Northwest Method NWTPH-Dx.

⁶ Resource Conservation Recovery Act (RCRA) metals analyzed by EPA 6000/7000 series method.

⁷ Volatile organic compounds (VOCs) analyzed by United States Environmental Protection Agency (EPA) Method 8260C.

⁸ Acetone is a common laboratory contaminant.

⁹ Total xylenes consists of m,p- and o- xylenes. The higher detection limit is used for non-detects.

¹⁰ Semi-volatile organic compounds (SVOCs) analyzed by United States Environmental Protection Agency (EPA) Method 8270D.

¹¹ Polycyclic aromatic hydrocarbons (PAHs) and carcinogenic PAHs (cPAHs) analyzed by EPA Method 8270D/SIM.

¹² Total naphthalenes consists of 1-methylnaphthalene, 2-methylnaphthalene and naphthalene.

¹³ MTCA Method A cleanup levels shown if established. Method B cleanup level shown if no Method A cleanup level is established. The MTCA Method B cleanup level shown is the lowest for either carcinogen or non-carcinogen, based on direct contact.

¹⁴ Model Toxics Control Act (MTCA) Method A cleanup level for gasoline is 30 mg/kg if benzene is detected or if the sum of toluene, ethylbenzene and xylenes are greater than or equal to 1% of the total gasoline detection.

¹⁵ MTCA Method A cleanup level for Trivalent Chromium.

¹⁶ Results for cPAHs are shown as the sum of the benzo[a]pyrene toxicity equivalent concentrations, calculated by multiplying each individual cPAH concentration by its corresponding TEF. In this sum, non-detects are represented as ½ of the corresponding analyte reporting limit multiplied by the TEF.

¹⁷ 90th Percentile for natural background soil metals concentrations in Puget Sound region, Department of Ecology, publication #94-115, dated October 1994.

U = Analyte was not detected at or greater than the listed reporting limit.

TEF = Toxicity Equivalency Factor as defined in WAC 173-340-900 Table 708-2.

Bold font type indicates that the analyte was detected at a concentration greater than the respective laboratory reporting limit.

Grey shading indicates that the detected result exceeds the specified MTCA Cleanup Level.

"--" = not tested

mg/kg = milligrams per kilogram

MTCA = Model Toxics Control Act

bgs = below ground surface

NE = not established

N/A = not applicable

Table 1
Summary of Soil Chemical Analytical Results¹
Sound Transit - Federal Way Link Extension FL-252
Federal Way, Washington

Boring Identification	FL252-B2				FL252-B3				MTCA Screening Level ¹³	Naturally Occurring Background Metals in Puget Sound Soils ¹⁷
Sample Identification ²	FL252-B2-15-16	FL252-B2-20-20.8	FL252-B2-25-26	FL252-B2-30-31	FL252-B3-0-0.5	FL252-B3-0-1	FL252-B3-2.5-3.5	FL252-B3-5-6		
Sample Date	5/22/2018	5/22/2018	5/22/2018	5/22/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018		
Sample Start Depth (feet bgs)	15	20	25	30	0.0	0.0	2.5	5.0		
Sample End Depth (feet bgs)	16	20.8	26	31	0.5	1.0	3.5	6.0		
NWTPH-HCID ³ (mg/kg)										
Gasoline-range hydrocarbons	22 U	22 U	22 U	24 U	--	21 U	23 U	--	30/100 ¹⁴	N/A
Diesel-range hydrocarbons	56 U	56 U	56 U	60 U	--	53 U	57 U	--	2,000	
Lube Oil-range Hydrocarbons	110 U	110 U	110 U	120 U	--	110 U	Detected	--	2,000	
NWTPH-Gx ⁴ (mg/kg)										
Gasoline-range hydrocarbons	--	--	--	--	--	--	--	--	30/100 ¹⁴	N/A
NWTPH-Dx ⁵ (mg/kg)										
Diesel-range hydrocarbons	--	--	--	--	--	--	55	30	2,000	N/A
Lube Oil-range Hydrocarbons	--	--	--	--	--	--	200	150		
Metals ⁶ (mg/kg)										
Antimony	5.6 U	--	--	--	--	5.3 U	5.7 U	--	32	NE
Arsenic	5.6 U	--	--	--	--	5.3 U	13	7.2	20	7
Beryllium	0.56 U	--	--	--	--	0.53 U	0.57 U	--	160	0.6
Cadmium	0.56 U	--	--	--	--	0.53 U	0.57 U	--	2	1
Chromium	44	--	--	--	--	26	47	--	2,000 ¹⁵	48
Chromium, Hexavalent	--	--	--	--	--	--	1.1 U	--	19	NE
Copper	8.2	--	--	--	--	30	14	--	3,200	36
Lead	5.6 U	--	--	--	5.4	24	5.7 U	--	250	24
Mercury	0.28 U	--	--	--	--	0.26 U	0.28 U	--	2	0.07
Nickel	21	--	--	--	--	27	50	--	1,600	48
Selenium	11 U	--	--	--	--	11 U	11 U	--	400	NE
Silver	1.1 U	--	--	--	--	1.1 U	1.1 U	--	400	NE
Thallium	2.8 U	--	--	--	--	2.6 U	2.8 U	--	0.8	NE
Zinc	26	--	--	--	--	170	41	--	24,000	85
VOCs ⁷ (mg/kg)										
1,1,1,2-Tetrachloroethane	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	38.5	N/A
1,1,1-Trichloroethane	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	2	
1,1,2,2-Tetrachloroethane	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	5	
1,1,2-Trichloroethane	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	17.5	
1,1-Dichloroethane	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	175	
1,1-Dichloroethene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	4,000	
1,1-Dichloropropene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	NE	
1,2,3-Trichlorobenzene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	NE	
1,2,3-Trichloropropane	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	0.0333	
1,2,4-Trichlorobenzene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	34.5	
1,2,4-Trimethylbenzene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	NE	

Boring Identification Sample Identification ² Sample Date Sample Start Depth (feet bgs) Sample End Depth (feet bgs)	FL252-B2				FL252-B3				MTCA Screening Level ¹³	Naturally Occurring Background Metals in Puget Sound Soils ¹⁷
	FL252-B2-15-16	FL252-B2-20-20.8	FL252-B2-25-26	FL252-B2-30-31	FL252-B3-0-0.5	FL252-B3-0-1	FL252-B3-2.5-3.5	FL252-B3-5-6		
	5/22/2018	5/22/2018	5/22/2018	5/22/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018		
	15	20	25	30	0.0	0.0	2.5	5.0		
	16	20.8	26	31	0.5	1.0	3.5	6.0		
1,2-Dibromo-3-Chloropropane	0.0040 U	0.0054 U	0.0046 U	0.0043 U	--	0.0049 U	0.0084 U	--	1.25	N/A
1,2-Dibromoethane	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	0.005	
1,2-Dichlorobenzene (o-Dichlorobenzene)	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	7,200	
1,2-Dichloroethane	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	11	
1,2-Dichloropropane	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	27.8	
1,3,5-Trimethylbenzene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	800	
1,3-Dichlorobenzene (m-Dichlorobenzene)	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	NE	
1,3-Dichloropropane	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	NE	
1,4-Dichlorobenzene (p-Dichlorobenzene)	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	185	
2,2-Dichloropropane	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	NE	
2-Butanone (MEK)	0.0040 U	0.0054 U	0.0046 U	0.0043 U	--	0.0049 U	0.047	--	48,000	
2-Chloroethyl vinyl ether	0.0040 U	0.0054 U	0.0046 U	0.0043 U	--	0.0049 U	0.0084 U	--	NE	
2-Chlorotoluene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	1,600	
2-Hexanone	0.0040 U	0.0054 U	0.0046 U	0.0043 U	--	0.0049 U	0.0084 U	--	NE	
4-Chlorotoluene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	NE	
4-Methyl-2-Pentanone (Methyl isobutyl ketone)	0.0040 U	0.0054 U	0.0046 U	0.0043 U	--	0.0049 U	0.0084 U	--	6,400	
Acetone ⁸	0.0040 U	0.0054 U	0.0046 U	0.0043 U	--	0.0049 U	0.43	--	72,000	
Benzene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	0.03	
Bromobenzene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	NE	
Bromochloromethane	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	NE	
Bromodichloromethane	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	16.1	
Bromoform (Tribromomethane)	0.0040 U	0.0054 U	0.0046 U	0.0043 U	--	0.0049 U	0.0084 U	--	127	
Bromomethane	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	112	
Carbon Disulfide	0.0011 U	0.0015 U	0.0013 U	0.0012 U	--	0.0014 U	0.0024 U	--	8,000	
Carbon Tetrachloride	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	14.3	
Chlorobenzene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	1,600	
Chloroethane	0.0040 U	0.0054 U	0.0046 U	0.0043 U	--	0.0049 U	0.0084 U	--	NE	
Chloroform	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	32.3	
Chloromethane	0.0040 U	0.0054 U	0.0046 U	0.0043 U	--	0.0049 U	0.0084 U	--	NE	
cis-1,2-Dichloroethene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	160	
cis-1,3-Dichloropropene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	NE	
Dibromochloromethane	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	11.9	
Dibromomethane	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	800	
Dichlorodifluoromethane (CFC-12)	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	16,000	
Ethylbenzene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	6	
Hexachlorobutadiene	0.0040 U	0.0054 U	0.0046 U	0.0043 U	--	0.0049 U	0.0084 U	--	12.8	
Isopropylbenzene (Cumene)	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.011	--	8,000	
Methyl Iodide (Iodomethane)	0.0040 U	0.0054 U	0.0046 U	0.0043 U	--	0.0049 U	0.0084 U	--	NE	
Methyl t-butyl ether	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	0.1	
Methylene Chloride	0.0040 U	0.0054 U	0.0046 U	0.0043 U	--	0.0049 U	0.0084 U	--	0.02	

Boring Identification	FL252-B2				FL252-B3				MTCA Screening Level ¹³	Naturally Occurring Background Metals in Puget Sound Soils ¹⁷
Sample Identification ²	FL252-B2-15-16	FL252-B2-20-20.8	FL252-B2-25-26	FL252-B2-30-31	FL252-B3-0-0.5	FL252-B3-0-1	FL252-B3-2.5-3.5	FL252-B3-5-6		
Sample Date	5/22/2018	5/22/2018	5/22/2018	5/22/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018		
Sample Start Depth (feet bgs)	15	20	25	30	0.0	0.0	2.5	5.0		
Sample End Depth (feet bgs)	16	20.8	26	31	0.5	1.0	3.5	6.0		
Naphthalene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	5	N/A
n-Butylbenzene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	4,000	
n-Propylbenzene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	8,000	
p-Isopropyltoluene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.12	--	NE	
Sec-Butylbenzene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	8,000	
Styrene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	16,000	
Tert-Butylbenzene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	8,000	
Tetrachloroethene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	0.05	
Toluene	0.0040 U	0.0054 U	0.0046 U	0.0043 U	--	0.0049 U	0.0084 U	--	7	
Trans-1,2-Dichloroethene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	1,600	
Trans-1,3-Dichloropropene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	NE	
Trichloroethene	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	0.03	
Trichlorofluoromethane (CFC-11)	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	24,000	
Vinyl Acetate	0.0040 U	0.0054 U	0.0046 U	0.0043 U	--	0.0049 U	0.0084 U	--	80,000	
Vinyl Chloride	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--	240	
Xylene, m-,p-	0.0016 U	0.0021 U	0.0019 U	0.0017 U	--	0.0020 U	0.0034 U	--	9	
Xylene, o-	0.00080 U	0.0011 U	0.00093 U	0.00087 U	--	0.00099 U	0.0017 U	--		
Total Xylenes ⁹	0.00080 U	0.0011 U	0.0019 U	0.0017 U	--	0.0020 U	0.0034 U	--		
SVOCs ¹⁰ (mg/kg)										
1,2,4-Trichlorobenzene	0.037 U	--	--	--	--	0.035 U	0.038 U	--	34.5	N/A
1,2-Dichlorobenzene (o-Dichlorobenzene)	0.037 U	--	--	--	--	0.035 U	0.038 U	--	7,200	
1,2-Diphenylhydrazine	0.037 U	--	--	--	--	0.035 U	0.038 U	--	1.25	
1,3-Dichlorobenzene (m-Dichlorobenzene)	0.037 U	--	--	--	--	0.035 U	0.038 U	--	NE	
1,3-Dinitrobenzene	0.037 U	--	--	--	--	0.035 U	0.038 U	--	8	
1,4-Dichlorobenzene (p-Dichlorobenzene)	0.037 U	--	--	--	--	0.035 U	0.038 U	--	185	
1,4-Dinitrobenzene	0.037 U	--	--	--	--	0.035 U	0.038 U	--	8	
2,3,4,6-Tetrachlorophenol	0.037 U	--	--	--	--	0.035 U	0.038 U	--	2,400	
2,3,5,6-Tetrachlorophenol	0.037 U	--	--	--	--	0.035 U	0.038 U	--	NE	
2,3-Dichloroaniline	0.037 U	--	--	--	--	0.035 U	0.038 U	--	NE	
2,4,5-Trichlorophenol	0.037 U	--	--	--	--	0.035 U	0.038 U	--	8,000	
2,4,6-Trichlorophenol	0.037 U	--	--	--	--	0.035 U	0.038 U	--	80	
2,4-Dichlorophenol	0.037 U	--	--	--	--	0.035 U	0.038 U	--	240	
2,4-Dimethylphenol	0.037 U	--	--	--	--	0.035 U	0.038 U	--	1,600	
2,4-Dinitrophenol	0.19 U	--	--	--	--	0.18 U	0.19 U	--	160	
2,4-Dinitrotoluene	0.037 U	--	--	--	--	0.035 U	0.038 U	--	3.23	
2,6-Dinitrotoluene	0.037 U	--	--	--	--	0.035 U	0.038 U	--	0.667	
2-Chloronaphthalene	0.037 U	--	--	--	--	0.035 U	0.038 U	--	6,400	
2-Chlorophenol	0.037 U	--	--	--	--	0.035 U	0.038 U	--	400	
2-methylphenol (o-Cresol)	0.037 U	--	--	--	--	0.035 U	0.038 U	--	4,000	

Boring Identification Sample Identification ² Sample Date Sample Start Depth (feet bgs) Sample End Depth (feet bgs)	FL252-B2				FL252-B3				MTCA Screening Level ¹³	Naturally Occurring Background Metals in Puget Sound Soils ¹⁷
	FL252-B2-15-16	FL252-B2-20-20.8	FL252-B2-25-26	FL252-B2-30-31	FL252-B3-0-0.5	FL252-B3-0-1	FL252-B3-2.5-3.5	FL252-B3-5-6		
	5/22/2018	5/22/2018	5/22/2018	5/22/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018		
	15	20	25	30	0.0	0.0	2.5	5.0		
	16	20.8	26	31	0.5	1.0	3.5	6.0		
2-Nitroaniline	0.037 U	--	--	--	--	0.035 U	0.038 U	--	800	N/A
2-Nitrophenol	0.037 U	--	--	--	--	0.035 U	0.038 U	--	NE	
3 & 4 Methylphenol	0.037 U	--	--	--	--	0.035 U	0.038 U	--	NE	
3,3'-Dichlorobenzidine	0.19 U	--	--	--	--	0.18 U	0.19 U	--	2.22	
3-Nitroaniline	0.037 U	--	--	--	--	0.035 U	0.038 U	--	NE	
4,6-Dinitro-2-Methylphenol	0.19 U	--	--	--	--	0.18 U	0.19 U	--	NE	
4-Bromophenyl phenyl ether	0.037 U	--	--	--	--	0.035 U	0.038 U	--	NE	
4-Chloro-3-Methylphenol	0.037 U	--	--	--	--	0.035 U	0.038 U	--	NE	
4-Chloroaniline	0.19 U	--	--	--	--	0.18 U	0.19 U	--	5	
4-Chlorophenyl-Phenylether	0.037 U	--	--	--	--	0.035 U	0.038 U	--	NE	
4-Nitroaniline	0.037 U	--	--	--	--	0.035 U	0.038 U	--	NE	
4-Nitrophenol (p-Nitrophenol)	0.037 U	--	--	--	--	0.035 U	0.038 U	--	NE	
Aniline	0.19 U	--	--	--	--	0.18 U	0.19 U	--	175	
Benzidine	0.37 U	--	--	--	--	0.35 U	0.38 U	--	0.00435	
Benzyl Alcohol	0.19 U	--	--	--	--	0.18 U	0.19 U	--	8,000	
Bis(2-Chloroethoxy)Methane	0.037 U	--	--	--	--	0.035 U	0.038 U	--	NE	
Bis(2-Chloroethyl)Ether	0.037 U	--	--	--	--	0.035 U	0.038 U	--	0.909	
Bis(2-chloroisopropyl) ether	0.037 U	--	--	--	--	0.035 U	0.038 U	--	NE	
Bis(2-Ethylhexyl) Phthalate	0.19 U	--	--	--	--	0.18 U	0.19 U	--	71.4	
Bis(2-Ethylhexyl)Ester	0.19 U	--	--	--	--	0.18 U	0.19 U	--	833	
Butyl benzyl Phthalate	0.19 U	--	--	--	--	0.18 U	0.19 U	--	526	
Carbazole	0.037 U	--	--	--	--	0.035 U	0.038 U	--	NE	
Dibenzofuran	0.037 U	--	--	--	--	0.035 U	0.038 U	--	80	
Dibutyl Phthalate	0.19 U	--	--	--	--	0.18 U	0.19 U	--	8,000	
Diethyl Phthalate	0.19 U	--	--	--	--	0.18 U	0.19 U	--	64,000	
Dimethyl Phthalate	0.037 U	--	--	--	--	0.035 U	0.038 U	--	NE	
Di-N-Octyl Phthalate	0.19 U	--	--	--	--	0.18 U	0.19 U	--	800	
Hexachlorobenzene	0.037 U	--	--	--	--	0.035 U	0.038 U	--	0.625	
Hexachlorobutadiene	0.037 U	--	--	--	--	0.035 U	0.038 U	--	12.8	
Hexachlorocyclopentadiene	0.037 U	--	--	--	--	0.035 U	0.038 U	--	480	
Hexachloroethane	0.037 U	--	--	--	--	0.035 U	0.038 U	--	25	
Isophorone	0.037 U	--	--	--	--	0.035 U	0.038 U	--	1,050	
Nitrobenzene	0.037 U	--	--	--	--	0.035 U	0.038 U	--	160	
N-Nitrosodimethylamine	0.037 U	--	--	--	--	0.035 U	0.038 U	--	0.0196	
N-Nitrosodi-n-propylamine	0.037 U	--	--	--	--	0.035 U	0.038 U	--	0.143	
N-Nitrosodiphenylamine (as diphenylamine)	0.037 U	--	--	--	--	0.035 U	0.038 U	--	204	
o-Dintrobenzene	0.037 U	--	--	--	--	0.035 U	0.038 U	--	8	
Pentachlorophenol	0.19 U	--	--	--	--	0.18 U	0.19 U	--	2.5	
Phenol	0.037 U	--	--	--	--	0.035 U	0.038 U	--	24,000	
Pyridine	0.37 U	--	--	--	--	0.35 U	0.38 U	--	80	

Boring Identification	FL252-B2				FL252-B3				MTCA Screening Level ¹³	Naturally Occurring Background Metals in Puget Sound Soils ¹⁷
Sample Identification ²	FL252-B2-15-16	FL252-B2-20-20.8	FL252-B2-25-26	FL252-B2-30-31	FL252-B3-0-0.5	FL252-B3-0-1	FL252-B3-2.5-3.5	FL252-B3-5-6		
Sample Date	5/22/2018	5/22/2018	5/22/2018	5/22/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018		
Sample Start Depth (feet bgs)	15	20	25	30	0.0	0.0	2.5	5.0		
Sample End Depth (feet bgs)	16	20.8	26	31	0.5	1.0	3.5	6.0		
PAHs ¹¹ (mg/kg)										
1-Methylnaphthalene	0.0075 U	--	--	--	--	0.0071 U	0.0075 U	--	5	N/A
2-Methylnaphthalene	0.0075 U	--	--	--	--	0.0071 U	0.0075 U	--		
Naphthalene	0.0075 U	--	--	--	--	0.0074	0.0075 U	--		
Total Naphthalenes ¹²	0.0075 U	--	--	--	--	0.0074	0.0075 U	--		
Acenaphthene	0.0075 U	--	--	--	--	0.0071 U	0.0075 U	--	4,800	
Acenaphthylene	0.0075 U	--	--	--	--	0.0071 U	0.0075 U	--	NE	
Anthracene	0.0075 U	--	--	--	--	0.026	0.0075 U	--	24,000	
Benzo(a)anthracene	0.0075 U	--	--	--	--	0.060	0.0075 U	--	See cPAHs	
Benzo(a)pyrene	0.0075 U	--	--	--	--	0.050	0.0075 U	--	See cPAHs	
Benzo(b)fluoranthene	0.0075 U	--	--	--	--	0.076	0.0075 U	--	See cPAHs	
Benzo(g,h,i)perylene	0.0075 U	--	--	--	--	0.041	0.0075 U	--	NE	
Benzo(j,k)fluoranthene	0.0075 U	--	--	--	--	0.025	0.0075 U	--	See cPAHs	
Chrysene	0.0075 U	--	--	--	--	0.065	0.0075 U	--	See cPAHs	
Dibenzo(a,h)anthracene	0.0075 U	--	--	--	--	0.0071 U	0.0075 U	--	See cPAHs	
Fluoranthene	0.0075 U	--	--	--	--	0.14	0.0075 U	--	3,200	
Fluorene	0.0075 U	--	--	--	--	0.0071 U	0.0075 U	--	3,200	
Indeno(1,2,3-c,d)pyrene	0.0075 U	--	--	--	--	0.038	0.0075 U	--	See cPAHs	
Phenanthrene	0.0075 U	--	--	--	--	0.10	0.0075 U	--	NE	
Pyrene	0.0075 U	--	--	--	--	0.11	0.0075 U	--	2,400	
cPAHs (benzo(a)pyrene toxicity equivalent concentration) ¹⁶	0.0057 U	--	--	--	--	0.0709	0.0057 U	--	0.1	

Table 1
Summary of Soil Chemical Analytical Results¹
Sound Transit - Federal Way Link Extension FL-252
Federal Way, Washington

Boring Identification	FL252-B3	FL252-B4							MTCA Screening Level ¹³	Naturally Occurring Background Metals in Puget Sound Soils ¹⁷
Sample Identification ²	FL252-B3-10-11	FL252-B4-0-0.5	FL252-B4-0-1	FL252-B4-2.5-3.5	FL252-B4-5-6	FL252-B4-6-6.5	FL252-B4-7.5-8.5	FL252-B4-10-11		
Sample Date	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018		
Sample Start Depth (feet bgs)	10	0.0	0.0	2.5	5.0	6.0	7.5	10		
Sample End Depth (feet bgs)	11	0.5	1.0	3.5	6.0	6.5	8.5	11		
NWTPH-HCID ³ (mg/kg)										
Gasoline-range hydrocarbons	22 U	--	21 U	--	Detected	--	24 U	22 U	30/100 ¹⁴	N/A
Diesel-range hydrocarbons	54 U	--	53 U	--	Detected	--	59 U	54 U	2,000	
Lube Oil-range Hydrocarbons	110 U	--	Detected	--	Detected	--	120 U	110 U	2,000	
NWTPH-Gx ⁴ (mg/kg)										
Gasoline-range hydrocarbons	--	--	--	--	12 U	7.6 U	--	--	30/100 ¹⁴	N/A
NWTPH-Dx ⁵ (mg/kg)										
Diesel-range hydrocarbons	--	--	30 U	--	1,200	30 U	--	--	2,000	N/A
Lube Oil-range Hydrocarbons	--	--	440	--	2,400	120	--	--		
Metals ⁶ (mg/kg)										
Antimony	5.4 U	--	5.2 U	--	8.4 U	--	5.9 U	5.4 U	32	NE
Arsenic	5.4 U	7.8	10	--	12	--	5.9 U	5.4 U	20	7
Beryllium	0.54 U	--	0.52 U	--	0.84 U	--	0.59 U	0.54 U	160	0.6
Cadmium	0.54 U	--	0.52 U	--	0.84 U	--	0.59 U	0.54 U	2	1
Chromium	22	--	37	--	38	--	45	21	2,000 ¹⁵	48
Chromium, Hexavalent	--	--	--	--	--	--	--	--	19	NE
Copper	7.9	--	41	--	19	--	12	11	3,200	36
Lead	5.4 U	24	13	--	19	--	5.9 U	5.4 U	250	24
Mercury	0.27 U	--	0.26 U	--	0.42 U	--	0.30 U	0.27 U	2	0.07
Nickel	21	--	29	--	30	--	51	26	1,600	48
Selenium	11 U	--	10 U	--	17 U	--	12 U	11 U	400	NE
Silver	1.1 U	--	1.0 U	--	1.7 U	--	1.2 U	1.1 U	400	NE
Thallium	2.7 U	--	2.6 U	--	4.2 U	--	3.0 U	2.7 U	0.8	NE
Zinc	24	--	84	--	58	--	29	23	24,000	85
VOCs ⁷ (mg/kg)										
1,1,1,2-Tetrachloroethane	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	38.5	N/A
1,1,1-Trichloroethane	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	2	
1,1,2,2-Tetrachloroethane	0.0011 U	--	0.0010 U	0.00095 U	0.11 U	--	0.00097 U	0.0011 U	5	
1,1,2-Trichloroethane	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	17.5	
1,1-Dichloroethane	0.0011 U	--	0.0010 U	0.00095 U	0.0020	--	0.00097 U	0.0011 U	175	
1,1-Dichloroethene	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	4,000	
1,1-Dichloropropene	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	NE	
1,2,3-Trichlorobenzene	0.0011 U	--	0.0010 U	0.00095 U	0.11 U	--	0.00097 U	0.0011 U	NE	
1,2,3-Trichloropropane	0.0011 U	--	0.0010 U	0.00095 U	0.11 U	--	0.00097 U	0.0011 U	0.0333	
1,2,4-Trichlorobenzene	0.0011 U	--	0.0010 U	0.00095 U	0.11 U	--	0.00097 U	0.0011 U	34.5	
1,2,4-Trimethylbenzene	0.0011 U	--	0.0010 U	0.00095 U	0.11 U	--	0.00097 U	0.0011 U	NE	

Boring Identification	FL252-B3	FL252-B4							MTCA Screening Level ¹³	Naturally Occurring Background Metals in Puget Sound Soils ¹⁷
Sample Identification ²	FL252-B3-10-11	FL252-B4-0-0.5	FL252-B4-0-1	FL252-B4-2.5-3.5	FL252-B4-5-6	FL252-B4-6-6.5	FL252-B4-7.5-8.5	FL252-B4-10-11		
Sample Date	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018		
Sample Start Depth (feet bgs)	10	0.0	0.0	2.5	5.0	6.0	7.5	10		
Sample End Depth (feet bgs)	11	0.5	1.0	3.5	6.0	6.5	8.5	11		
1,2-Dibromo-3-Chloropropane	0.0054 U	--	0.0052 U	0.0048 U	0.57 U	--	0.0049 U	0.0055 U	1.25	N/A
1,2-Dibromoethane	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	0.005	
1,2-Dichlorobenzene (o-Dichlorobenzene)	0.0011 U	--	0.0010 U	0.00095 U	0.11 U	--	0.00097 U	0.0011 U	7,200	
1,2-Dichloroethane	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	11	
1,2-Dichloropropane	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	27.8	
1,3,5-Trimethylbenzene	0.0011 U	--	0.0010 U	0.00095 U	0.11 U	--	0.00097 U	0.0011 U	800	
1,3-Dichlorobenzene (m-Dichlorobenzene)	0.0011 U	--	0.0010 U	0.00095 U	0.11 U	--	0.00097 U	0.0011 U	NE	
1,3-Dichloropropane	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	NE	
1,4-Dichlorobenzene (p-Dichlorobenzene)	0.0011 U	--	0.0010 U	0.00095 U	0.11 U	--	0.00097 U	0.0011 U	185	
2,2-Dichloropropane	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	NE	
2-Butanone (MEK)	0.0054 U	--	0.0052 U	0.0048 U	0.025	--	0.0049 U	0.0055 U	48,000	
2-Chloroethyl vinyl ether	0.0054 U	--	0.0052 U	0.0048 U	0.0099 U	--	0.0049 U	0.0055 U	NE	
2-Chlorotoluene	0.0011 U	--	0.0010 U	0.00095 U	0.11 U	--	0.00097 U	0.0011 U	1,600	
2-Hexanone	0.0054 U	--	0.0052 U	0.0048 U	0.0099 U	--	0.0049 U	0.0055 U	NE	
4-Chlorotoluene	0.0011 U	--	0.0010 U	0.00095 U	0.11 U	--	0.00097 U	0.0011 U	NE	
4-Methyl-2-Pentanone (Methyl isobutyl ketone)	0.0054 U	--	0.0052 U	0.0048 U	0.0099 U	--	0.0049 U	0.0055 U	6,400	
Acetone ⁸	0.0054 U	--	0.014	0.0066	0.40	--	0.050	0.0055 U	72,000	
Benzene	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	0.03	
Bromobenzene	0.0011 U	--	0.0010 U	0.00095 U	0.11 U	--	0.00097 U	0.0011 U	NE	
Bromochloromethane	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	NE	
Bromodichloromethane	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	16.1	
Bromoform (Tribromomethane)	0.0054 U	--	0.0052 U	0.0048 U	0.0099 U	--	0.0049 U	0.0055 U	127	
Bromomethane	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	112	
Carbon Disulfide	0.0015 U	--	0.0014 U	0.0013 U	0.0028 U	--	0.0018	0.0015 U	8,000	
Carbon Tetrachloride	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	14.3	
Chlorobenzene	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	1,600	
Chloroethane	0.0054 U	--	0.0052 U	0.0048 U	0.0099 U	--	0.0049 U	0.0055 U	NE	
Chloroform	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	32.3	
Chloromethane	0.0054 U	--	0.0052 U	0.0048 U	0.0099 U	--	0.0049 U	0.0055 U	NE	
cis-1,2-Dichloroethene	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	160	
cis-1,3-Dichloropropene	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	NE	
Dibromochloromethane	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	11.9	
Dibromomethane	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	800	
Dichlorodifluoromethane (CFC-12)	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	16,000	
Ethylbenzene	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	6	
Hexachlorobutadiene	0.0054 U	--	0.0052 U	0.0048 U	0.57 U	--	0.0049 U	0.0055 U	12.8	
Isopropylbenzene (Cumene)	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	8,000	
Methyl Iodide (Iodomethane)	0.0054 U	--	0.0052 U	0.0048 U	0.0099 U	--	0.0049 U	0.0055 U	NE	
Methyl t-butyl ether	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	0.1	
Methylene Chloride	0.0054 U	--	0.0052 U	0.0048 U	0.0099 U	--	0.0049 U	0.0055 U	0.02	

Boring Identification	FL252-B3	FL252-B4							MTCA Screening Level ¹³	Naturally Occurring Background Metals in Puget Sound Soils ¹⁷
Sample Identification ²	FL252-B3-10-11	FL252-B4-0-0.5	FL252-B4-0-1	FL252-B4-2.5-3.5	FL252-B4-5-6	FL252-B4-6-6.5	FL252-B4-7.5-8.5	FL252-B4-10-11		
Sample Date	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018		
Sample Start Depth (feet bgs)	10	0.0	0.0	2.5	5.0	6.0	7.5	10		
Sample End Depth (feet bgs)	11	0.5	1.0	3.5	6.0	6.5	8.5	11		
Naphthalene	0.0011 U	--	0.0010 U	0.00095 U	0.11 U	--	0.00097 U	0.0011 U	5	N/A
n-Butylbenzene	0.0011 U	--	0.0010 U	0.00095 U	0.11 U	--	0.00097 U	0.0011 U	4,000	
n-Propylbenzene	0.0011 U	--	0.0010 U	0.00095 U	0.11 U	--	0.00097 U	0.0011 U	8,000	
p-Isopropyltoluene	0.0011 U	--	0.0010 U	0.00095 U	0.11 U	--	0.0018	0.0011 U	NE	
Sec-Butylbenzene	0.0011 U	--	0.0010 U	0.00095 U	0.11 U	--	0.00097 U	0.0011 U	8,000	
Styrene	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	16,000	
Tert-Butylbenzene	0.0011 U	--	0.0010 U	0.00095 U	0.11 U	--	0.00097 U	0.0011 U	8,000	
Tetrachloroethene	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	0.05	
Toluene	0.0054 U	--	0.0052 U	0.0048 U	0.0099 U	--	0.0049 U	0.0055 U	7	
Trans-1,2-Dichloroethene	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	1,600	
Trans-1,3-Dichloropropene	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	NE	
Trichloroethene	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	0.03	
Trichlorofluoromethane (CFC-11)	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	24,000	
Vinyl Acetate	0.0054 U	--	0.0052 U	0.0048 U	0.0099 U	--	0.0049 U	0.0055 U	80,000	
Vinyl Chloride	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U	240	
Xylene, m-,p-	0.0022 U	--	0.0021 U	0.0019 U	0.0040 U	--	0.0019 U	0.0022 U	9	
Xylene, o-	0.0011 U	--	0.0010 U	0.00095 U	0.0020 U	--	0.00097 U	0.0011 U		
Total Xylenes ⁹	0.0022 U	--	0.0021 U	0.0019 U	0.0040 U	--	0.0019 U	0.0022 U		
SVOCs ¹⁰ (mg/kg)										
1,2,4-Trichlorobenzene	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	34.5	N/A
1,2-Dichlorobenzene (o-Dichlorobenzene)	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	7,200	
1,2-Diphenylhydrazine	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	1.25	
1,3-Dichlorobenzene (m-Dichlorobenzene)	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	NE	
1,3-Dinitrobenzene	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	8	
1,4-Dichlorobenzene (p-Dichlorobenzene)	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	185	
1,4-Dinitrobenzene	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	8	
2,3,4,6-Tetrachlorophenol	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	2,400	
2,3,5,6-Tetrachlorophenol	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	NE	
2,3-Dichloroaniline	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	NE	
2,4,5-Trichlorophenol	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	8,000	
2,4,6-Trichlorophenol	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	80	
2,4-Dichlorophenol	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	240	
2,4-Dimethylphenol	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	1,600	
2,4-Dinitrophenol	0.18 U	--	0.17 U	--	5.6 U	--	0.20 U	0.18 U	160	
2,4-Dinitrotoluene	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	3.23	
2,6-Dinitrotoluene	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	0.667	
2-Chloronaphthalene	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	6,400	
2-Chlorophenol	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	400	
2-methylphenol (o-Cresol)	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	4,000	

Boring Identification	FL252-B3	FL252-B4							MTCA Screening Level ¹³	Naturally Occurring Background Metals in Puget Sound Soils ¹⁷
Sample Identification ²	FL252-B3-10-11	FL252-B4-0-0.5	FL252-B4-0-1	FL252-B4-2.5-3.5	FL252-B4-5-6	FL252-B4-6-6.5	FL252-B4-7.5-8.5	FL252-B4-10-11		
Sample Date	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018		
Sample Start Depth (feet bgs)	10	0.0	0.0	2.5	5.0	6.0	7.5	10		
Sample End Depth (feet bgs)	11	0.5	1.0	3.5	6.0	6.5	8.5	11		
2-Nitroaniline	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	800	N/A
2-Nitrophenol	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	NE	
3 & 4 Methylphenol	0.036 U	--	0.035 U	--	1.1	--	0.040 U	0.036 U	NE	
3,3'-Dichlorobenzidine	0.18 U	--	0.17 U	--	5.6 U	--	0.20 U	0.18 U	2.22	
3-Nitroaniline	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	NE	
4,6-Dinitro-2-Methylphenol	0.18 U	--	0.17 U	--	5.6 U	--	0.20 U	0.18 U	NE	
4-Bromophenyl phenyl ether	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	NE	
4-Chloro-3-Methylphenol	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	NE	
4-Chloroaniline	0.18 U	--	0.17 U	--	5.6 U	--	0.20 U	0.18 U	5	
4-Chlorophenyl-Phenylether	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	NE	
4-Nitroaniline	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	NE	
4-Nitrophenol (p-Nitrophenol)	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	NE	
Aniline	0.18 U	--	0.17 U	--	5.6 U	--	0.20 U	0.18 U	175	
Benzidine	0.36 U	--	0.35 U	--	11 U	--	0.40 U	0.36 U	0.00435	
Benzyl Alcohol	0.18 U	--	0.17 U	--	5.6 U	--	0.20 U	0.18 U	8,000	
Bis(2-Chloroethoxy)Methane	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	NE	
Bis(2-Chloroethyl)Ether	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	0.909	
Bis(2-chloroisopropyl) ether	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	NE	
Bis(2-Ethylhexyl) Phthalate	0.18 U	--	0.17 U	--	5.6 U	--	0.20 U	0.18 U	71.4	
Bis(2-Ethylhexyl)Ester	0.18 U	--	0.17 U	--	5.6 U	--	0.20 U	0.18 U	833	
Butyl benzyl Phthalate	0.18 U	--	0.17 U	--	5.6 U	--	0.20 U	0.18 U	526	
Carbazole	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	NE	
Dibenzofuran	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	80	
Dibutyl Phthalate	0.18 U	--	0.17 U	--	5.6 U	--	0.20 U	0.18	8,000	
Diethyl Phthalate	0.18 U	--	0.17 U	--	5.6 U	--	0.20 U	0.18 U	64,000	
Dimethyl Phthalate	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	NE	
Di-N-Octyl Phthalate	0.18 U	--	0.17 U	--	5.6 U	--	0.20 U	0.18 U	800	
Hexachlorobenzene	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	0.625	
Hexachlorobutadiene	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	12.8	
Hexachlorocyclopentadiene	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	480	
Hexachloroethane	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	25	
Isophorone	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	1,050	
Nitrobenzene	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	160	
N-Nitrosodimethylamine	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	0.0196	
N-Nitrosodi-n-propylamine	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	0.143	
N-Nitrosodiphenylamine (as diphenylamine)	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	204	
o-Dinitrobenzene	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	8	
Pentachlorophenol	0.18 U	--	0.17 U	--	5.6 U	--	0.20 U	0.18 U	2.5	
Phenol	0.036 U	--	0.035 U	--	1.1 U	--	0.040 U	0.036 U	24,000	
Pyridine	0.36 U	--	0.35 U	--	11 U	--	0.40 U	0.36 U	80	

Boring Identification	FL252-B3	FL252-B4							MTCA Screening Level ¹³	Naturally Occurring Background Metals in Puget Sound Soils ¹⁷
Sample Identification ²	FL252-B3-10-11	FL252-B4-0-0.5	FL252-B4-0-1	FL252-B4-2.5-3.5	FL252-B4-5-6	FL252-B4-6-6.5	FL252-B4-7.5-8.5	FL252-B4-10-11		
Sample Date	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018		
Sample Start Depth (feet bgs)	10	0.0	0.0	2.5	5.0	6.0	7.5	10		
Sample End Depth (feet bgs)	11	0.5	1.0	3.5	6.0	6.5	8.5	11		
PAHs ¹¹ (mg/kg)										
1-Methylnaphthalene	0.0072 U	--	0.0070 U	--	0.045 U	--	0.0079 U	0.0072 U	5	N/A
2-Methylnaphthalene	0.0072 U	--	0.0070 U	--	0.045 U	--	0.0079 U	0.0072 U		
Naphthalene	0.0072 U	--	0.0070 U	--	0.11	--	0.0079 U	0.0072 U		
Total Naphthalenes ¹²	0.0072 U	--	0.0070 U	--	0.11	--	0.0079 U	0.0072 U		
Acenaphthene	0.0072 U	--	0.0070 U	--	0.045 U	--	0.0079 U	0.0072 U	4,800	
Acenaphthylene	0.0072 U	--	0.0070 U	--	0.045 U	--	0.0079 U	0.0072 U	NE	
Anthracene	0.0072 U	--	0.014	--	0.045 U	--	0.0079 U	0.0072 U	24,000	
Benzo(a)anthracene	0.0072 U	--	0.016	--	0.045 U	--	0.0079 U	0.0072 U	See cPAHs	
Benzo(a)pyrene	0.0072 U	--	0.017	--	0.045 U	--	0.0079 U	0.0072 U	See cPAHs	
Benzo(b)fluoranthene	0.0072 U	--	0.040	--	0.045 U	--	0.0079 U	0.0072 U	See cPAHs	
Benzo(g,h,i)perylene	0.0072 U	--	0.017	--	0.045 U	--	0.0079 U	0.0072 U	NE	
Benzo(j,k)fluoranthene	0.0072 U	--	0.013	--	0.045 U	--	0.0079 U	0.0072 U	See cPAHs	
Chrysene	0.0072 U	--	0.027	--	0.045 U	--	0.0079 U	0.0072 U	See cPAHs	
Dibenzo(a,h)anthracene	0.0072 U	--	0.0070 U	--	0.045 U	--	0.0079 U	0.0072 U	See cPAHs	
Fluoranthene	0.0072 U	--	0.050	--	0.045 U	--	0.0079 U	0.0072 U	3,200	
Fluorene	0.0072 U	--	0.0070 U	--	0.045 U	--	0.0079 U	0.0072 U	3,200	
Indeno(1,2,3-c,d)pyrene	0.0072 U	--	0.019	--	0.045 U	--	0.0079 U	0.0072 U	See cPAHs	
Phenanthrene	0.0072 U	--	0.025	--	0.072	--	0.0079 U	0.0072 U	NE	
Pyrene	0.0072 U	--	0.043	--	0.045 U	--	0.0079 U	0.0072 U	2,400	
cPAHs (benzo(a)pyrene toxicity equivalent concentration) ¹⁶	0.0054 U	--	0.0264	--	0.034 U	--	0.006 U	0.0054 U	0.1	

Table 2

Summary of Groundwater Chemical Analytical Results¹

Sound Transit - Federal Way Link Extension FL-252

Kent, Washington

Well Identification	FL252-MWB2	MTCA Method A/B Cleanup Level ¹¹
Sample Identification ²	FL252-MWB2-20180601	
Sample Date	6/1/2018	
NWTPH-HCID ³ (mg/L)		
Gasoline-range hydrocarbons	0.10 U	0.80/1 ¹²
Diesel-range hydrocarbons	0.26 U	0.5
Lube Oil-range Hydrocarbons	0.41 U	0.5
Cyanide ⁴ (mg/L)		
Total cyanide	0.005 U	9.6
Total Metals ⁵ (µg/L)		
Antimony	5.6 U	6.4
Arsenic	3.3 U	5
Beryllium	11 U	32
Cadmium	4.4 U	5
Chromium	11 U	50
Copper	11 U	640
Lead	1.1 U	15
Mercury	0.50 U	2
Nickel	22 U	320
Selenium	5.6 U	80
Silver	11 U	80
Thallium	5.6 U	0.16
Zinc	28 U	4,800
VOCs ⁶ (µg/L)		
1,1,1,2-Tetrachloroethane	0.20 U	1.68
1,1,1-Trichloroethane	0.20 U	200
1,1,2,2-Tetrachloroethane	0.20 U	0.219
1,1,2-Trichloroethane	0.20 U	0.768
1,1-Dichloroethane	0.20 U	7.68
1,1-Dichloroethene	0.20 U	400
1,1-Dichloropropene	0.20 U	NE
1,2,3-Trichlorobenzene	0.20 U	NE
1,2,3-Trichloropropane	0.20 U	0.00146
1,2,4-Trichlorobenzene	0.20 U	1.51
1,2,4-Trimethylbenzene	0.20 U	NE
1,2-Dibromo-3-Chloropropane	1.0 U	0.0547
1,2-Dibromoethane	0.20 U	0.01
1,2-Dichlorobenzene (o-Dichlorobenzene)	0.20 U	720
1,2-Dichloroethane	0.20 U	5
1,2-Dichloropropane	0.20 U	1.22
1,3,5-Trimethylbenzene	0.20 U	80
1,3-Dichlorobenzene (m-Dichlorobenzene)	0.20 U	NE
1,3-Dichloropropane	0.20 U	NE
1,4-Dichlorobenzene (p-Dichlorobenzene)	0.20 U	8.10
2,2-Dichloropropane	0.20 U	NE
2-Butanone (MEK)	5.0 U	4,800
2-Chloroethyl vinyl ether	1.5 U	NE
2-Chlorotoluene	0.20 U	160
2-Hexanone	2.0 U	NE
4-Chlorotoluene	0.20 U	NE
4-Methyl-2-Pentanone (Methyl isobutyl ketone)	2.0 U	640
Acetone	5.0 U	7,200
Benzene	0.20 U	5
Bromobenzene	0.20 U	NE
Bromochloromethane	0.20 U	NE
Bromodichloromethane	0.20 U	0.706
Bromoform (Tribromomethane)	1.0 U	5.54
Bromomethane	0.20 U	11.2
Carbon Disulfide	0.36 U	800
Carbon Tetrachloride	0.20 U	0.625
Chlorobenzene	0.20 U	160
Chloroethane	1.0 U	NE
Chloroform	0.20 U	1.41
Chloromethane	1.0 U	NE
cis-1,2-Dichloroethene	0.20 U	16
cis-1,3-Dichloropropene	0.20 U	NE
Dibromochloromethane	0.20 U	0.521
Dibromomethane	0.20 U	80
Dichlorodifluoromethane (CFC-12)	0.20 U	1,600
Ethylbenzene	0.20 U	700

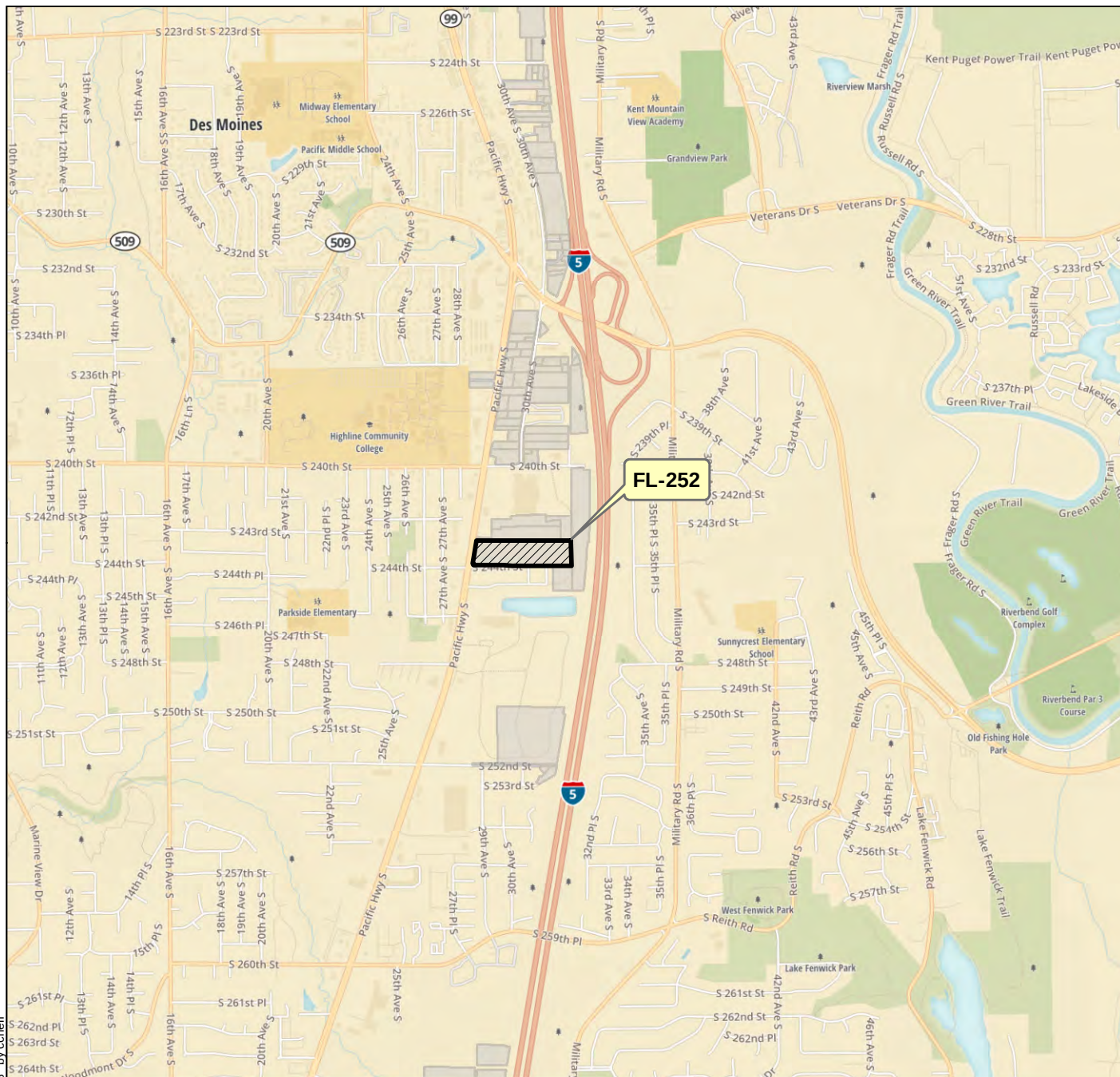
Well Identification	FL252-MWB2	MTCA Method A/B Cleanup Level ¹¹
Sample Identification ²	FL252-MWB2-20180601	
Sample Date	6/1/2018	
Hexachlorobutadiene	1.0 U	0.561
Isopropylbenzene (Cumene)	0.20 U	800
Methyl Iodide (Iodomethane)	1.9 U	NE
Methyl t-butyl ether	0.20 U	20
Methylene Chloride	1.0 U	5
Naphthalene	1.0 U	160
n-Butylbenzene	0.20 U	400
n-Propylbenzene	0.20 U	800
p-Isopropyltoluene	0.20 U	NE
Sec-Butylbenzene	0.20 U	800
Styrene	0.20 U	1,600
Tert-Butylbenzene	0.20 U	800
Tetrachloroethene	0.20 U	5
Toluene	1.0 U	1,000
Trans-1,2-Dichloroethene	0.20 U	160
Trans-1,3-Dichloropropene	0.20 U	NE
Trichloroethene	0.20 U	5
Trichlorofluoromethane (CFC-11)	0.20 U	2,400
Vinyl Acetate	1.0 U	8,000
Vinyl Chloride	0.20 U	0.2
Xylene, m-,p-	0.40 U	1,000
Xylene, o-	0.20 U	
Total Xylenes ⁷	0.40 U	
SVOCs ⁸ (µg/L)		
1,2,4-Trichlorobenzene	0.94 U	1.51
1,2-Dichlorobenzene (o-Dichlorobenzene)	0.94 U	720
1,2-Diphenylhydrazine	0.94 U	0.109
1,3-Dichlorobenzene (m-Dichlorobenzene)	0.94 U	NE
1,3-Dinitrobenzene	0.94 U	1.6
1,4-Dichlorobenzene (p-Dichlorobenzene)	0.94 U	8.1
1,4-Dinitrobenzene	0.94 U	1.6
2,3,4,6-Tetrachlorophenol	0.94 U	480
2,3,5,6-Tetrachlorophenol	0.94 U	NE
2,3-Dichloroaniline	0.94 U	NE
2,4,5-Trichlorophenol	0.94 U	800
2,4,6-Trichlorophenol	0.94 U	3.98
2,4-Dichlorophenol	0.94 U	24
2,4-Dimethylphenol	0.94 U	160
2,4-Dinitrophenol	4.7 U	32
2,4-Dinitrotoluene	0.94 U	0.282
2,6-Dinitrotoluene	0.94 U	0.0583
2-Chloronaphthalene	0.94 U	640
2-Chlorophenol	0.94 U	40
2-methylphenol (o-Cresol)	0.94 U	400
2-Nitroaniline	0.94 U	160
2-Nitrophenol	0.94 U	NE
3 & 4 Methylphenol	0.94 U	NE
3,3'-Dichlorobenzidine	0.94 U	0.194
3-Nitroaniline	0.94 U	NE
4,6-Dinitro-2-Methylphenol	4.7 U	NE
4-Bromophenyl phenyl ether	0.94 U	NE
4-Chloro-3-Methylphenol	0.94 U	NE
4-Chloroaniline	0.94 U	0.219
4-Chlorophenyl-Phenylether	0.94 U	NE
4-Nitroaniline	0.94 U	NE
4-Nitrophenol (p-Nitrophenol)	4.7 U	NE
Aniline	4.7 U	7.68
Benzidine	4.7 U	0.00038
Benzyl Alcohol	0.94 U	800
Bis(2-Chloroethoxy)Methane	0.94 U	NE
Bis(2-Chloroethyl)Ether	0.94 U	0.0398
Bis(2-chloroisopropyl) ether	0.94 U	NE
Bis(2-Ethylhexyl) Phthalate	0.94 U	6.25
Bis(2-Ethylhexyl)Ester	0.94 U	72.9
Butyl benzyl Phthalate	0.94 U	46.1
Carbazole	0.94 U	NE
Dibenzofuran	0.94 U	16
Dibutyl Phthalate	3.3 U	1600
Diethyl Phthalate	0.94 U	12800
Dimethyl Phthalate	0.94 U	NE
Di-N-Octyl Phthalate	0.94 U	160
Hexachlorobenzene	0.94 U	0.0547

Well Identification	FL252-MWB2	MTCA Method A/B Cleanup Level ¹¹
Sample Identification ²	FL252-MWB2-20180601	
Sample Date	6/1/2018	
Hexachlorobutadiene	0.94 U	0.561
Hexachlorocyclopentadiene	0.94 U	48
Hexachloroethane	0.94 U	1.09
Isophorone	0.94 U	46.1
Nitrobenzene	0.94 U	16
N-Nitrosodimethylamine	0.94 U	0.000858
N-Nitrosodi-n-propylamine	0.94 U	0.0125
N-Nitrosodiphenylamine (as diphenylamine)	0.94 U	17.9
o-Dinitrobenzene	0.94 U	1.6
Pentachlorophenol	4.7 U	0.219
Phenol	0.94 U	2400
Pyridine	0.94 U	8
PAHs ⁹ (µg/L)		
1-Methylnaphthalene	0.094 U	160
2-Methylnaphthalene	0.094 U	
Naphthalene	0.094 U	
Total Naphthalenes ¹⁰	0.094 U	
Acenaphthene	0.094 U	960
Acenaphthylene	0.094 U	NE
Anthracene	0.094 U	4,800
Benzo(a)anthracene	0.0094 U	See cPAHs
Benzo(a)pyrene	0.0094 U	See cPAHs
Benzo(b)fluoranthene	0.0094 U	See cPAHs
Benzo(g,h,i)perylene	0.0094 U	NE
Benzo(j,k)fluoranthene	0.0094 U	See cPAHs
Chrysene	0.0094 U	See cPAHs
Dibenzo(a,h)anthracene	0.0094 U	See cPAHs
Fluoranthene	0.094 U	640
Fluorene	0.094 U	640
Indeno(1,2,3-c,d)pyrene	0.0094 U	See cPAHs
Phenanthrene	0.094 U	NE
Pyrene	0.094 U	480
cPAHs (benzo(a)pyrene toxicity equivalent concentration) ¹³	0.0071 U	0.1

Notes:

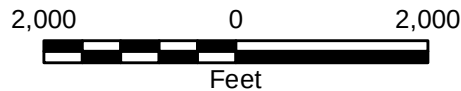
- ¹ Chemical analysis performed by OnSite Environmental, Inc., of Redmond, Washington.
- ² Sample ID = Parcel ID - well ID - collection date. FL252-MWB2-20180601 = MW B2 from Parcel FL252, collected on 6/1/2018.
- ³ Petroleum Hydrocarbon Identification by Northwest Method NWTPH-HCID.
- ⁴ Total cyanide analyzed by United States Environmental Protection Agency (EPA) Method 335.4.
- ⁵ Resource Conservation Recovery Act (RCRA) metals analyzed by United States Environmental Protection Agency (EPA) Method 200.8.
- ⁶ Volatile organic compounds (VOCs) analyzed by United States Environmental Protection Agency (EPA) Method 8260C.
- ⁷ Total xylenes consists of m,p- and o- xylenes. The higher detection limit is used for non-detects.
- ⁸ Semi-volatile organic compounds (SVOCs) analyzed by United States Environmental Protection Agency (EPA) Method 8270D.
- ⁹ Polycyclic aromatic hydrocarbons (PAHs) and carcinogenic PAHs (cPAHs) analyzed by EPA Method 8270D/SIM.
- ¹⁰ Total naphthalenes consists of 1-methylnaphthalene, 2-methylnaphthalene and naphthalene.
- ¹¹ MTCA Method B cleanup level used when Method A cleanup level has not been established.
- ¹² Model Toxics Control Act (MTCA) Method A cleanup level for gasoline is 800 µg/L if benzene is detected.
- ¹³ Results for cPAHs are shown as the sum of the benzo[a]pyrene
- mg/L = milligrams per liter
- µg/L = micrograms per liter
- NE = not established
- MTCA = Model Toxics Control Act
- U = Analyte was not detected at or greater than the listed reporting limit.
- TEF = Toxicity Equivalency Factor as defined in WAC 173-340-900 Table 708-2.

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Legend

-  Subject Property
-  Project Parcel



Vicinity Map FL-252

Phase II ESA
Federal Way Link Extension
Kent, Washington



Figure 1

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Mapbox Open Street Map, 2017

Projection: NAD 1983 UTM Zone 10N



Legend

- | | | | | | | | |
|--|--------------------|--|--|--|---------------------|--|------------------|
| | Hollow-stem Boring | | One or More Samples Analyzed were > MTCA Screening Levels | | Geotechnical Boring | | Subject Property |
| | Monitoring Well | | All Samples Analyzed Either were ND or < MTCA Screening Levels | | | | Parcel |

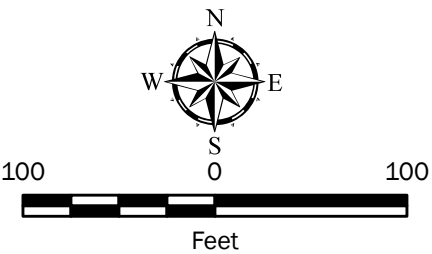
Notes:

1. Based on current design information for the FWLE project (HDR provided in March 2018).
2. The locations of all features shown are approximate. 3. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication. Data Source: Aerial and road names from King County 2015. Projection: NAD 1983 StatePlane Washington North FIPS 4601 Feet

Parcel #: 2122049046
Address: 24300 PACIFIC HWY S
City: Kent
Owner: CITY PACIFIC LAND CO., LLC.
Current: Service Building

Planned Construction Features

- | | | | |
|--|-----------------------------|--|-----------|
| | Track | | Structure |
| | Road/Parking/Sidewalk | | |
| | Stormwater Ponds and Vaults | | |
| | Wall | | |
| | Proposed Sewer | | |



Proposed Construction Plan FL-252	
Phase II ESA Federal Way Link Extension Kent, Washington	
	Figure 3

APPENDIX A

FIELD EXPLORATION PROGRAM

APPENDIX A

FIELD PROCEDURES AND BORING LOGS

Underground Utility Locate

Prior to drilling activities, an underground utility locate was conducted in the areas of the proposed boring locations to identify subsurface utilities and/or potential underground physical hazards. The underground utility check consisted of contacting a local utility alert service (one-call) and hiring a private utility locating service.

Soil Sampling

The hollow stem auger explorations were completed using hollow-stem auger drilling equipment. Soil samples from the hollow-stem auger borings were obtained using a split spoon sampler. The sampler was driven into the soil using a 140-pound hammer. Upon retrieval, the sampler was opened and a GeoEngineers representative examined the soil and performed field screening tests. The boring logs are presented in Figures A-2 through A-5. Selected photographs taken during the Phase II ESA drilling are presented as Figures A-6 through A-9.

Selected soil samples were obtained in glass jars (supplied by the analytical laboratory), labeled and stored in a cooler with ice pending delivery to the laboratory. VOC samples were collected first, directly from the sample sleeve using the 5035A sampling method. Following the VOC sample collection, the remaining soil was placed in sample containers provided by the analytical laboratory. All sampling equipment was decontaminated between samples using a Liqui-Nox® wash solution and distilled water rinse.

Soil samples obtained from the explorations were collected from the sampler with a stainless-steel knife, a stainless-steel trowel and/or new gloves. A portion of each sample was placed in laboratory-prepared sample jars for possible chemical analysis. The remaining portion of each sample was used for field screening.

The samples collected from the borings were identified using the following identification system: FL252-B1-0.5-1, where FL-252 is the identified Federal Way Link Extension parcel on which the boring was located, B1 is the boring number and the approximate depth at which the sample was obtained (e.g., FL252-B1-0.5-1 was collected from the FL-252 parcel at boring B1 at a depth of approximately 0.5 to 1.0 feet bgs).

Selected samples from the explorations were submitted for chemical analysis based on field screening results. The soil samples were placed in a cooler with ice for transport to the laboratory. Standard chain-of-custody procedures were followed in transporting the soil samples to the laboratory. Drill cuttings were placed in drums pending disposal. A copy of the soil composite drum sample is included in Appendix B.

Field Screening of Soil Samples

Soil samples obtained from the borings were screened in the field for evidence of contamination using: 1) visual examination; 2) sheen screening and 3) vapor headspace screening with a photo-ionization detector (PID). The results of headspace and sheen screening are included in the boring logs.

Visual screening consists of inspecting the soil for stains indicative of petroleum-related contamination. Visual screening is generally more effective when contamination is related to heavy petroleum hydrocarbons, such as motor oil or hydraulic oil, or when hydrocarbon concentrations are high. Sheen screening and headspace vapor screening are more sensitive methods that have been effective in detecting contamination at concentrations less than regulatory cleanup guidelines. Sheen screening involves placing soil in a pan of water and observing the water surface for signs of sheen. Sheen classifications are as follows:

No Sheen (NS)	No visible sheen on water surface.
Slight Sheen (SS)	Light, colorless, dull sheen; spread is irregular, not rapid; sheen dissipates rapidly.
Moderate Sheen (MS)	Light to heavy sheen, may have some color/iridescence; spread is irregular to flowing; few remaining areas of no sheen on water surface.
Heavy Sheen (HS)	Heavy sheen with color/iridescence; spread is rapid; entire water surface may be covered with sheen.

Headspace vapor screening involves placing a soil sample in a plastic sample bag. Air is captured in the bag and the bag is shaken to expose the soil to the air trapped in the bag. The probe of a PID is inserted in the bag and the instrument measures the concentration of combustible vapor in the air removed from the sample headspace. The PID measures concentrations in ppm (parts per million) and is calibrated to isobutylene. The PID is designed to quantify combustible gas and organic vapor concentrations up to 2,500 ppm. A lower threshold of significance of 1 ppm was used in this application. Field screening results are site-specific and vary with soil type, soil moisture content, temperature and type of contaminant.

Monitoring Well Construction

GeoEngineers installed a permanent monitoring well in boring FL252-B2. A GeoEngineers' field representative observed and documented the monitoring well installation, and maintained a log of the well construction materials, depths of materials, and depths of each well. Well construction details are included in Appendix A, Figure A-3.

The monitoring well was constructed using 2-inch-diameter, schedule 40 PVC well casing and well screen. The well was constructed with a 20-foot screened interval from 30 to 50 feet bgs.

Colorado silica sand or equivalent was placed in the annular space surrounding the screen and extended 2 feet above the screen.

The monitoring well was completed with a bentonite seal and a flush-mounted monument. A lockable cap was installed at the top of the PVC well casing. A concrete surface-seal was placed around the monument at the ground surface to divert surface water away from the wellhead location.

The groundwater monitoring well was developed to remove water introduced into the well during drilling, the filter pack and formation materials surrounding the well screen were stabilized, and the hydraulic connection between the well screen and the surrounding soil was restored. The well was developed until the water was relatively free of sediment. Water generated during development was drummed, labeled, and is temporarily stored on site. After development, the well was allowed to stabilize for 72 hours prior to sampling.

Groundwater Sampling

Consideration was given to sampling existing geotechnical well FWLE-A26; however, upon opening the well, evidence of surface infiltration was observed. Therefore, FWLE-A26 was not sampled as part of the Focused Phase II ESA.

A groundwater sample was obtained from the newly installed monitoring well using low-flow/low-turbidity sampling techniques to minimize the suspension of particulates in the samples. The groundwater sample was obtained from the monitoring wells using a peristaltic pump with disposable tubing. Groundwater was pumped at approximately 0.5 liters per minute from the approximate midpoint of the screened interval. A water quality measuring system with a flow-through-cell was used to monitor the following water quality parameters during purging: electrical conductivity, dissolved oxygen, pH, turbidity, oxidation-reduction potential and temperature. Ambient groundwater conditions were assumed to have been reached once these parameters varied by less than 10 percent on three consecutive measurements. All field measurements were documented on the field logs.

After well purging, the flow-through-cell was disconnected, and the groundwater sample was collected in laboratory-prepared containers. The groundwater sample was placed in a cooler with ice and logged on the chain-of-custody record. Purge water was stored in a labeled drum at the site.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS	
			GRAPH	LETTER		
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES	
		(LITTLE OR NO FINES)		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES	
		GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES	
		(APPRECIABLE AMOUNT OF FINES)		GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES	
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	SAND AND SANDY SOILS	CLEAN SANDS		SW	WELL-GRADED SANDS, GRAVELLY SANDS
			(LITTLE OR NO FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SAND
MORE THAN 50% RETAINED ON NO. 200 SIEVE	SANDS WITH FINES	(APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES	
		(APPRECIABLE AMOUNT OF FINES)		SC	CLAYEY SANDS, SAND - CLAY MIXTURES	
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY	
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
	MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
					CH	INORGANIC CLAYS OF HIGH PLASTICITY
					OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS	

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

Sampler Symbol Descriptions

	2.4-inch I.D. split barrel
	Standard Penetration Test (SPT)
	Shelby tube
	Piston
	Direct-Push
	Bulk or grab
	Continuous Coring

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

"P" indicates sampler pushed using the weight of the drill rig.

"WOH" indicates sampler pushed using the weight of the hammer.

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS		TYPICAL DESCRIPTIONS
GRAPH	LETTER	
	AC	Asphalt Concrete
	CC	Cement Concrete
	CR	Crushed Rock/Quarry Spalls
	SOD	Sod/Forest Duff
	TS	Topsoil

Groundwater Contact



Measured groundwater level in exploration, well, or piezometer



Measured free product in well or piezometer

Graphic Log Contact



Distinct contact between soil strata



Approximate contact between soil strata

Material Description Contact



Contact between geologic units



Contact between soil of the same geologic unit

Laboratory / Field Tests

%F	Percent fines
%G	Percent gravel
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DD	Dry density
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
Mohs	Mohs hardness scale
OC	Organic content
PM	Permeability or hydraulic conductivity
PI	Plasticity index
PP	Pocket penetrometer
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
VS	Vane shear

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen

Key to Exploration Logs



Figure A-1

Drilled	Start 5/22/2018	End 5/22/2018	Total Depth (ft)	11.5	Logged By Checked By	CJG DLC	Driller	Holt Services, Inc.	Drilling Method	Hollow-stem Auger
Surface Elevation (ft) Vertical Datum	380.62 NAVD88			Hammer Data	Autohammer 140 (lbs) / 30 (in) Drop			Drilling Equipment	Mobile B-58 Rig	
Easting (X) Northing (Y)	143419.8334 1278994.7979			System Datum	WA State Plane North NAD83			Groundwater not observed at time of exploration		
Notes:										

Elevation (feet)	FIELD DATA					MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS	
	Depth (feet)	Interval Recovered (in)	Blows/foot	Collected Sample Sample Name Testing	Graphic Log					Group Classification
380	0	12		FL252-B1-0-1 CA		SPSM	Brown fine to coarse sand with silt with fine gravel and occasional coarse gravel (moist)	NS	<1	
						NR	No recovery			
		12		FL252-B1-2.5-3.5 CA		SM	Brown silty fine to coarse sand (moist)	NS	<1	
						NR	No recovery			
375	5			FL252-B1-5-6		SM	Brown silty fine to coarse sand with fine gravel (moist)	NS	<1	
						GP-GM	Brown gravel with silt and sand			
						SM	Brown medium silty sand, trace silt in shoe (moist)			
						NR	No recovery			
				FL252-B1-7.5-8.5		SPSM	Gray-brown fine to coarse sand with silt and occasional fine to coarse gravel (moist)	NS	<1	
						NR	No recovery			
370	10			FL252-B1-10-11		SM	Brown silty fine sand with occasional medium to coarse sand and fine gravel (moist)			

Note: See Figure A-1 for explanation of symbols.

Coordinates Data Source: Horizontal approximated based on GPS (Rec). Vertical approximated based on topographic map provided by Sound Transit.

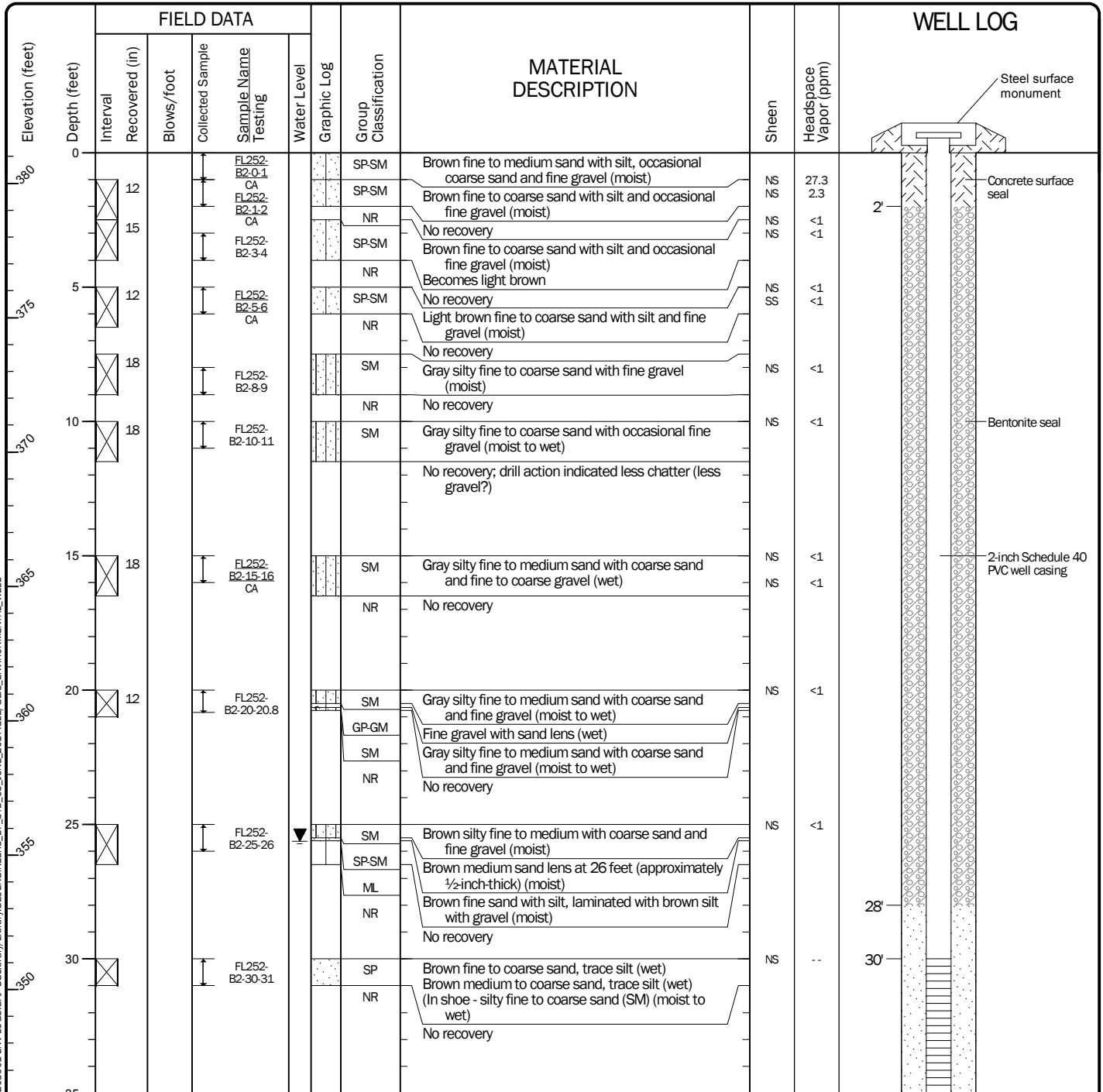
Log of Boring FL252-B1



Project: Sound Transit - Federal Way Link Extension FL-252
Project Location: 24300 Pacific Highway S., Kent, Washington
Project Number: 4082-039-01

Figure A-2
Sheet 1 of 1

Start Drilled 5/22/2018	End 5/22/2018	Total Depth (ft) 50	Logged By Checked By CJG DLC	Driller Holt Services, Inc.	Drilling Method Hollow-stem Auger	
Hammer Data	Autohammer 140 (lbs) / 30 (in) Drop	Drilling Equipment Mobile B-58 Rig			A 2 (in) well was installed on 5/22/2017 to a depth of 50 (ft).	
Surface Elevation (ft) Vertical Datum	381.14 NAVD88	Top of Casing Elevation (ft)				
Easting (X) Northing (Y)	143406.3688 1279075.9575	Horizontal Datum	WA State Plane North NAD83	<u>Groundwater</u> Date Measured 6/1/2018		Depth to Water (ft) 25.63
Notes:						



Note: See Figure A-1 for explanation of symbols.

Coordinates Data Source: Horizontal approximated based on GPS (Rec). Vertical approximated based on topographic map provided by Sound Transit.

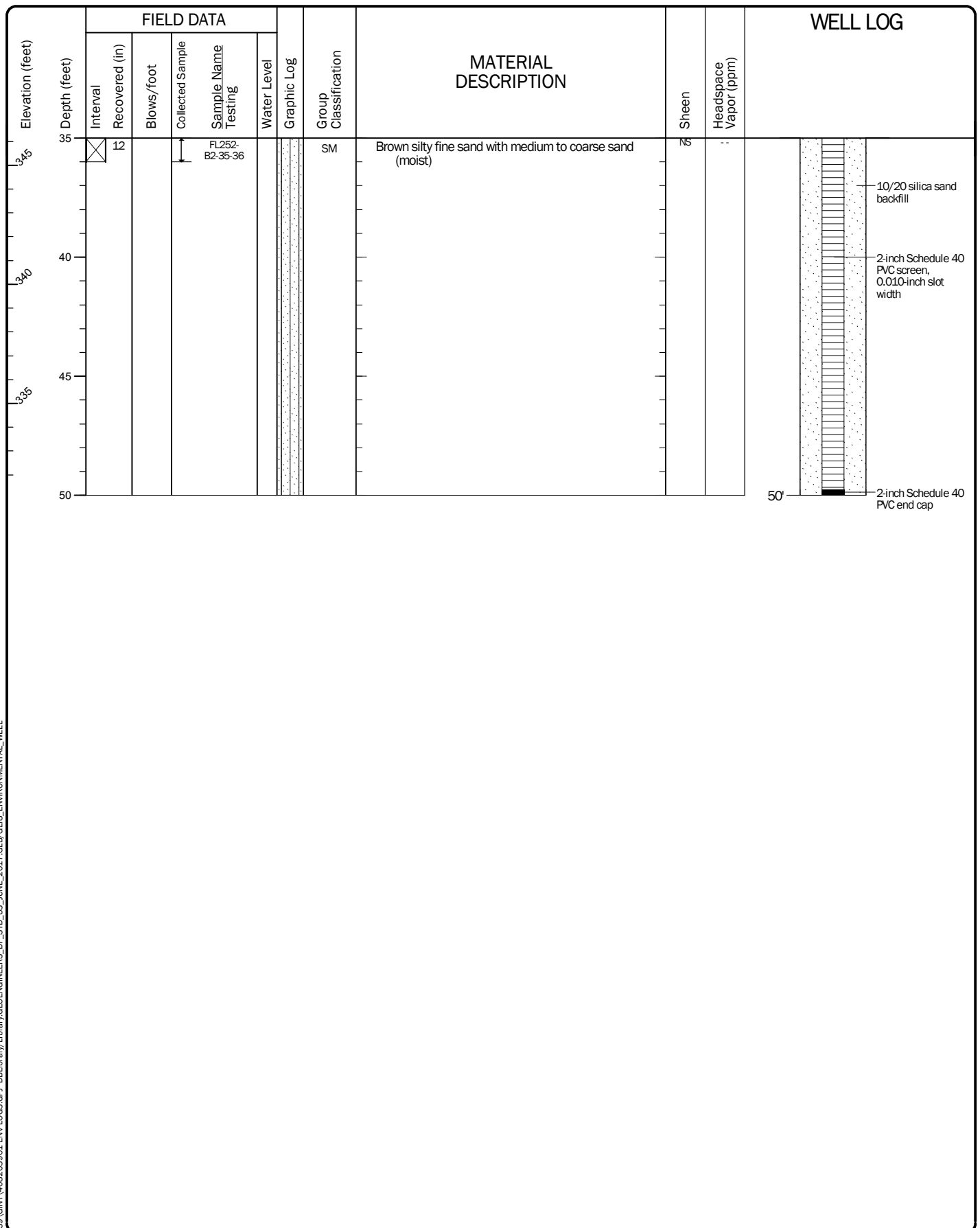
Log of Monitoring Well FL252-B2



Project: Sound Transit - Federal Way Link Extension FL-252
Project Location: 24300 Pacific Highway S., Kent, Washington
Project Number: 4082-039-01

Figure A-3
Sheet 1 of 2

Date: 7/3/18 Path: P:\40820390\GINT\408203901 ENV LOGS.GPJ DELIBRARY/Library\GEOENGINEERS_DF STD_US_JUNE_2017 GLB\GB8 ENVIRONMENTAL_WELL



Log of Monitoring Well FL252-B2 (continued)



Project: Sound Transit - Federal Way Link Extension FL-252
 Project Location: 24300 Pacific Highway S., Kent, Washington
 Project Number: 4082-039-01

Figure A-3
 Sheet 2 of 2

Drilled	Start 5/23/2018	End 5/23/2018	Total Depth (ft)	11.5	Logged By Checked By	CJG DLC	Driller	Holt Services, Inc.	Drilling Method	Hollow-stem Auger
Surface Elevation (ft) Vertical Datum	380.05 NAVD88			Hammer Data	Autohammer 140 (lbs) / 30 (in) Drop			Drilling Equipment	Mobile B-58 Rig	
Easting (X) Northing (Y)	143254.9462 1279024.9022			System Datum	WA State Plane North NAD83			Groundwater not observed at time of exploration		
Notes:										

Elevation (feet)	FIELD DATA				Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	Depth (feet)	Interval Recovered (in)	Blows/foot	Collected Sample						
375	0			FL252-B3-0-0.5 FL252-B3-0-1 CA		GP-GM	Brown fine to coarse gravel with fine to coarse silt and sand (dry)	MS	<1	
						SP-SM	Dark brown fine to coarse sand with silt and organic matter (roots, wood chunks) (moist) (fill)			
	12			FL252-B3-2.5-3.5 CA		SP-SM	Dark brown to brown fine to coarse sand with silt and occasional fine gravel (moist)	NS	<1	
						NR	No recovery			
5	12			FL252-B3-5.6 CA		SP-SM	Dark brown to brown fine to coarse sand with silt and occasional fine gravel (moist)	NS	<1	
						NR	No recovery			
	18			FL252-B3-7.5-8.5		SM	Gray silty fine to coarse sand with fine gravel and occasional coarse gravel (moist)	NS	<1	
						NR	No recovery			
370	10			FL252-B3-10-11 CA		SM	Gray silty fine to coarse sand with fine gravel and occasional coarse gravel (moist)	NS	<1	

Note: See Figure A-1 for explanation of symbols.

Coordinates Data Source: Horizontal approximated based on GPS (Rec). Vertical approximated based on topographic map provided by Sound Transit.

Log of Boring FL252-B3



Project: Sound Transit - Federal Way Link Extension FL-252
Project Location: 24300 Pacific Highway S., Kent, Washington
Project Number: 4082-039-01

Figure A-4
Sheet 1 of 1

Date: 7/3/18 Path: P:\4082039\GINT\408203901 ENV\LOGS.GPJ DELIBRARY/Library\GEOENGINEERS_DF STD_US_JUNE_2017 GLB\GEB8 ENVIRONMENTAL_STANDARD_NO_GW

Drilled	Start 5/23/2018	End 5/23/2018	Total Depth (ft)	11.5	Logged By Checked By	CJG DLC	Driller	Holt Services, Inc.	Drilling Method	Hollow-stem Auger	
Surface Elevation (ft) Vertical Datum			378.12 NAVD88		Hammer Data		Autohammer 140 (lbs) / 30 (in) Drop		Drilling Equipment		Mobile B-58 Rig
Easting (X) Northing (Y)			1279051.4996 143150.4179		System Datum		WA State Plane North NAD83		Groundwater not observed at time of exploration		
Notes:											

Elevation (feet)	FIELD DATA					MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS	
	Depth (feet)	Interval Recovered (in)	Blows/foot	Collected Sample Sample Name Testing	Graphic Log					Group Classification
375	0	12		FL252- B4-0-0.5 CA FL252- B4-0.5-1 CA		GP-GM	Brown gravel with silt and sand (dry to moist)	SS	<1	No odor
						NR	No recovery	NS	<1	
		6		FL252- B4-2.5-3.5 CA		SM	Gray silty fine to coarse sand (moist)			
						NR	No recovery			
370	5	18		FL252- B4-5-6 CA FL252- B4-6-6.5 CA		SPSM	Dark brown fine to coarse sand with silt and organic matter (wood debris) (moist) (fill)	NS	<1	
						SM	Brown silty fine to coarse sand (moist) (fill)	NS	<1	
						NR	No recovery	NS	<1	
		12		FL252- B4-7.5-8.5 CA		SP	Gray fine to medium sand, occasional coarse sand, trace silt (moist to wet)			
						GP-GM	Gray gravel with silt and fine to coarse sand (moist)			
						NR	No recovery			
10		12		FL252- B4-10-11 CA FL252- B4-11-11.5		SPSM	Brown-red to brown fine to medium sand with silt (moist)	MS	<1	
						SPSM	Gray fine to coarse sand with silt and fine to coarse gravel (moist)	SS	<1	

Note: See Figure A-1 for explanation of symbols.

Coordinates Data Source: Horizontal approximated based on GPS (Rec). Vertical approximated based on topographic map provided by Sound Transit.

Log of Boring FL252-B4



Project: Sound Transit - Federal Way Link Extension FL-252
Project Location: 24300 Pacific Highway S., Kent, Washington
Project Number: 4082-039-01

Figure A-5
Sheet 1 of 1

Date: 7/3/18 Path: P:\4082039\GINT\408203901 ENV\LOGS.GPJ DELIBRARY/Library\GEOENGINEERS_DF STD_US_JUNE_2017 GLB\GEB8 ENVIRONMENTAL_STANDARD_NO_GW



Photograph 1 – Eastern portion of parcel FL-252 where Sound Transit is proposing guideway, access and drainage easements and where aerial guideway will be constructed; view to east.



Photograph 2 – FL-252 – Southeastern margin of parcel FL-252, view toward southeast.

**FL-252 Site Photos May 2018
Kent, WA**

Phase II Environmental Site Assessment
Federal Way Link Extension
Washington



Figure A-6



Photograph 3 – Exploration FL252-B1 in the northeast corner of the parcel FL-252, view to north.



Photograph 4 – FL-252 – Exploration location FL252-B2 that was completed as a monitoring well, view to east.

**FL-252 Site Photos May 2018
Kent, WA**

Phase II Environmental Site Assessment
Federal Way Link Extension
Kent, Washington



Figure A-7



Photograph 5 – FL-252 – Exploration FL252-B3 in the central-eastern portion of the subject property, view looking southeast.



Photograph 6 – FL-252 – Exploration location FL252-B4 in the southeastern corner of the subject property near geotechnical boring FWLE-A26P, view looking east.

**FL-252 Site Photos May 2018
Kent, WA**

Phase II Environmental Site Assessment
Federal Way Link Extension
Kent, Washington



Figure A-8



Photograph 7 – FL-252 – Exploration location FL252-B1 soil core from surface to 1.5 feet below ground surface. Arsenic and cPAHs were detected in this sample at concentrations greater than corresponding MTCA cleanup levels.



Photograph 8 – FL-252 – Exploration FL252-B4 soil core from 5 to 6.5 feet below ground surface. The dark layer contained wood chunks. Lube oil-range petroleum hydrocarbons were detected in this sample at a concentration greater than the MTCA Method A cleanup level.

**FL-252 Site Photos May 2018
Kent, WA**

Phase II Environmental Site Assessment
Federal Way Link Extension
Kent, Washington



Figure A-9

APPENDIX B
CHEMICAL ANALYTICAL PROGRAM

APPENDIX B

CHEMICAL ANALYTICAL DATA

Analytical Methods

Chain-of-custody procedures were followed during the transport of the soil samples to the analytical laboratory. The samples were held in cold storage pending extraction and/or analysis. The analytical results, analytical methods reference and laboratory quality control (QC) records are included in this appendix. The analytical results are also summarized in the text and tables of this report.

Analytical Data Review

The laboratory maintains an internal quality assurance program as documented in its laboratory quality assurance manual. The laboratory uses a combination of blanks, surrogate recoveries, duplicates, matrix spike recoveries, matrix spike duplicate recoveries, blank spike recoveries and blank spike duplicate recoveries to evaluate the validity of the analytical results. The laboratory also uses data quality goals for individual chemicals or groups of chemicals based on the long-term performance of the test methods. The data quality goals were included in the laboratory reports. The laboratory compared each group of samples with the existing data quality goals and noted any exceptions in the laboratory report. Data quality exceptions documented by the accredited laboratory were reviewed by GeoEngineers and are addressed in the data quality exception section of this appendix.

Analytical Data Review Summary

The following quality control exceptions were noted by the testing laboratory.

Lab Report 1805-259

- Soil samples FL252-B4-5-6 and FL252-B4-6-6.5 were analyzed for gasoline-range hydrocarbons using Method NWTPH-Gx one day after expiration of the recommending holding time for this analysis. The results should be considered estimated.
- Soil samples FL252-B3-2.5-3.5, FL252-B3-5-6, FL252-B4-0-1, FL252-B4-5-6 and FL252-B4-6-6.5 were analyzed for diesel- and lube oil-range hydrocarbons using Method NWTPH-Dx one day outside of the holding time. Diesel- and oil-range hydrocarbon detections in the samples may be biased low.
- Sample FL252-B3-0-1 analyzed for SVOCs by EPA 8270D/SIM analysis had one surrogate recovery of each acid and base outside of control limits. According to the laboratory, this is within allowance of standard operating procedures as long as the recovery is above 10%.
- The Duplicate QC sample analyzed for total metals had a relative percent difference for zinc outside of control limits due to sample inhomogeneity. The sample was re-extracted and re-

analyzed with similar results.

- The Matrix Spike/Matrix Spike Duplicate QC sample recoveries for zinc were outside of control limits due to matrix inhomogeneity. The sample was re-extracted and re-analyzed with similar results. The Spike Blank recovery was 104%.

Based on our data quality review, it is our opinion that the laboratory data qualifiers listed above are not significant with regard to the use of the data for characterization purposes. The samples/results were considered of acceptable quality for their intended use in this report.



14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

June 8, 2018

Marsi Beeson
GeoEngineers, Inc.
12000 NW Naito Parkway, Suite 180
Portland, OR 97209

Re: Analytical Data for Project 4082-039-01
Laboratory Reference No. 1805-243

Dear Marsi:

Enclosed are the analytical results and associated quality control data for samples submitted on May 23, 2018.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read 'DeB' followed by a stylized flourish.

David Baumeister
Project Manager

Enclosures



OnSite Environmental, Inc. 14648 NE 95th Street, Redmond, WA 98052 (425) 883-3881

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: June 8, 2018
Samples Submitted: May 23, 2018
Laboratory Reference: 1805-243
Project: 4082-039-01

Case Narrative

Samples were collected on May 22, 2018 and received by the laboratory on May 23, 2018. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.



Date of Report: June 8, 2018
Samples Submitted: May 23, 2018
Laboratory Reference: 1805-243
Project: 4082-039-01

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
FL252-B2-1-2	05-243-02	Soil	5-22-18	5-23-18	
FL252-B2-5-6	05-243-04	Soil	5-22-18	5-23-18	
FL252-B2-15-16	05-243-07	Soil	5-22-18	5-23-18	
FL252-B2-20-20.8	05-243-08	Soil	5-22-18	5-23-18	
FL252-B2-25-26	05-243-09	Soil	5-22-18	5-23-18	
FL252-B2-30-31	05-243-10	Soil	5-22-18	5-23-18	
FL252-B1-0-1.5	05-243-12	Soil	5-22-18	5-23-18	
FL252-B1-2.5-3.5	05-243-13	Soil	5-22-18	5-23-18	



Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-243
 Project: 4082-039-01

NWTPH-HCID

Matrix: Soil
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B2-1-2					
Laboratory ID:	05-243-02					
Gasoline Range Organics	ND	22	NWTPH-HCID	5-24-18	5-24-18	
Diesel Range Organics	ND	56	NWTPH-HCID	5-24-18	5-24-18	
Lube Oil Range Organics	ND	110	NWTPH-HCID	5-24-18	5-24-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	92	50-150				

Client ID:	FL252-B2-15-16					
Laboratory ID:	05-243-07					
Gasoline Range Organics	ND	22	NWTPH-HCID	5-24-18	5-29-18	
Diesel Range Organics	ND	56	NWTPH-HCID	5-24-18	5-29-18	
Lube Oil Range Organics	ND	110	NWTPH-HCID	5-24-18	5-29-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	93	50-150				

Client ID:	FL252-B2-20-20.8					
Laboratory ID:	05-243-08					
Gasoline Range Organics	ND	22	NWTPH-HCID	5-24-18	5-25-18	
Diesel Range Organics	ND	56	NWTPH-HCID	5-24-18	5-25-18	
Lube Oil Range Organics	ND	110	NWTPH-HCID	5-24-18	5-25-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	102	50-150				

Client ID:	FL252-B2-25-26					
Laboratory ID:	05-243-09					
Gasoline Range Organics	ND	22	NWTPH-HCID	5-24-18	5-30-18	
Diesel Range Organics	ND	56	NWTPH-HCID	5-24-18	5-30-18	
Lube Oil Range Organics	ND	110	NWTPH-HCID	5-24-18	5-30-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	93	50-150				

Client ID:	FL252-B2-30-31					
Laboratory ID:	05-243-10					
Gasoline Range Organics	ND	24	NWTPH-HCID	5-24-18	5-25-18	
Diesel Range Organics	ND	60	NWTPH-HCID	5-24-18	5-25-18	
Lube Oil Range Organics	ND	120	NWTPH-HCID	5-24-18	5-25-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	97	50-150				



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NWTPH-HCID

Matrix: Soil
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B1-0-1.5					
Laboratory ID:	05-243-12					
Gasoline Range Organics	ND	22	NWTPH-HCID	5-24-18	5-24-18	
Diesel Range Organics	ND	54	NWTPH-HCID	5-24-18	5-24-18	
Lube Oil Range Organics	Detected	110	NWTPH-HCID	5-24-18	5-24-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	96	50-150				

Client ID:	FL252-B1-2.5-3.5					
Laboratory ID:	05-243-13					
Gasoline Range Organics	ND	23	NWTPH-HCID	5-24-18	5-25-18	
Diesel Range Organics	ND	56	NWTPH-HCID	5-24-18	5-25-18	
Lube Oil Range Organics	ND	110	NWTPH-HCID	5-24-18	5-25-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	97	50-150				



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NWTPH-Gx

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B2-5-6					
Laboratory ID:	05-243-04					
Gasoline	ND	5.6	NWTPH-Gx	5-29-18	5-29-18	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	79	57-129				



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NWTPH-Dx

Matrix: Soil
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B2-5-6					
Laboratory ID:	05-243-04					
Diesel Range Organics	ND	27	NWTPH-Dx	5-25-18	5-29-18	
Lube Oil Range Organics	ND	53	NWTPH-Dx	5-25-18	5-29-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	86	50-150				



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Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:		FL252-B2-1-2				
Laboratory ID:		05-243-02				
Dichlorodifluoromethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Chloromethane	ND	0.0056	EPA 8260C	5-31-18	5-31-18	
Vinyl Chloride	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Bromomethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Chloroethane	ND	0.0056	EPA 8260C	5-31-18	5-31-18	
Trichlorofluoromethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Acetone	0.27	0.0056	EPA 8260C	5-31-18	5-31-18	
Iodomethane	ND	0.0056	EPA 8260C	5-31-18	5-31-18	
Carbon Disulfide	ND	0.0016	EPA 8260C	5-31-18	5-31-18	
Methylene Chloride	ND	0.0056	EPA 8260C	5-31-18	5-31-18	
(trans) 1,2-Dichloroethene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Methyl t-Butyl Ether	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Vinyl Acetate	ND	0.0056	EPA 8260C	5-31-18	5-31-18	
2,2-Dichloropropane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
(cis) 1,2-Dichloroethene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
2-Butanone	ND	0.0056	EPA 8260C	5-31-18	5-31-18	
Bromochloromethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Chloroform	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1,1-Trichloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Carbon Tetrachloride	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloropropene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Benzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Trichloroethene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloropropane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Dibromomethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Bromodichloromethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
2-Chloroethyl Vinyl Ether	ND	0.0056	EPA 8260C	5-31-18	5-31-18	
(cis) 1,3-Dichloropropene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Methyl Isobutyl Ketone	ND	0.0056	EPA 8260C	5-31-18	5-31-18	
Toluene	ND	0.0056	EPA 8260C	5-31-18	5-31-18	
(trans) 1,3-Dichloropropene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B2-1-2					
Laboratory ID:	05-243-02					
1,1,2-Trichloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Tetrachloroethene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,3-Dichloropropane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
2-Hexanone	ND	0.0056	EPA 8260C	5-31-18	5-31-18	
Dibromochloromethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromoethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Chlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1,1,2-Tetrachloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Ethylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
m,p-Xylene	ND	0.0022	EPA 8260C	5-31-18	5-31-18	
o-Xylene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Styrene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Bromoform	ND	0.0056	EPA 8260C	5-31-18	5-31-18	
Isopropylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Bromobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1,2,2-Tetrachloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichloropropane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
n-Propylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
2-Chlorotoluene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
4-Chlorotoluene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,3,5-Trimethylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
tert-Butylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trimethylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
sec-Butylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
p-Isopropyltoluene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
n-Butylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromo-3-chloropropane	ND	0.0056	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.0056	EPA 8260C	5-31-18	5-31-18	
Naphthalene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	86	68-139				
Toluene-d8	88	79-128				
4-Bromofluorobenzene	81	71-132				



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Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:		FL252-B2-5-6				
Laboratory ID:		05-243-04				
Dichlorodifluoromethane	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Chloromethane	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
Vinyl Chloride	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Bromomethane	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Chloroethane	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
Trichlorofluoromethane	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Acetone	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
Iodomethane	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
Carbon Disulfide	ND	0.0012	EPA 8260C	5-31-18	5-31-18	
Methylene Chloride	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
(trans) 1,2-Dichloroethene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Methyl t-Butyl Ether	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethane	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Vinyl Acetate	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
2,2-Dichloropropane	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
(cis) 1,2-Dichloroethene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
2-Butanone	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
Bromochloromethane	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Chloroform	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
1,1,1-Trichloroethane	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Carbon Tetrachloride	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloropropene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Benzene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloroethane	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Trichloroethene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloropropane	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Dibromomethane	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Bromodichloromethane	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
2-Chloroethyl Vinyl Ether	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
(cis) 1,3-Dichloropropene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Methyl Isobutyl Ketone	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
Toluene	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
(trans) 1,3-Dichloropropene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B2-5-6					
Laboratory ID:	05-243-04					
1,1,2-Trichloroethane	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Tetrachloroethene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
1,3-Dichloropropane	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
2-Hexanone	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
Dibromochloromethane	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromoethane	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Chlorobenzene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
1,1,1,2-Tetrachloroethane	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Ethylbenzene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
m,p-Xylene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
o-Xylene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Styrene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Bromoform	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
Isopropylbenzene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Bromobenzene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
1,1,2,2-Tetrachloroethane	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichloropropane	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
n-Propylbenzene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
2-Chlorotoluene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
4-Chlorotoluene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
1,3,5-Trimethylbenzene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
tert-Butylbenzene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trimethylbenzene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
sec-Butylbenzene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
p-Isopropyltoluene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
n-Butylbenzene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromo-3-chloropropane	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
Naphthalene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichlorobenzene	ND	0.00086	EPA 8260C	5-31-18	5-31-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	104	68-139				
Toluene-d8	110	79-128				
4-Bromofluorobenzene	105	71-132				



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Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:		FL252-B2-15-16				
Laboratory ID:		05-243-07				
Dichlorodifluoromethane	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
Chloromethane	ND	0.0040	EPA 8260C	5-31-18	5-31-18	
Vinyl Chloride	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
Bromomethane	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
Chloroethane	ND	0.0040	EPA 8260C	5-31-18	5-31-18	
Trichlorofluoromethane	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
Acetone	ND	0.0040	EPA 8260C	5-31-18	5-31-18	
Iodomethane	ND	0.0040	EPA 8260C	5-31-18	5-31-18	
Carbon Disulfide	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Methylene Chloride	ND	0.0040	EPA 8260C	5-31-18	5-31-18	
(trans) 1,2-Dichloroethene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
Methyl t-Butyl Ether	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethane	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
Vinyl Acetate	ND	0.0040	EPA 8260C	5-31-18	5-31-18	
2,2-Dichloropropane	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
(cis) 1,2-Dichloroethene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
2-Butanone	ND	0.0040	EPA 8260C	5-31-18	5-31-18	
Bromochloromethane	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
Chloroform	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
1,1,1-Trichloroethane	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
Carbon Tetrachloride	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloropropene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
Benzene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloroethane	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
Trichloroethene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloropropane	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
Dibromomethane	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
Bromodichloromethane	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
2-Chloroethyl Vinyl Ether	ND	0.0040	EPA 8260C	5-31-18	5-31-18	
(cis) 1,3-Dichloropropene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
Methyl Isobutyl Ketone	ND	0.0040	EPA 8260C	5-31-18	5-31-18	
Toluene	ND	0.0040	EPA 8260C	5-31-18	5-31-18	
(trans) 1,3-Dichloropropene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	



OnSite Environmental, Inc. 14648 NE 95th Street, Redmond, WA 98052 (425) 883-3881

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-243
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:		FL252-B2-15-16				
Laboratory ID:		05-243-07				
1,1,2-Trichloroethane	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
Tetrachloroethene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
1,3-Dichloropropane	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
2-Hexanone	ND	0.0040	EPA 8260C	5-31-18	5-31-18	
Dibromochloromethane	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromoethane	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
Chlorobenzene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
1,1,1,2-Tetrachloroethane	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
Ethylbenzene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
m,p-Xylene	ND	0.0016	EPA 8260C	5-31-18	5-31-18	
o-Xylene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
Styrene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
Bromoform	ND	0.0040	EPA 8260C	5-31-18	5-31-18	
Isopropylbenzene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
Bromobenzene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
1,1,2,2-Tetrachloroethane	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichloropropane	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
n-Propylbenzene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
2-Chlorotoluene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
4-Chlorotoluene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
1,3,5-Trimethylbenzene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
tert-Butylbenzene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trimethylbenzene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
sec-Butylbenzene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
p-Isopropyltoluene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
n-Butylbenzene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromo-3-chloropropane	ND	0.0040	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.0040	EPA 8260C	5-31-18	5-31-18	
Naphthalene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichlorobenzene	ND	0.00080	EPA 8260C	5-31-18	5-31-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
Dibromofluoromethane	88	68-139				
Toluene-d8	89	79-128				
4-Bromofluorobenzene	89	71-132				



Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-243
 Project: 4082-039-01

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Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-B2-20-20.8						
Laboratory ID: 05-243-08						
Dichlorodifluoromethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Chloromethane	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
Vinyl Chloride	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Bromomethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Chloroethane	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
Trichlorofluoromethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Acetone	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
Iodomethane	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
Carbon Disulfide	ND	0.0015	EPA 8260C	5-31-18	5-31-18	
Methylene Chloride	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
(trans) 1,2-Dichloroethene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Methyl t-Butyl Ether	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Vinyl Acetate	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
2,2-Dichloropropane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
(cis) 1,2-Dichloroethene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
2-Butanone	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
Bromochloromethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Chloroform	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1,1-Trichloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Carbon Tetrachloride	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloropropene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Benzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Trichloroethene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloropropane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Dibromomethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Bromodichloromethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
2-Chloroethyl Vinyl Ether	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
(cis) 1,3-Dichloropropene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Methyl Isobutyl Ketone	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
Toluene	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
(trans) 1,3-Dichloropropene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:		FL252-B2-20-20.8				
Laboratory ID:		05-243-08				
1,1,2-Trichloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Tetrachloroethene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,3-Dichloropropane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
2-Hexanone	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
Dibromochloromethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromoethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Chlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1,1,2-Tetrachloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Ethylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
m,p-Xylene	ND	0.0021	EPA 8260C	5-31-18	5-31-18	
o-Xylene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Styrene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Bromoform	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
Isopropylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Bromobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1,2,2-Tetrachloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichloropropane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
n-Propylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
2-Chlorotoluene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
4-Chlorotoluene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,3,5-Trimethylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
tert-Butylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trimethylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
sec-Butylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
p-Isopropyltoluene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
n-Butylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromo-3-chloropropane	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
Naphthalene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
Dibromofluoromethane	99	68-139				
Toluene-d8	105	79-128				
4-Bromofluorobenzene	101	71-132				



Date of Report: June 8, 2018
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 Laboratory Reference: 1805-243
 Project: 4082-039-01

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Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:		FL252-B2-25-26				
Laboratory ID:		05-243-09				
Dichlorodifluoromethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Chloromethane	ND	0.0046	EPA 8260C	5-31-18	5-31-18	
Vinyl Chloride	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Bromomethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Chloroethane	ND	0.0046	EPA 8260C	5-31-18	5-31-18	
Trichlorofluoromethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Acetone	ND	0.0046	EPA 8260C	5-31-18	5-31-18	
Iodomethane	ND	0.0046	EPA 8260C	5-31-18	5-31-18	
Carbon Disulfide	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Methylene Chloride	ND	0.0046	EPA 8260C	5-31-18	5-31-18	
(trans) 1,2-Dichloroethene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Methyl t-Butyl Ether	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Vinyl Acetate	ND	0.0046	EPA 8260C	5-31-18	5-31-18	
2,2-Dichloropropane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
(cis) 1,2-Dichloroethene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
2-Butanone	ND	0.0046	EPA 8260C	5-31-18	5-31-18	
Bromochloromethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Chloroform	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,1,1-Trichloroethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Carbon Tetrachloride	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloropropene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Benzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloroethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Trichloroethene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloropropane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Dibromomethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Bromodichloromethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
2-Chloroethyl Vinyl Ether	ND	0.0046	EPA 8260C	5-31-18	5-31-18	
(cis) 1,3-Dichloropropene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Methyl Isobutyl Ketone	ND	0.0046	EPA 8260C	5-31-18	5-31-18	
Toluene	ND	0.0046	EPA 8260C	5-31-18	5-31-18	
(trans) 1,3-Dichloropropene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	



Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
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 Project: 4082-039-01

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B2-25-26					
Laboratory ID:	05-243-09					
1,1,2-Trichloroethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Tetrachloroethene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,3-Dichloropropane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
2-Hexanone	ND	0.0046	EPA 8260C	5-31-18	5-31-18	
Dibromochloromethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromoethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Chlorobenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,1,1,2-Tetrachloroethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Ethylbenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
m,p-Xylene	ND	0.0019	EPA 8260C	5-31-18	5-31-18	
o-Xylene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Styrene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Bromoform	ND	0.0046	EPA 8260C	5-31-18	5-31-18	
Isopropylbenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Bromobenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,1,2,2-Tetrachloroethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichloropropane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
n-Propylbenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
2-Chlorotoluene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
4-Chlorotoluene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,3,5-Trimethylbenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
tert-Butylbenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trimethylbenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
sec-Butylbenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
p-Isopropyltoluene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
n-Butylbenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromo-3-chloropropane	ND	0.0046	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.0046	EPA 8260C	5-31-18	5-31-18	
Naphthalene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichlorobenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	99	68-139				
Toluene-d8	104	79-128				
4-Bromofluorobenzene	102	71-132				



Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-243
 Project: 4082-039-01

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Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:		FL252-B2-30-31				
Laboratory ID:		05-243-10				
Dichlorodifluoromethane	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
Chloromethane	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
Vinyl Chloride	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
Bromomethane	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
Chloroethane	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
Trichlorofluoromethane	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
Acetone	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
Iodomethane	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
Carbon Disulfide	ND	0.0012	EPA 8260C	5-31-18	5-31-18	
Methylene Chloride	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
(trans) 1,2-Dichloroethene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
Methyl t-Butyl Ether	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethane	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
Vinyl Acetate	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
2,2-Dichloropropane	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
(cis) 1,2-Dichloroethene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
2-Butanone	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
Bromochloromethane	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
Chloroform	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
1,1,1-Trichloroethane	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
Carbon Tetrachloride	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloropropene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
Benzene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloroethane	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
Trichloroethene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloropropane	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
Dibromomethane	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
Bromodichloromethane	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
2-Chloroethyl Vinyl Ether	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
(cis) 1,3-Dichloropropene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
Methyl Isobutyl Ketone	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
Toluene	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
(trans) 1,3-Dichloropropene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	



Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-243
 Project: 4082-039-01

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:		FL252-B2-30-31				
Laboratory ID:		05-243-10				
1,1,2-Trichloroethane	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
Tetrachloroethene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
1,3-Dichloropropane	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
2-Hexanone	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
Dibromochloromethane	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromoethane	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
Chlorobenzene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
1,1,1,2-Tetrachloroethane	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
Ethylbenzene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
m,p-Xylene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
o-Xylene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
Styrene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
Bromoform	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
Isopropylbenzene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
Bromobenzene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
1,1,2,2-Tetrachloroethane	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichloropropane	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
n-Propylbenzene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
2-Chlorotoluene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
4-Chlorotoluene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
1,3,5-Trimethylbenzene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
tert-Butylbenzene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trimethylbenzene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
sec-Butylbenzene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
p-Isopropyltoluene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
n-Butylbenzene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromo-3-chloropropane	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.0043	EPA 8260C	5-31-18	5-31-18	
Naphthalene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichlorobenzene	ND	0.00087	EPA 8260C	5-31-18	5-31-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
Dibromofluoromethane	94	68-139				
Toluene-d8	99	79-128				
4-Bromofluorobenzene	97	71-132				



Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-243
 Project: 4082-039-01

VOLATILES EPA 8260C
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Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:		FL252-B1-0-1.5				
Laboratory ID:		05-243-12				
Dichlorodifluoromethane	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Chloromethane	ND	0.0065	EPA 8260C	5-31-18	5-31-18	
Vinyl Chloride	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Bromomethane	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Chloroethane	ND	0.0065	EPA 8260C	5-31-18	5-31-18	
Trichlorofluoromethane	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Acetone	0.023	0.0065	EPA 8260C	5-31-18	5-31-18	
Iodomethane	ND	0.0065	EPA 8260C	5-31-18	5-31-18	
Carbon Disulfide	ND	0.0018	EPA 8260C	5-31-18	5-31-18	
Methylene Chloride	ND	0.0065	EPA 8260C	5-31-18	5-31-18	
(trans) 1,2-Dichloroethene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Methyl t-Butyl Ether	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethane	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Vinyl Acetate	ND	0.0065	EPA 8260C	5-31-18	5-31-18	
2,2-Dichloropropane	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
(cis) 1,2-Dichloroethene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
2-Butanone	ND	0.0065	EPA 8260C	5-31-18	5-31-18	
Bromochloromethane	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Chloroform	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
1,1,1-Trichloroethane	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Carbon Tetrachloride	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloropropene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Benzene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloroethane	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Trichloroethene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloropropane	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Dibromomethane	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Bromodichloromethane	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
2-Chloroethyl Vinyl Ether	ND	0.0065	EPA 8260C	5-31-18	5-31-18	
(cis) 1,3-Dichloropropene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Methyl Isobutyl Ketone	ND	0.0065	EPA 8260C	5-31-18	5-31-18	
Toluene	ND	0.0065	EPA 8260C	5-31-18	5-31-18	
(trans) 1,3-Dichloropropene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	



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Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-243
 Project: 4082-039-01

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B1-0-1.5					
Laboratory ID:	05-243-12					
1,1,2-Trichloroethane	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Tetrachloroethene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
1,3-Dichloropropane	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
2-Hexanone	ND	0.0065	EPA 8260C	5-31-18	5-31-18	
Dibromochloromethane	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromoethane	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Chlorobenzene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
1,1,1,2-Tetrachloroethane	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Ethylbenzene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
m,p-Xylene	ND	0.0026	EPA 8260C	5-31-18	5-31-18	
o-Xylene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Styrene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Bromoform	ND	0.0065	EPA 8260C	5-31-18	5-31-18	
Isopropylbenzene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Bromobenzene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
1,1,2,2-Tetrachloroethane	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichloropropane	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
n-Propylbenzene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
2-Chlorotoluene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
4-Chlorotoluene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
1,3,5-Trimethylbenzene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
tert-Butylbenzene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trimethylbenzene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
sec-Butylbenzene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
p-Isopropyltoluene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
n-Butylbenzene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromo-3-chloropropane	ND	0.0065	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.0065	EPA 8260C	5-31-18	5-31-18	
Naphthalene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichlorobenzene	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	88	68-139				
Toluene-d8	92	79-128				
4-Bromofluorobenzene	89	71-132				



Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-243
 Project: 4082-039-01

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Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-B1-2.5-3.5						
Laboratory ID: 05-243-13						
Dichlorodifluoromethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Chloromethane	ND	0.0047	EPA 8260C	5-31-18	5-31-18	
Vinyl Chloride	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Bromomethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Chloroethane	ND	0.0047	EPA 8260C	5-31-18	5-31-18	
Trichlorofluoromethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Acetone	0.018	0.0047	EPA 8260C	5-31-18	5-31-18	
Iodomethane	ND	0.0047	EPA 8260C	5-31-18	5-31-18	
Carbon Disulfide	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Methylene Chloride	ND	0.0047	EPA 8260C	5-31-18	5-31-18	
(trans) 1,2-Dichloroethene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Methyl t-Butyl Ether	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Vinyl Acetate	ND	0.0047	EPA 8260C	5-31-18	5-31-18	
2,2-Dichloropropane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
(cis) 1,2-Dichloroethene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
2-Butanone	ND	0.0047	EPA 8260C	5-31-18	5-31-18	
Bromochloromethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Chloroform	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,1,1-Trichloroethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Carbon Tetrachloride	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloropropene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Benzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloroethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Trichloroethene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloropropane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Dibromomethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Bromodichloromethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
2-Chloroethyl Vinyl Ether	ND	0.0047	EPA 8260C	5-31-18	5-31-18	
(cis) 1,3-Dichloropropene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Methyl Isobutyl Ketone	ND	0.0047	EPA 8260C	5-31-18	5-31-18	
Toluene	ND	0.0047	EPA 8260C	5-31-18	5-31-18	
(trans) 1,3-Dichloropropene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	



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Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-243
 Project: 4082-039-01

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:		FL252-B1-2.5-3.5				
Laboratory ID:		05-243-13				
1,1,2-Trichloroethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Tetrachloroethene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,3-Dichloropropane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
2-Hexanone	ND	0.0047	EPA 8260C	5-31-18	5-31-18	
Dibromochloromethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromoethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Chlorobenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,1,1,2-Tetrachloroethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Ethylbenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
m,p-Xylene	ND	0.0019	EPA 8260C	5-31-18	5-31-18	
o-Xylene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Styrene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Bromoform	ND	0.0047	EPA 8260C	5-31-18	5-31-18	
Isopropylbenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Bromobenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,1,2,2-Tetrachloroethane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichloropropane	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
n-Propylbenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
2-Chlorotoluene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
4-Chlorotoluene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,3,5-Trimethylbenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
tert-Butylbenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trimethylbenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
sec-Butylbenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
p-Isopropyltoluene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
n-Butylbenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromo-3-chloropropane	ND	0.0047	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.0047	EPA 8260C	5-31-18	5-31-18	
Naphthalene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichlorobenzene	ND	0.00093	EPA 8260C	5-31-18	5-31-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
Dibromofluoromethane	98	68-139				
Toluene-d8	101	79-128				
4-Bromofluorobenzene	99	71-132				



Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-243
 Project: 4082-039-01

SEMIVOLATILES EPA 8270D/SIM
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Matrix: Soil
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B2-1-2					
Laboratory ID:	05-243-02					
n-Nitrosodimethylamine	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Pyridine	ND	0.37	EPA 8270D	5-31-18	6-1-18	
Phenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Aniline	ND	0.19	EPA 8270D	5-31-18	6-1-18	
bis(2-Chloroethyl)ether	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2-Chlorophenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
1,3-Dichlorobenzene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
1,4-Dichlorobenzene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Benzyl alcohol	ND	0.19	EPA 8270D	5-31-18	6-1-18	
1,2-Dichlorobenzene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2-Methylphenol (o-Cresol)	ND	0.037	EPA 8270D	5-31-18	6-1-18	
bis(2-Chloroisopropyl)ether	ND	0.037	EPA 8270D	5-31-18	6-1-18	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.037	EPA 8270D	5-31-18	6-1-18	
n-Nitroso-di-n-propylamine	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Hexachloroethane	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Nitrobenzene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Isophorone	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2-Nitrophenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2,4-Dimethylphenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
bis(2-Chloroethoxy)methane	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2,4-Dichlorophenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
1,2,4-Trichlorobenzene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Naphthalene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
4-Chloroaniline	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Hexachlorobutadiene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
4-Chloro-3-methylphenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2-Methylnaphthalene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
1-Methylnaphthalene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Hexachlorocyclopentadiene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2,4,6-Trichlorophenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2,3-Dichloroaniline	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2,4,5-Trichlorophenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2-Chloronaphthalene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2-Nitroaniline	ND	0.037	EPA 8270D	5-31-18	6-1-18	
1,4-Dinitrobenzene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Dimethylphthalate	ND	0.037	EPA 8270D	5-31-18	6-1-18	
1,3-Dinitrobenzene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2,6-Dinitrotoluene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
1,2-Dinitrobenzene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Acenaphthylene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
3-Nitroaniline	ND	0.037	EPA 8270D	5-31-18	6-1-18	



Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-243
 Project: 4082-039-01

SEMIVOLATILES EPA 8270D/SIM
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B2-1-2					
Laboratory ID:	05-243-02					
2,4-Dinitrophenol	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Acenaphthene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
4-Nitrophenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2,4-Dinitrotoluene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Dibenzofuran	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2,3,5,6-Tetrachlorophenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2,3,4,6-Tetrachlorophenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Diethylphthalate	ND	0.19	EPA 8270D	5-31-18	6-1-18	
4-Chlorophenyl-phenylether	ND	0.037	EPA 8270D	5-31-18	6-1-18	
4-Nitroaniline	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Fluorene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
4,6-Dinitro-2-methylphenol	ND	0.19	EPA 8270D	5-31-18	6-1-18	
n-Nitrosodiphenylamine	ND	0.037	EPA 8270D	5-31-18	6-1-18	
1,2-Diphenylhydrazine	ND	0.037	EPA 8270D	5-31-18	6-1-18	
4-Bromophenyl-phenylether	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Hexachlorobenzene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Pentachlorophenol	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Phenanthrene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Anthracene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Carbazole	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Di-n-butylphthalate	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Fluoranthene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Benzidine	ND	0.37	EPA 8270D	5-31-18	6-1-18	
Pyrene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Butylbenzylphthalate	ND	0.19	EPA 8270D	5-31-18	6-1-18	
bis-2-Ethylhexyladipate	ND	0.19	EPA 8270D	5-31-18	6-1-18	
3,3'-Dichlorobenzidine	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Benzo[a]anthracene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Chrysene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
bis(2-Ethylhexyl)phthalate	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Di-n-octylphthalate	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Benzo[b]fluoranthene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo(j,k)fluoranthene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[a]pyrene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Indeno[1,2,3-cd]pyrene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Dibenz[a,h]anthracene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[g,h,i]perylene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	32	19 - 103				
Phenol-d6	36	30 - 103				
Nitrobenzene-d5	40	27 - 105				
2-Fluorobiphenyl	52	36 - 102				
2,4,6-Tribromophenol	61	33 - 110				
Terphenyl-d14	52	38 - 108				



Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-243
 Project: 4082-039-01

SEMIVOLATILES EPA 8270D/SIM
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Matrix: Soil
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B2-5-6					
Laboratory ID:	05-243-04					
n-Nitrosodimethylamine	ND	0.035	EPA 8270D	5-31-18	6-1-18	
Pyridine	ND	0.35	EPA 8270D	5-31-18	6-1-18	
Phenol	ND	0.035	EPA 8270D	5-31-18	6-1-18	
Aniline	ND	0.18	EPA 8270D	5-31-18	6-1-18	
bis(2-Chloroethyl)ether	ND	0.035	EPA 8270D	5-31-18	6-1-18	
2-Chlorophenol	ND	0.035	EPA 8270D	5-31-18	6-1-18	
1,3-Dichlorobenzene	ND	0.035	EPA 8270D	5-31-18	6-1-18	
1,4-Dichlorobenzene	ND	0.035	EPA 8270D	5-31-18	6-1-18	
Benzyl alcohol	ND	0.18	EPA 8270D	5-31-18	6-1-18	
1,2-Dichlorobenzene	ND	0.035	EPA 8270D	5-31-18	6-1-18	
2-Methylphenol (o-Cresol)	ND	0.035	EPA 8270D	5-31-18	6-1-18	
bis(2-Chloroisopropyl)ether	ND	0.035	EPA 8270D	5-31-18	6-1-18	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.035	EPA 8270D	5-31-18	6-1-18	
n-Nitroso-di-n-propylamine	ND	0.035	EPA 8270D	5-31-18	6-1-18	
Hexachloroethane	ND	0.035	EPA 8270D	5-31-18	6-1-18	
Nitrobenzene	ND	0.035	EPA 8270D	5-31-18	6-1-18	
Isophorone	ND	0.035	EPA 8270D	5-31-18	6-1-18	
2-Nitrophenol	ND	0.035	EPA 8270D	5-31-18	6-1-18	
2,4-Dimethylphenol	ND	0.035	EPA 8270D	5-31-18	6-1-18	
bis(2-Chloroethoxy)methane	ND	0.035	EPA 8270D	5-31-18	6-1-18	
2,4-Dichlorophenol	ND	0.035	EPA 8270D	5-31-18	6-1-18	
1,2,4-Trichlorobenzene	ND	0.035	EPA 8270D	5-31-18	6-1-18	
Naphthalene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
4-Chloroaniline	ND	0.18	EPA 8270D	5-31-18	6-1-18	
Hexachlorobutadiene	ND	0.035	EPA 8270D	5-31-18	6-1-18	
4-Chloro-3-methylphenol	ND	0.035	EPA 8270D	5-31-18	6-1-18	
2-Methylnaphthalene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
1-Methylnaphthalene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
Hexachlorocyclopentadiene	ND	0.035	EPA 8270D	5-31-18	6-1-18	
2,4,6-Trichlorophenol	ND	0.035	EPA 8270D	5-31-18	6-1-18	
2,3-Dichloroaniline	ND	0.035	EPA 8270D	5-31-18	6-1-18	
2,4,5-Trichlorophenol	ND	0.035	EPA 8270D	5-31-18	6-1-18	
2-Chloronaphthalene	ND	0.035	EPA 8270D	5-31-18	6-1-18	
2-Nitroaniline	ND	0.035	EPA 8270D	5-31-18	6-1-18	
1,4-Dinitrobenzene	ND	0.035	EPA 8270D	5-31-18	6-1-18	
Dimethylphthalate	ND	0.035	EPA 8270D	5-31-18	6-1-18	
1,3-Dinitrobenzene	ND	0.035	EPA 8270D	5-31-18	6-1-18	
2,6-Dinitrotoluene	ND	0.035	EPA 8270D	5-31-18	6-1-18	
1,2-Dinitrobenzene	ND	0.035	EPA 8270D	5-31-18	6-1-18	
Acenaphthylene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
3-Nitroaniline	ND	0.035	EPA 8270D	5-31-18	6-1-18	



Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-243
 Project: 4082-039-01

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B2-5-6					
Laboratory ID:	05-243-04					
2,4-Dinitrophenol	ND	0.18	EPA 8270D	5-31-18	6-1-18	
Acenaphthene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
4-Nitrophenol	ND	0.035	EPA 8270D	5-31-18	6-1-18	
2,4-Dinitrotoluene	ND	0.035	EPA 8270D	5-31-18	6-1-18	
Dibenzofuran	ND	0.035	EPA 8270D	5-31-18	6-1-18	
2,3,5,6-Tetrachlorophenol	ND	0.035	EPA 8270D	5-31-18	6-1-18	
2,3,4,6-Tetrachlorophenol	ND	0.035	EPA 8270D	5-31-18	6-1-18	
Diethylphthalate	ND	0.18	EPA 8270D	5-31-18	6-1-18	
4-Chlorophenyl-phenylether	ND	0.035	EPA 8270D	5-31-18	6-1-18	
4-Nitroaniline	ND	0.035	EPA 8270D	5-31-18	6-1-18	
Fluorene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
4,6-Dinitro-2-methylphenol	ND	0.18	EPA 8270D	5-31-18	6-1-18	
n-Nitrosodiphenylamine	ND	0.035	EPA 8270D	5-31-18	6-1-18	
1,2-Diphenylhydrazine	ND	0.035	EPA 8270D	5-31-18	6-1-18	
4-Bromophenyl-phenylether	ND	0.035	EPA 8270D	5-31-18	6-1-18	
Hexachlorobenzene	ND	0.035	EPA 8270D	5-31-18	6-1-18	
Pentachlorophenol	ND	0.18	EPA 8270D	5-31-18	6-1-18	
Phenanthrene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
Anthracene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
Carbazole	ND	0.035	EPA 8270D	5-31-18	6-1-18	
Di-n-butylphthalate	ND	0.18	EPA 8270D	5-31-18	6-1-18	
Fluoranthene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
Benzidine	ND	0.35	EPA 8270D	5-31-18	6-1-18	
Pyrene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
Butylbenzylphthalate	ND	0.18	EPA 8270D	5-31-18	6-1-18	
bis-2-Ethylhexyladipate	ND	0.18	EPA 8270D	5-31-18	6-1-18	
3,3'-Dichlorobenzidine	ND	0.18	EPA 8270D	5-31-18	6-1-18	
Benzo[a]anthracene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
Chrysene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
bis(2-Ethylhexyl)phthalate	ND	0.18	EPA 8270D	5-31-18	6-1-18	
Di-n-octylphthalate	ND	0.18	EPA 8270D	5-31-18	6-1-18	
Benzo[b]fluoranthene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo(j,k)fluoranthene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[a]pyrene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
Indeno[1,2,3-cd]pyrene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
Dibenz[a,h]anthracene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[g,h,i]perylene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
2-Fluorophenol	59	19 - 103				
Phenol-d6	59	30 - 103				
Nitrobenzene-d5	60	27 - 105				
2-Fluorobiphenyl	63	36 - 102				
2,4,6-Tribromophenol	82	33 - 110				
Terphenyl-d14	70	38 - 108				



Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-243
 Project: 4082-039-01

SEMIVOLATILES EPA 8270D/SIM
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Matrix: Soil
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B2-15-16					
Laboratory ID:	05-243-07					
n-Nitrosodimethylamine	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Pyridine	ND	0.37	EPA 8270D	5-31-18	6-1-18	
Phenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Aniline	ND	0.19	EPA 8270D	5-31-18	6-1-18	
bis(2-Chloroethyl)ether	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2-Chlorophenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
1,3-Dichlorobenzene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
1,4-Dichlorobenzene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Benzyl alcohol	ND	0.19	EPA 8270D	5-31-18	6-1-18	
1,2-Dichlorobenzene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2-Methylphenol (o-Cresol)	ND	0.037	EPA 8270D	5-31-18	6-1-18	
bis(2-Chloroisopropyl)ether	ND	0.037	EPA 8270D	5-31-18	6-1-18	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.037	EPA 8270D	5-31-18	6-1-18	
n-Nitroso-di-n-propylamine	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Hexachloroethane	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Nitrobenzene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Isophorone	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2-Nitrophenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2,4-Dimethylphenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
bis(2-Chloroethoxy)methane	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2,4-Dichlorophenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
1,2,4-Trichlorobenzene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Naphthalene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
4-Chloroaniline	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Hexachlorobutadiene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
4-Chloro-3-methylphenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2-Methylnaphthalene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
1-Methylnaphthalene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Hexachlorocyclopentadiene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2,4,6-Trichlorophenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2,3-Dichloroaniline	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2,4,5-Trichlorophenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2-Chloronaphthalene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2-Nitroaniline	ND	0.037	EPA 8270D	5-31-18	6-1-18	
1,4-Dinitrobenzene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Dimethylphthalate	ND	0.037	EPA 8270D	5-31-18	6-1-18	
1,3-Dinitrobenzene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2,6-Dinitrotoluene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
1,2-Dinitrobenzene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Acenaphthylene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
3-Nitroaniline	ND	0.037	EPA 8270D	5-31-18	6-1-18	



Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-243
 Project: 4082-039-01

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-B2-15-16						
Laboratory ID: 05-243-07						
2,4-Dinitrophenol	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Acenaphthene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
4-Nitrophenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2,4-Dinitrotoluene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Dibenzofuran	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2,3,5,6-Tetrachlorophenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
2,3,4,6-Tetrachlorophenol	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Diethylphthalate	ND	0.19	EPA 8270D	5-31-18	6-1-18	
4-Chlorophenyl-phenylether	ND	0.037	EPA 8270D	5-31-18	6-1-18	
4-Nitroaniline	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Fluorene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
4,6-Dinitro-2-methylphenol	ND	0.19	EPA 8270D	5-31-18	6-1-18	
n-Nitrosodiphenylamine	ND	0.037	EPA 8270D	5-31-18	6-1-18	
1,2-Diphenylhydrazine	ND	0.037	EPA 8270D	5-31-18	6-1-18	
4-Bromophenyl-phenylether	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Hexachlorobenzene	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Pentachlorophenol	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Phenanthrene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Anthracene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Carbazole	ND	0.037	EPA 8270D	5-31-18	6-1-18	
Di-n-butylphthalate	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Fluoranthene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Benzidine	ND	0.37	EPA 8270D	5-31-18	6-1-18	
Pyrene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Butylbenzylphthalate	ND	0.19	EPA 8270D	5-31-18	6-1-18	
bis-2-Ethylhexyladipate	ND	0.19	EPA 8270D	5-31-18	6-1-18	
3,3'-Dichlorobenzidine	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Benzo[a]anthracene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Chrysene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
bis(2-Ethylhexyl)phthalate	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Di-n-octylphthalate	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Benzo[b]fluoranthene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo(j,k)fluoranthene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[a]pyrene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Indeno[1,2,3-cd]pyrene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Dibenz[a,h]anthracene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[g,h,i]perylene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
2-Fluorophenol	46	19 - 103				
Phenol-d6	46	30 - 103				
Nitrobenzene-d5	45	27 - 105				
2-Fluorobiphenyl	48	36 - 102				
2,4,6-Tribromophenol	73	33 - 110				
Terphenyl-d14	59	38 - 108				



Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-243
 Project: 4082-039-01

SEMIVOLATILES EPA 8270D/SIM
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Matrix: Soil
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B1-0-1.5					
Laboratory ID:	05-243-12					
n-Nitrosodimethylamine	ND	0.036	EPA 8270D	5-31-18	5-31-18	
Pyridine	ND	0.36	EPA 8270D	5-31-18	5-31-18	
Phenol	ND	0.036	EPA 8270D	5-31-18	5-31-18	
Aniline	ND	0.18	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroethyl)ether	ND	0.036	EPA 8270D	5-31-18	5-31-18	
2-Chlorophenol	ND	0.036	EPA 8270D	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.036	EPA 8270D	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.036	EPA 8270D	5-31-18	5-31-18	
Benzyl alcohol	ND	0.18	EPA 8270D	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.036	EPA 8270D	5-31-18	5-31-18	
2-Methylphenol (o-Cresol)	ND	0.036	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroisopropyl)ether	ND	0.036	EPA 8270D	5-31-18	5-31-18	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.036	EPA 8270D	5-31-18	5-31-18	
n-Nitroso-di-n-propylamine	ND	0.036	EPA 8270D	5-31-18	5-31-18	
Hexachloroethane	ND	0.036	EPA 8270D	5-31-18	5-31-18	
Nitrobenzene	ND	0.036	EPA 8270D	5-31-18	5-31-18	
Isophorone	ND	0.036	EPA 8270D	5-31-18	5-31-18	
2-Nitrophenol	ND	0.036	EPA 8270D	5-31-18	5-31-18	
2,4-Dimethylphenol	ND	0.036	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroethoxy)methane	ND	0.036	EPA 8270D	5-31-18	5-31-18	
2,4-Dichlorophenol	ND	0.036	EPA 8270D	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.036	EPA 8270D	5-31-18	5-31-18	
Naphthalene	0.062	0.036	EPA 8270D	5-31-18	5-31-18	
4-Chloroaniline	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.036	EPA 8270D	5-31-18	5-31-18	
4-Chloro-3-methylphenol	ND	0.036	EPA 8270D	5-31-18	5-31-18	
2-Methylnaphthalene	0.024	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
1-Methylnaphthalene	0.019	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Hexachlorocyclopentadiene	ND	0.036	EPA 8270D	5-31-18	5-31-18	
2,4,6-Trichlorophenol	ND	0.036	EPA 8270D	5-31-18	5-31-18	
2,3-Dichloroaniline	ND	0.036	EPA 8270D	5-31-18	5-31-18	
2,4,5-Trichlorophenol	ND	0.036	EPA 8270D	5-31-18	5-31-18	
2-Chloronaphthalene	ND	0.036	EPA 8270D	5-31-18	5-31-18	
2-Nitroaniline	ND	0.036	EPA 8270D	5-31-18	5-31-18	
1,4-Dinitrobenzene	ND	0.036	EPA 8270D	5-31-18	5-31-18	
Dimethylphthalate	ND	0.036	EPA 8270D	5-31-18	5-31-18	
1,3-Dinitrobenzene	ND	0.036	EPA 8270D	5-31-18	5-31-18	
2,6-Dinitrotoluene	ND	0.036	EPA 8270D	5-31-18	5-31-18	
1,2-Dinitrobenzene	ND	0.036	EPA 8270D	5-31-18	5-31-18	
Acenaphthylene	0.014	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
3-Nitroaniline	ND	0.036	EPA 8270D	5-31-18	5-31-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B1-0-1.5					
Laboratory ID:	05-243-12					
2,4-Dinitrophenol	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Acenaphthene	0.060	0.036	EPA 8270D	5-31-18	5-31-18	
4-Nitrophenol	ND	0.036	EPA 8270D	5-31-18	5-31-18	
2,4-Dinitrotoluene	ND	0.036	EPA 8270D	5-31-18	5-31-18	
Dibenzofuran	0.056	0.036	EPA 8270D	5-31-18	5-31-18	
2,3,5,6-Tetrachlorophenol	ND	0.036	EPA 8270D	5-31-18	5-31-18	
2,3,4,6-Tetrachlorophenol	ND	0.036	EPA 8270D	5-31-18	5-31-18	
Diethylphthalate	ND	0.18	EPA 8270D	5-31-18	5-31-18	
4-Chlorophenyl-phenylether	ND	0.036	EPA 8270D	5-31-18	5-31-18	
4-Nitroaniline	ND	0.036	EPA 8270D	5-31-18	5-31-18	
Fluorene	0.045	0.036	EPA 8270D	5-31-18	5-31-18	
4,6-Dinitro-2-methylphenol	ND	0.18	EPA 8270D	5-31-18	5-31-18	
n-Nitrosodiphenylamine	ND	0.036	EPA 8270D	5-31-18	5-31-18	
1,2-Diphenylhydrazine	ND	0.036	EPA 8270D	5-31-18	5-31-18	
4-Bromophenyl-phenylether	ND	0.036	EPA 8270D	5-31-18	5-31-18	
Hexachlorobenzene	ND	0.036	EPA 8270D	5-31-18	5-31-18	
Pentachlorophenol	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Phenanthrene	0.82	0.036	EPA 8270D	5-31-18	5-31-18	
Anthracene	0.19	0.036	EPA 8270D	5-31-18	5-31-18	
Carbazole	0.13	0.036	EPA 8270D	5-31-18	5-31-18	
Di-n-butylphthalate	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Fluoranthene	1.2	0.036	EPA 8270D	5-31-18	5-31-18	
Benzidine	ND	0.36	EPA 8270D	5-31-18	5-31-18	
Pyrene	1.0	0.036	EPA 8270D	5-31-18	5-31-18	
Butylbenzylphthalate	ND	0.18	EPA 8270D	5-31-18	5-31-18	
bis-2-Ethylhexyladipate	ND	0.18	EPA 8270D	5-31-18	5-31-18	
3,3'-Dichlorobenzidine	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Benzo[a]anthracene	0.67	0.036	EPA 8270D	5-31-18	5-31-18	
Chrysene	0.68	0.036	EPA 8270D	5-31-18	5-31-18	
bis(2-Ethylhexyl)phthalate	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Di-n-octylphthalate	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Benzo[b]fluoranthene	0.83	0.036	EPA 8270D	5-31-18	5-31-18	
Benzo[j,k]fluoranthene	0.26	0.036	EPA 8270D	5-31-18	5-31-18	
Benzo[a]pyrene	0.55	0.036	EPA 8270D	5-31-18	5-31-18	
Indeno[1,2,3-cd]pyrene	0.40	0.036	EPA 8270D	5-31-18	5-31-18	
Dibenz[a,h]anthracene	0.10	0.036	EPA 8270D	5-31-18	5-31-18	
Benzo[g,h,i]perylene	0.39	0.036	EPA 8270D	5-31-18	5-31-18	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	55	19 - 103				
Phenol-d6	61	30 - 103				
Nitrobenzene-d5	56	27 - 105				
2-Fluorobiphenyl	70	36 - 102				
2,4,6-Tribromophenol	82	33 - 110				
Terphenyl-d14	70	38 - 108				



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Matrix: Soil
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B1-2.5-3.5					
Laboratory ID:	05-243-13					
n-Nitrosodimethylamine	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Pyridine	ND	0.37	EPA 8270D	5-31-18	5-31-18	
Phenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Aniline	ND	0.19	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroethyl)ether	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2-Chlorophenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Benzyl alcohol	ND	0.19	EPA 8270D	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2-Methylphenol (o-Cresol)	ND	0.037	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroisopropyl)ether	ND	0.037	EPA 8270D	5-31-18	5-31-18	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.037	EPA 8270D	5-31-18	5-31-18	
n-Nitroso-di-n-propylamine	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Hexachloroethane	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Nitrobenzene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Isophorone	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2-Nitrophenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2,4-Dimethylphenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroethoxy)methane	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2,4-Dichlorophenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Naphthalene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
4-Chloroaniline	ND	0.19	EPA 8270D	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
4-Chloro-3-methylphenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2-Methylnaphthalene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
1-Methylnaphthalene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Hexachlorocyclopentadiene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2,4,6-Trichlorophenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2,3-Dichloroaniline	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2,4,5-Trichlorophenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2-Chloronaphthalene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2-Nitroaniline	ND	0.037	EPA 8270D	5-31-18	5-31-18	
1,4-Dinitrobenzene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Dimethylphthalate	ND	0.037	EPA 8270D	5-31-18	5-31-18	
1,3-Dinitrobenzene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2,6-Dinitrotoluene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
1,2-Dinitrobenzene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Acenaphthylene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
3-Nitroaniline	ND	0.037	EPA 8270D	5-31-18	5-31-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B1-2.5-3.5					
Laboratory ID:	05-243-13					
2,4-Dinitrophenol	ND	0.19	EPA 8270D	5-31-18	5-31-18	
Acenaphthene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
4-Nitrophenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2,4-Dinitrotoluene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Dibenzofuran	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2,3,5,6-Tetrachlorophenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2,3,4,6-Tetrachlorophenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Diethylphthalate	ND	0.19	EPA 8270D	5-31-18	5-31-18	
4-Chlorophenyl-phenylether	ND	0.037	EPA 8270D	5-31-18	5-31-18	
4-Nitroaniline	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Fluorene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
4,6-Dinitro-2-methylphenol	ND	0.19	EPA 8270D	5-31-18	5-31-18	
n-Nitrosodiphenylamine	ND	0.037	EPA 8270D	5-31-18	5-31-18	
1,2-Diphenylhydrazine	ND	0.037	EPA 8270D	5-31-18	5-31-18	
4-Bromophenyl-phenylether	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Hexachlorobenzene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Pentachlorophenol	ND	0.19	EPA 8270D	5-31-18	5-31-18	
Phenanthrene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Anthracene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Carbazole	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Di-n-butylphthalate	ND	0.19	EPA 8270D	5-31-18	5-31-18	
Fluoranthene	0.010	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Benzidine	ND	0.37	EPA 8270D	5-31-18	5-31-18	
Pyrene	0.0081	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Butylbenzylphthalate	ND	0.19	EPA 8270D	5-31-18	5-31-18	
bis-2-Ethylhexyladipate	ND	0.19	EPA 8270D	5-31-18	5-31-18	
3,3'-Dichlorobenzidine	ND	0.19	EPA 8270D	5-31-18	5-31-18	
Benzo[a]anthracene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Chrysene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
bis(2-Ethylhexyl)phthalate	ND	0.19	EPA 8270D	5-31-18	5-31-18	
Di-n-octylphthalate	ND	0.19	EPA 8270D	5-31-18	5-31-18	
Benzo[b]fluoranthene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo(j,k)fluoranthene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[a]pyrene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Indeno[1,2,3-cd]pyrene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Dibenz[a,h]anthracene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[g,h,i]perylene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	58	19 - 103				
Phenol-d6	57	30 - 103				
Nitrobenzene-d5	57	27 - 105				
2-Fluorobiphenyl	65	36 - 102				
2,4,6-Tribromophenol	90	33 - 110				
Terphenyl-d14	76	38 - 108				



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TOTAL METALS
EPA 6010D/6020B/7471B

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	05-243-02					
Client ID:	FL252-B2-1-2					
Antimony	ND	5.6	6010D	6-1-18	6-1-18	
Arsenic	6.6	5.6	6010D	6-4-18	6-4-18	
Beryllium	ND	0.56	6010D	6-1-18	6-1-18	
Cadmium	ND	0.56	6010D	6-4-18	6-4-18	
Chromium	29	0.56	6010D	6-4-18	6-4-18	
Copper	22	1.1	6010D	6-4-18	6-4-18	
Lead	ND	5.6	6010D	6-4-18	6-4-18	
Mercury	ND	0.28	7471B	6-4-18	6-4-18	
Nickel	35	2.8	6010D	6-4-18	6-4-18	
Selenium	ND	11	6010D	6-4-18	6-4-18	
Silver	ND	1.1	6010D	6-4-18	6-4-18	
Thallium	ND	2.8	6020B	6-1-18	6-4-18	
Zinc	39	2.8	6010D	6-4-18	6-4-18	



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TOTAL METALS
EPA 6010D/6020B/7471B

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	05-243-04					
Client ID:	FL252-B2-5-6					
Antimony	ND	5.3	6010D	6-1-18	6-1-18	
Arsenic	ND	5.3	6010D	6-4-18	6-4-18	
Beryllium	ND	0.53	6010D	6-1-18	6-1-18	
Cadmium	ND	0.53	6010D	6-4-18	6-4-18	
Chromium	42	0.53	6010D	6-4-18	6-4-18	
Copper	15	1.1	6010D	6-4-18	6-4-18	
Lead	ND	5.3	6010D	6-4-18	6-4-18	
Mercury	ND	0.26	7471B	6-4-18	6-4-18	
Nickel	28	2.6	6010D	6-4-18	6-4-18	
Selenium	ND	11	6010D	6-4-18	6-4-18	
Silver	ND	1.1	6010D	6-4-18	6-4-18	
Thallium	ND	2.6	6020B	6-1-18	6-4-18	
Zinc	27	2.6	6010D	6-4-18	6-4-18	



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TOTAL METALS
EPA 6010D/6020B/7471B

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	05-243-07					
Client ID:	FL252-B2-15-16					
Antimony	ND	5.6	6010D	6-1-18	6-1-18	
Arsenic	ND	5.6	6010D	6-4-18	6-4-18	
Beryllium	ND	0.56	6010D	6-1-18	6-1-18	
Cadmium	ND	0.56	6010D	6-4-18	6-4-18	
Chromium	44	0.56	6010D	6-4-18	6-4-18	
Copper	8.2	1.1	6010D	6-4-18	6-4-18	
Lead	ND	5.6	6010D	6-4-18	6-4-18	
Mercury	ND	0.28	7471B	6-4-18	6-4-18	
Nickel	21	2.8	6010D	6-4-18	6-4-18	
Selenium	ND	11	6010D	6-4-18	6-4-18	
Silver	ND	1.1	6010D	6-4-18	6-4-18	
Thallium	ND	2.8	6020B	6-1-18	6-4-18	
Zinc	26	2.8	6010D	6-4-18	6-4-18	



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 Project: 4082-039-01

TOTAL METALS
EPA 6010D/6020B/7471B

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	05-243-12					
Client ID:	FL252-B1-0-1.5					
Antimony	7.8	5.4	6010D	6-1-18	6-1-18	
Arsenic	28	5.4	6010D	6-4-18	6-4-18	
Beryllium	ND	0.54	6010D	6-1-18	6-1-18	
Cadmium	ND	0.54	6010D	6-4-18	6-4-18	
Chromium	52	0.54	6010D	6-4-18	6-4-18	
Copper	47	1.1	6010D	6-4-18	6-4-18	
Lead	39	5.4	6010D	6-4-18	6-4-18	
Mercury	ND	0.27	7471B	6-4-18	6-4-18	
Nickel	46	2.7	6010D	6-4-18	6-4-18	
Selenium	ND	11	6010D	6-4-18	6-4-18	
Silver	ND	1.1	6010D	6-4-18	6-4-18	
Thallium	ND	2.7	6020B	6-1-18	6-4-18	
Zinc	110	2.7	6010D	6-4-18	6-4-18	



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TOTAL METALS
EPA 6010D/6020B/7471B

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	05-243-13					
Client ID:	FL252-B1-2.5-3.5					
Antimony	ND	5.6	6010D	6-1-18	6-1-18	
Arsenic	ND	11	6010D	6-4-18	6-4-18	
Beryllium	ND	0.56	6010D	6-1-18	6-1-18	
Cadmium	ND	0.56	6010D	6-4-18	6-4-18	
Chromium	62	0.56	6010D	6-4-18	6-4-18	
Copper	27	1.1	6010D	6-4-18	6-4-18	
Lead	ND	5.6	6010D	6-4-18	6-4-18	
Mercury	ND	0.28	7471B	6-4-18	6-4-18	
Nickel	77	2.8	6010D	6-4-18	6-4-18	
Selenium	ND	11	6010D	6-4-18	6-4-18	
Silver	ND	1.1	6010D	6-4-18	6-4-18	
Thallium	ND	2.8	6020B	6-1-18	6-4-18	
Zinc	39	2.8	6010D	6-4-18	6-4-18	



Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-243
 Project: 4082-039-01

NWTPH-Dx

Matrix: Soil
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B1-0-1.5					
Laboratory ID:	05-243-12					
Diesel Range Organics	ND	27	NWTPH-Dx	6-1-18	6-1-18	
Lube Oil Range Organics	140	54	NWTPH-Dx	6-1-18	6-1-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	92	50-150				



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Project: 4082-039-01

**SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A**

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date	Date	Flags
				Prepared	Analyzed	
Lab ID:	05-243-13					
Client ID:	FL252-B1-2.5-3.5					
Hexavalent Chromium	ND	1.1	7196A mod	6-7-18	6-7-18	



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**NWTPH-HCID
 QUALITY CONTROL**

Matrix: Soil
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0524S3					
Gasoline Range Organics	ND	20	NWTPH-HCID	5-24-18	5-25-18	
Diesel Range Organics	ND	50	NWTPH-HCID	5-24-18	5-25-18	
Lube Oil Range Organics	ND	100	NWTPH-HCID	5-24-18	5-25-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	<i>104</i>	<i>50-150</i>				



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**NWTPH-Gx
 QUALITY CONTROL**

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0529S1					
Gasoline	ND	5.0	NWTPH-Gx	5-29-18	5-29-18	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	83	57-129				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	05-268-02							
	ORIG	DUP						
Gasoline	ND	ND	NA	NA	NA	NA	30	
Surrogate:								
Fluorobenzene				88	90	57-129		



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 Project: 4082-039-01

**NWTPH-Dx
QUALITY CONTROL**

Matrix: Soil
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0525S1					
Diesel Range Organics	ND	25	NWTPH-Dx	5-25-18	5-25-18	
Lube Oil Range Organics	ND	50	NWTPH-Dx	5-25-18	5-25-18	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	105	50-150				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	05-257-35							
	ORIG	DUP						
Diesel Range	ND	ND	NA	NA	NA	NA	NA	
Lube Oil Range	ND	ND	NA	NA	NA	NA	NA	
Surrogate:								
o-Terphenyl				83	88	50-150		



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 Project: 4082-039-01

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
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Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0531S1					
Dichlorodifluoromethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Chloromethane	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
Vinyl Chloride	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Bromomethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Chloroethane	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
Trichlorofluoromethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Acetone	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
Iodomethane	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
Carbon Disulfide	ND	0.0014	EPA 8260C	5-31-18	5-31-18	
Methylene Chloride	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Vinyl Acetate	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
2,2-Dichloropropane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
2-Butanone	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
Bromochloromethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Chloroform	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Carbon Tetrachloride	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloropropene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Benzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Trichloroethene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloropropane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Dibromomethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Bromodichloromethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Methyl Isobutyl Ketone	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
Toluene	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	



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VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID: MB0531S1						
1,1,2-Trichloroethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Tetrachloroethene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,3-Dichloropropane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
2-Hexanone	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
Dibromochloromethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Chlorobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Ethylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
m,p-Xylene	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
o-Xylene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Styrene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Bromoform	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
Isopropylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Bromobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
n-Propylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
2-Chlorotoluene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
4-Chlorotoluene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,3,5-Trimethylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
tert-Butylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trimethylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
sec-Butylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
p-Isopropyltoluene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
n-Butylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
Naphthalene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	109	68-139				
Toluene-d8	112	79-128				
4-Bromofluorobenzene	109	71-132				



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VOLATILES by EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
 Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits		RPD	RPD Limit	Flags
					Recovery				RPD		
SPIKE BLANKS											
Laboratory ID:	SB0531S1										
	SB	SBD	SB	SBD	SB	SBD					
1,1-Dichloroethene	0.0444	0.0476	0.0500	0.0500	89	95	53-141	7		17	
Benzene	0.0465	0.0490	0.0500	0.0500	93	98	70-130	5		15	
Trichloroethene	0.0474	0.0488	0.0500	0.0500	95	98	74-122	3		16	
Toluene	0.0503	0.0518	0.0500	0.0500	101	104	76-130	3		15	
Chlorobenzene	0.0466	0.0482	0.0500	0.0500	93	96	75-120	3		14	
Surrogate:											
Dibromofluoromethane					81	82	68-139				
Toluene-d8					81	84	79-128				
4-Bromofluorobenzene					81	82	71-132				



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 Project: 4082-039-01

SEMIVOLATILES EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL
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Matrix: Soil
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0531S1					
n-Nitrosodimethylamine	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Pyridine	ND	0.33	EPA 8270D	5-31-18	5-31-18	
Phenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Aniline	ND	0.17	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroethyl)ether	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2-Chlorophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Benzyl alcohol	ND	0.17	EPA 8270D	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2-Methylphenol (o-Cresol)	ND	0.033	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroisopropyl)ether	ND	0.033	EPA 8270D	5-31-18	5-31-18	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.033	EPA 8270D	5-31-18	5-31-18	
n-Nitroso-di-n-propylamine	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Hexachloroethane	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Nitrobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Isophorone	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2-Nitrophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,4-Dimethylphenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroethoxy)methane	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,4-Dichlorophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Naphthalene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
4-Chloroaniline	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
4-Chloro-3-methylphenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2-Methylnaphthalene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
1-Methylnaphthalene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Hexachlorocyclopentadiene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,4,6-Trichlorophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,3-Dichloroaniline	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,4,5-Trichlorophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2-Chloronaphthalene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2-Nitroaniline	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,4-Dinitrobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Dimethylphthalate	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,3-Dinitrobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,6-Dinitrotoluene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,2-Dinitrobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Acenaphthylene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
3-Nitroaniline	ND	0.033	EPA 8270D	5-31-18	5-31-18	



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SEMIVOLATILES EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0531S1					
2,4-Dinitrophenol	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Acenaphthene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
4-Nitrophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,4-Dinitrotoluene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Dibenzofuran	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,3,5,6-Tetrachlorophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,3,4,6-Tetrachlorophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Diethylphthalate	ND	0.17	EPA 8270D	5-31-18	5-31-18	
4-Chlorophenyl-phenylether	ND	0.033	EPA 8270D	5-31-18	5-31-18	
4-Nitroaniline	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Fluorene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
4,6-Dinitro-2-methylphenol	ND	0.17	EPA 8270D	5-31-18	5-31-18	
n-Nitrosodiphenylamine	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,2-Diphenylhydrazine	ND	0.033	EPA 8270D	5-31-18	5-31-18	
4-Bromophenyl-phenylether	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Hexachlorobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Pentachlorophenol	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Phenanthrene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Anthracene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Carbazole	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Di-n-butylphthalate	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Fluoranthene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Benzidine	ND	0.33	EPA 8270D	5-31-18	5-31-18	
Pyrene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Butylbenzylphthalate	ND	0.17	EPA 8270D	5-31-18	5-31-18	
bis-2-Ethylhexyladipate	ND	0.17	EPA 8270D	5-31-18	5-31-18	
3,3'-Dichlorobenzidine	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Benzo[a]anthracene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Chrysene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
bis(2-Ethylhexyl)phthalate	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Di-n-octylphthalate	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Benzo[b]fluoranthene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo(j,k)fluoranthene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[a]pyrene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Indeno[1,2,3-cd]pyrene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Dibenz[a,h]anthracene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[g,h,i]perylene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	26	19 - 103				
Phenol-d6	34	30 - 103				
Nitrobenzene-d5	30	27 - 105				
2-Fluorobiphenyl	45	36 - 102				
2,4,6-Tribromophenol	79	33 - 110				
Terphenyl-d14	73	38 - 108				



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**SEMIVOLATILES EPA 8270D/SIM
 MS/MSD QUALITY CONTROL**

Matrix: Soil
 Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES										
Laboratory ID:	05-259-06									
	MS	MSD	MS	MSD		MS	MSD			
Phenol	0.588	0.651	1.33	1.33	ND	44	49	37 - 94	10	27
2-Chlorophenol	0.548	0.602	1.33	1.33	ND	41	45	37 - 95	9	32
1,4-Dichlorobenzene	0.184	0.195	0.667	0.667	ND	28	29	23 - 97	6	37
n-Nitroso-di-n-propylamine	0.290	0.324	0.667	0.667	ND	43	49	40 - 91	11	28
1,2,4-Trichlorobenzene	0.334	0.372	0.667	0.667	ND	50	56	37 - 93	11	30
4-Chloro-3-methylphenol	0.679	0.726	1.33	1.33	ND	51	55	46 - 96	7	25
Acenaphthene	0.358	0.401	0.667	0.667	ND	54	60	43 - 90	11	25
4-Nitrophenol	0.494	0.569	1.33	1.33	ND	37	43	31 - 104	14	28
2,4-Dinitrotoluene	0.308	0.345	0.667	0.667	ND	46	52	31 - 96	11	32
Pentachlorophenol	0.740	0.933	1.33	1.33	ND	56	70	20 - 123	23	29
Pyrene	0.353	0.405	0.667	0.667	0.100	38	46	28 - 114	14	35
Surrogate:										
2-Fluorophenol						33	35	19 - 103		
Phenol-d6						39	43	30 - 103		
Nitrobenzene-d5						39	41	27 - 105		
2-Fluorobiphenyl						50	55	36 - 102		
2,4,6-Tribromophenol						50	61	33 - 110		
Terphenyl-d14						45	54	38 - 108		



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**TOTAL METALS
 EPA 6010D/6020B/7471B
 METHOD BLANK QUALITY CONTROL**

Date Extracted: 6-1&4-18

Date Analyzed: 6-1&4-18

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: MB0601SH1,MB0604SM1&MB0604S2

Analyte	Method	Result	PQL
Antimony	6010D	ND	5.0
Arsenic	6010D	ND	5.0
Beryllium	6010D	ND	0.50
Cadmium	6010D	ND	0.50
Chromium	6010D	ND	0.50
Copper	6010D	ND	1.0
Lead	6010D	ND	5.0
Mercury	7471B	ND	0.25
Nickel	6010D	ND	2.5
Selenium	6010D	ND	10
Silver	6010D	ND	1.0
Thallium	6020B	ND	2.5
Zinc	6010D	ND	2.5



Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-243
 Project: 4082-039-01

**TOTAL METALS
 EPA 6010D/6020B/7471B
 DUPLICATE QUALITY CONTROL**

Date Extracted: 6-1&4-18

Date Analyzed: 6-1&4-18

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: 05-243-13

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Antimony	ND	ND	NA	5.0	
Arsenic	ND	5.40	NA	5.0	
Beryllium	ND	ND	NA	0.50	
Cadmium	ND	ND	NA	0.50	
Chromium	55.5	52.9	5	0.50	
Copper	23.9	21.3	12	1.0	
Lead	ND	ND	NA	5.0	
Mercury	ND	ND	NA	0.25	
Nickel	68.5	57.7	17	2.5	
Selenium	ND	ND	NA	10	
Silver	ND	ND	NA	1.0	
Thallium	ND	ND	NA	2.5	
Zinc	35.1	32.7	7	2.5	



Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-243
 Project: 4082-039-01

**TOTAL METALS
 EPA 6010D/6020B/7471B
 MS/MSD QUALITY CONTROL**

Date Extracted: 6-1&4-18

Date Analyzed: 6-1&4-18

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: 05-243-13

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Antimony	100	92.5	93	91.0	91	2	
Arsenic	100	99.5	99	97.8	98	2	
Beryllium	50.0	42.4	85	42.3	85	0	
Cadmium	50.0	49.8	100	50.0	100	0	
Chromium	100	137	81	140	84	2	
Copper	50.0	75.0	102	73.6	99	2	
Lead	250	241	97	242	97	0	
Mercury	0.500	0.472	94	0.494	99	5	
Nickel	100	155	86	155	87	0	
Selenium	100	91.8	92	95.7	96	4	
Silver	25.0	21.7	87	21.9	88	1	
Thallium	50.0	51.5	103	51.8	104	0	
Zinc	100	137	102	137	102	0	



Date of Report: June 8, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-243
 Project: 4082-039-01

**NWTPH-Dx
 QUALITY CONTROL**

Matrix: Soil
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0601S1					
Diesel Range Organics	ND	25	NWTPH-Dx	6-1-18	6-1-18	
Lube Oil Range Organics	ND	50	NWTPH-Dx	6-1-18	6-1-18	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	95	50-150				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	05-320-08									
	ORIG	DUP								
Diesel Range	ND	ND	NA	NA		NA	NA	NA	NA	
Lube Oil Range	ND	ND	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						90	98	50-150		



Date of Report: June 8, 2018
Samples Submitted: May 23, 2018
Laboratory Reference: 1805-243
Project: 4082-039-01

**SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A
METHOD BLANK QUALITY CONTROL**

Date Extracted: 6-7-18
Date Analyzed: 6-7-18

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0607S1

Analyte	Method	Result	PQL
Hexavalent Chromium	7196A mod	ND	1.0



Date of Report: June 8, 2018
Samples Submitted: May 23, 2018
Laboratory Reference: 1805-243
Project: 4082-039-01

**SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A
DUPLICATE QUALITY CONTROL**

Date Extracted: 6-7-18
Date Analyzed: 6-7-18

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 05-255-12

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Hexavalent Chromium	ND	ND	NA	1.0	



Date of Report: June 8, 2018
Samples Submitted: May 23, 2018
Laboratory Reference: 1805-243
Project: 4082-039-01

**SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A
MS/MSD QUALITY CONTROL**

Date Extracted: 6-7-18
Date Analyzed: 6-7-18

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 05-255-12

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Hexavalent Chromium	5.00	4.10	82	4.54	91	10	



Date of Report: June 8, 2018
Samples Submitted: May 23, 2018
Laboratory Reference: 1805-243
Project: 4082-039-01

% MOISTURE

Date Analyzed: 5-24-18

Client ID	Lab ID	% Moisture
FL252-B2-1-2	05-243-02	11
FL252-B2-5-6	05-243-04	6
FL252-B2-15-16	05-243-07	11
FL252-B2-20-20.8	05-243-08	10
FL252-B2-25-26	05-243-09	10
FL252-B2-30-31	05-243-10	16
FL252-B1-0-1.5	05-243-12	8
FL252-B1-2.5-3.5	05-243-13	11





Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B - The analyte indicated was also found in the blank sample.
- C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E - The value reported exceeds the quantitation range and is an estimate.
- F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I - Compound recovery is outside of the control limits.
- J - The value reported was below the practical quantitation limit. The value is an estimate.
- K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L - The RPD is outside of the control limits.
- M - Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
- N - Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 - Hydrocarbons in diesel range are impacting lube oil range results.
- O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P - The RPD of the detected concentrations between the two columns is greater than 40.
- Q - Surrogate recovery is outside of the control limits.
- S - Surrogate recovery data is not available due to the necessary dilution of the sample.
- T - The sample chromatogram is not similar to a typical _____.
- U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 - The practical quantitation limit is elevated due to interferences present in the sample.
- V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X - Sample extract treated with a mercury cleanup procedure.
- X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.
- Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
- Z -
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference





Onsite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Chain of Custody

Company: GeoEngineers
Project Number: 4082-035-01
Project Name: SANDB TRAIL
Project Manager: Mrs. Besson
Sampled by: Seb/CSTC

Turnaround Request
(in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
(TPI analysis 5 Days)

☐ (other) _____

Laboratory Number: **05-243**

Lab ID	Sample Identification
1	FL252-B2-0-1
2	FL252-B2-1-2
3	FL252-B2-3-4
4	FL252-B2-5-6
5	FL252-B2-8-9
6	FL252-B2-10-11
7	FL252-B2-15-16
8	FL252-B2-20-20.8
9	FL252-B2-25-26
10	FL252-B2-30-31

Date Sampled	Time Sampled	Matrix
5/23/18	0840	S
	0850	
	0900	
	0910	
	0920	
	0930	
	0945	
	1025	
	1055	
	1115	

Number of Containers

NWTPH-HCID	
NWTPH-Gx/BTEX	
NWTPH-Gx	
NWTPH-Dx (☐ Acid / SG Clean-up)	
Volatiles 8260C	
Halogenated Volatiles 8260C	
EDB EPA 8011 (Waters Only)	
Semivolatiles 8270D/SIM (with low-level PAHs)	
PAHs 8270D/SIM (low-level)	
PCBs 8082A	
Organochlorine Pesticides 8081B	
Organophosphorus Pesticides 8270D/SIM	
Chlorinated Acid Herbicides 8151A	
Total RCRA Metals	
Total MTCA Metals	
TCLP Metals	
HEM (oil and grease) 1664A	
Priority Pollutant Metals	
% Moisture	

Signature	Company	Date	Time	Comments/Special Instructions
<u>FL Dean</u>	<u>LEI-E</u>	<u>5/23/18</u>	<u>8:05 am</u>	<u>Arsenic - 7 ppm</u>
<u>Van</u>	<u>SPB</u>	<u>5/23/18</u>	<u>8:05</u>	<u>X - Added 5/24/18 . DB (STA)</u>
<u>Van</u>	<u>SPB</u>	<u>5/23/18</u>	<u>1400</u>	<u>⊗ Added 5/31/18 . DB (STA)</u>
<u>QRE</u>	<u>QRE</u>	<u>5/23/18</u>	<u>1400</u>	<u>⊗ Added 6/6/18 . DB (STA)</u>

Relinquished				
Received				
Relinquished				
Received				
Relinquished				
Received				
Relinquished				
Received				
Relinquished				
Reviewed/Date				

Data Package: Standard ☐ Level III ☐ Level IV ☐
Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐



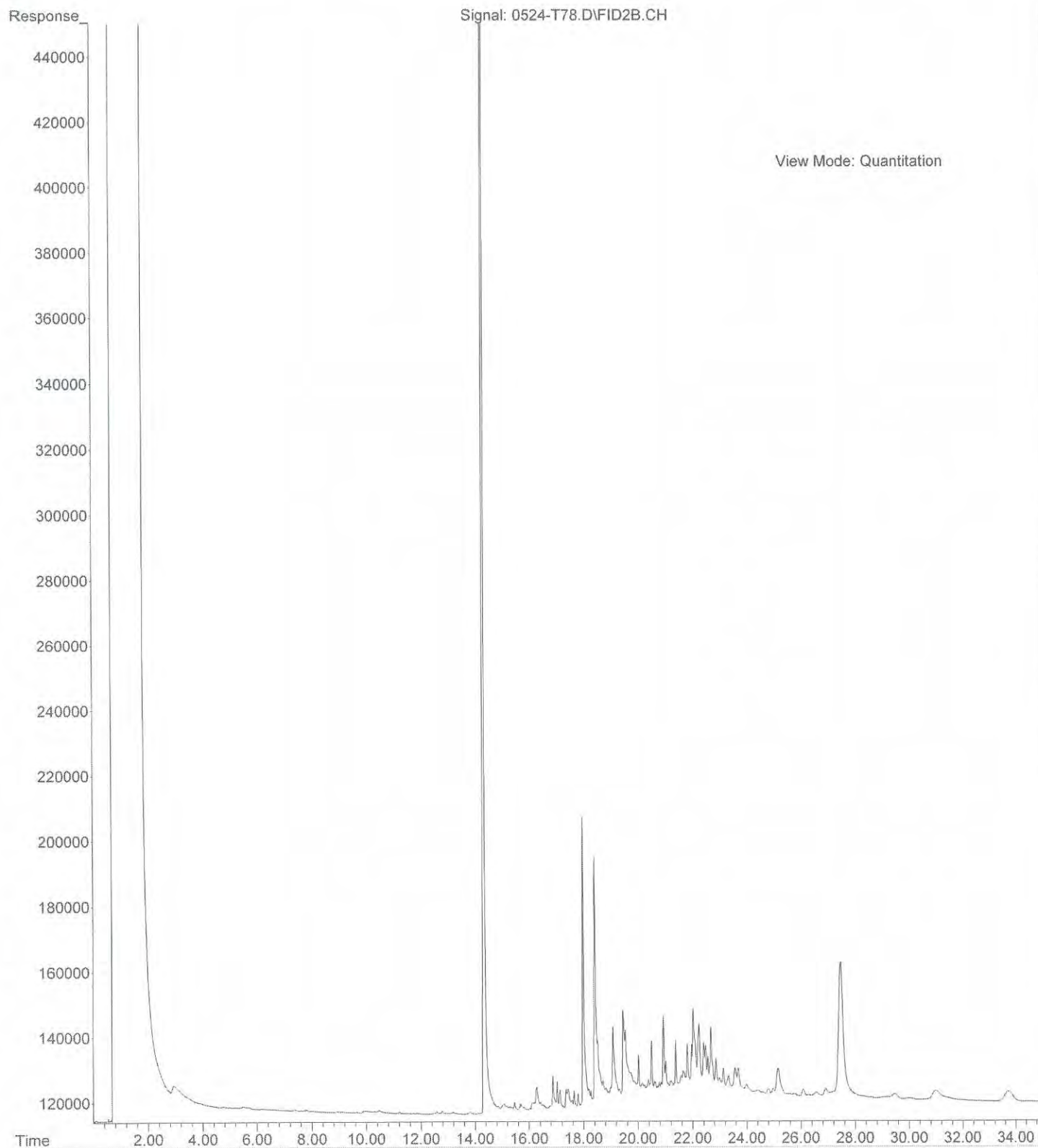
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Chain of Custody

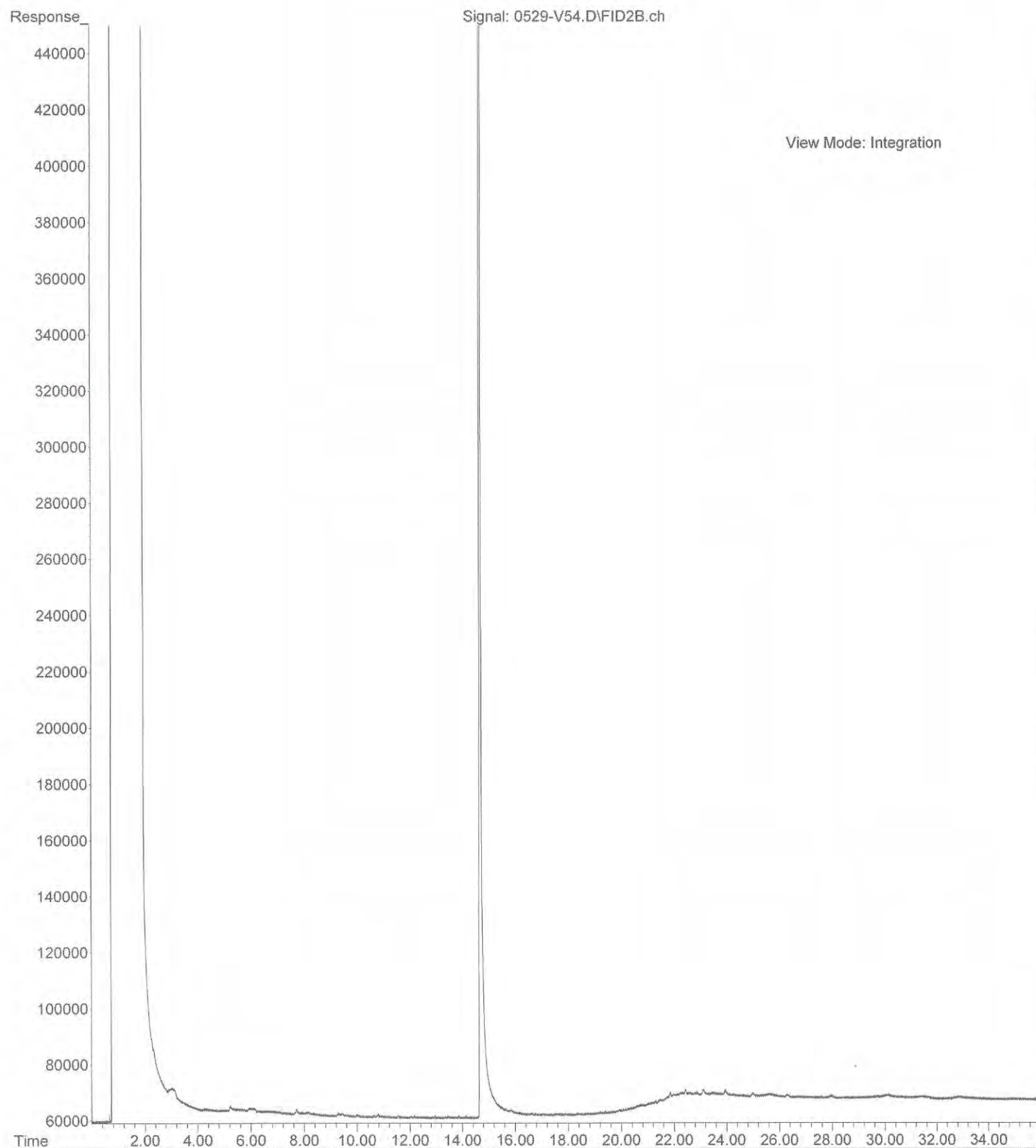
Page 2 of 2

[illegible]

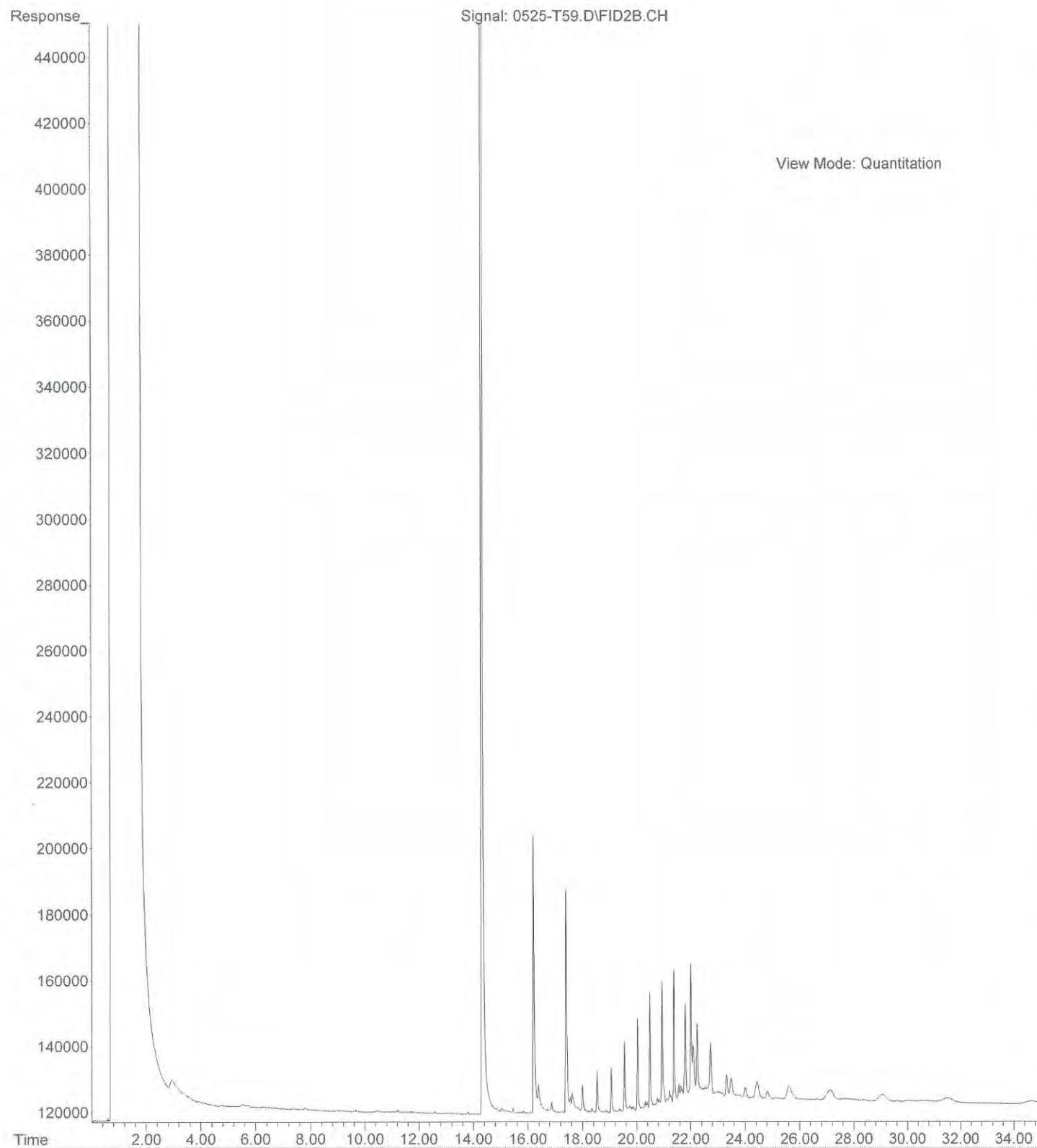
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Acquired : 25 May 2018 4:21 using AcqMethod T180110F.M
Instrument : Teri
Sample Name: 05-243-02
Misc Info :
Vial Number: 78



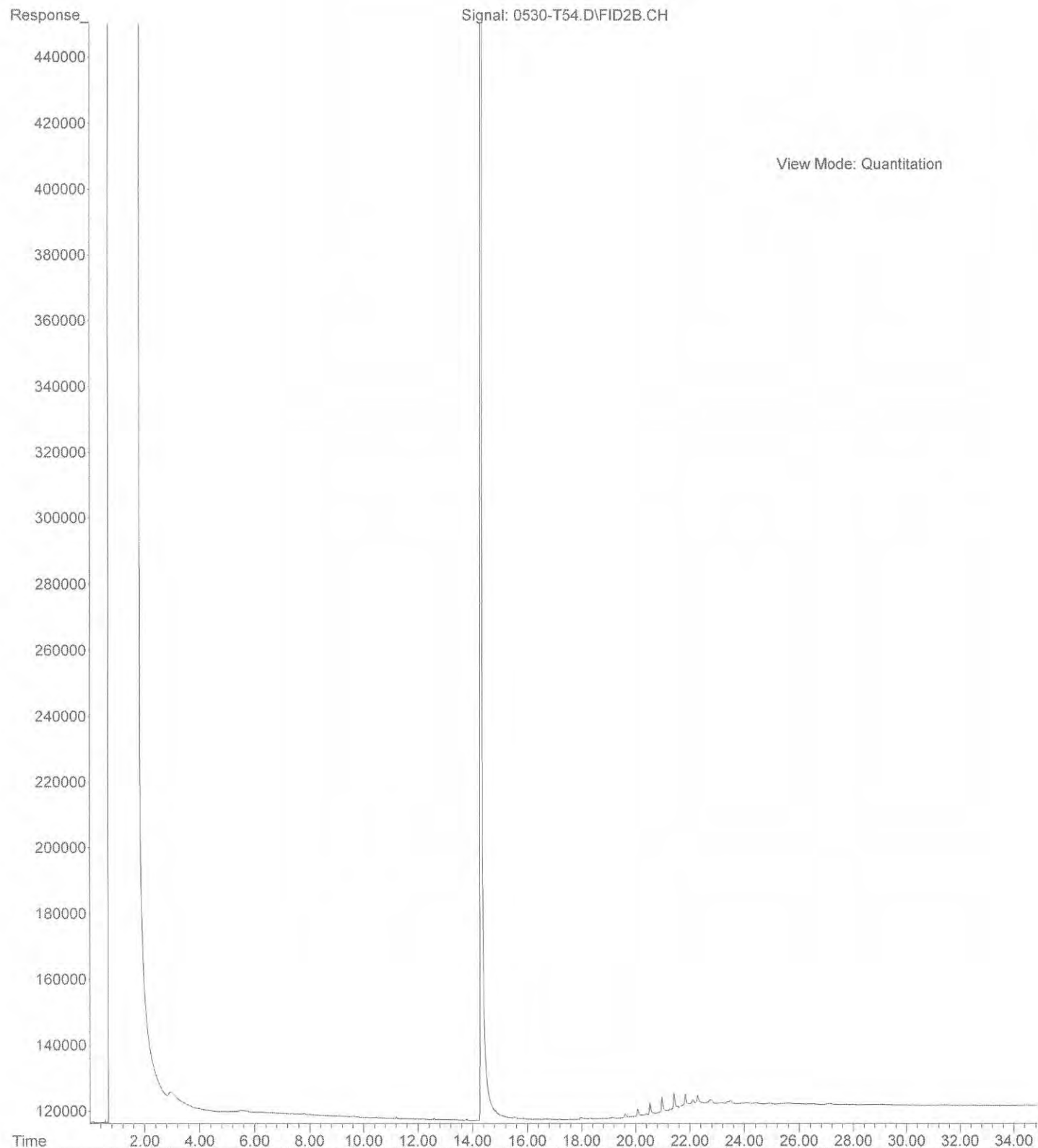
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Instrument : Vigo
Sample Name: 05-243-07 RR
Misc Info :
Vial Number: 54



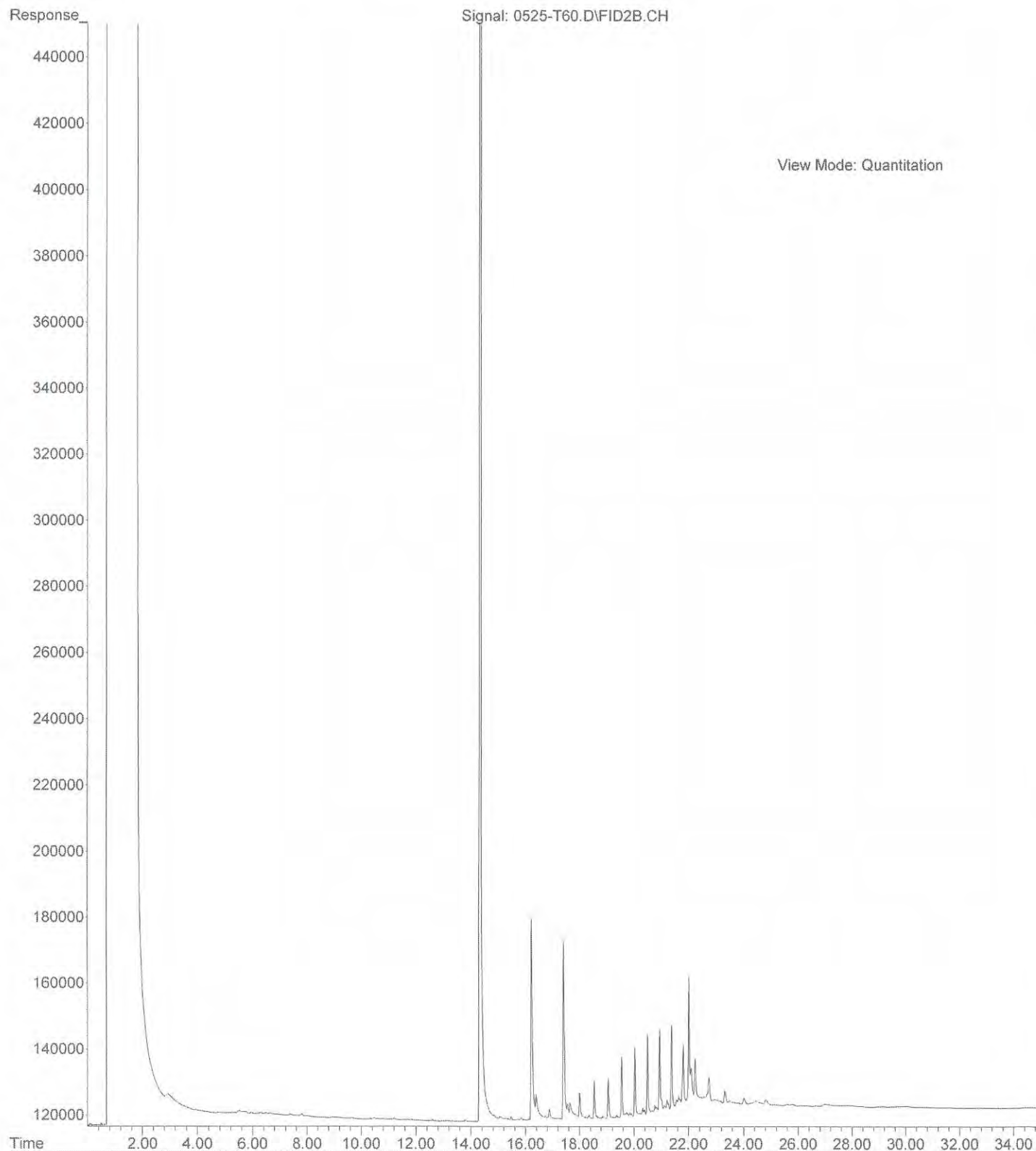
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Instrument : Teri
Sample Name: 05-243-08
Misc Info :
Vial Number: 59



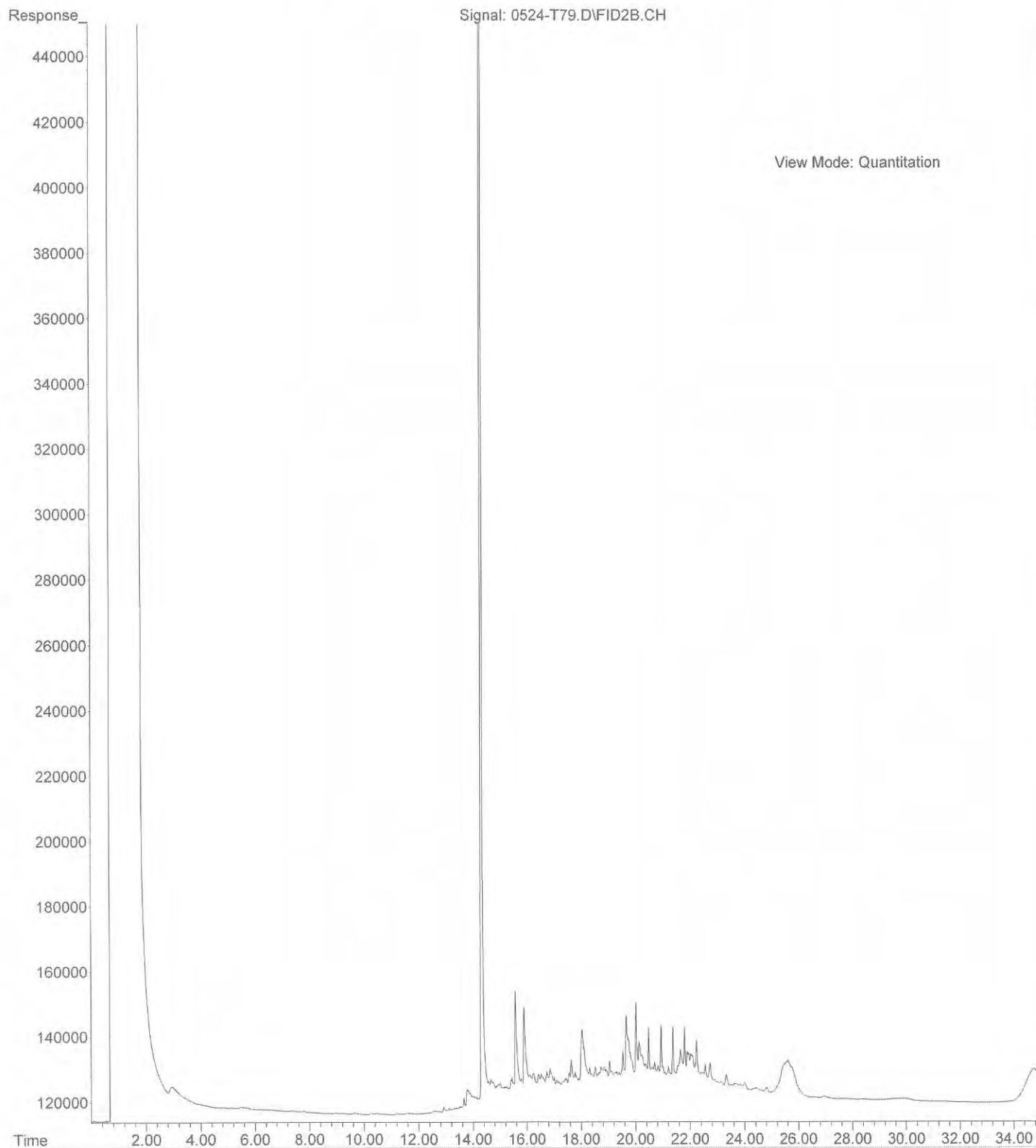
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Instrument : Teri
Sample Name: 05-243-09
Misc Info :
Vial Number: 54



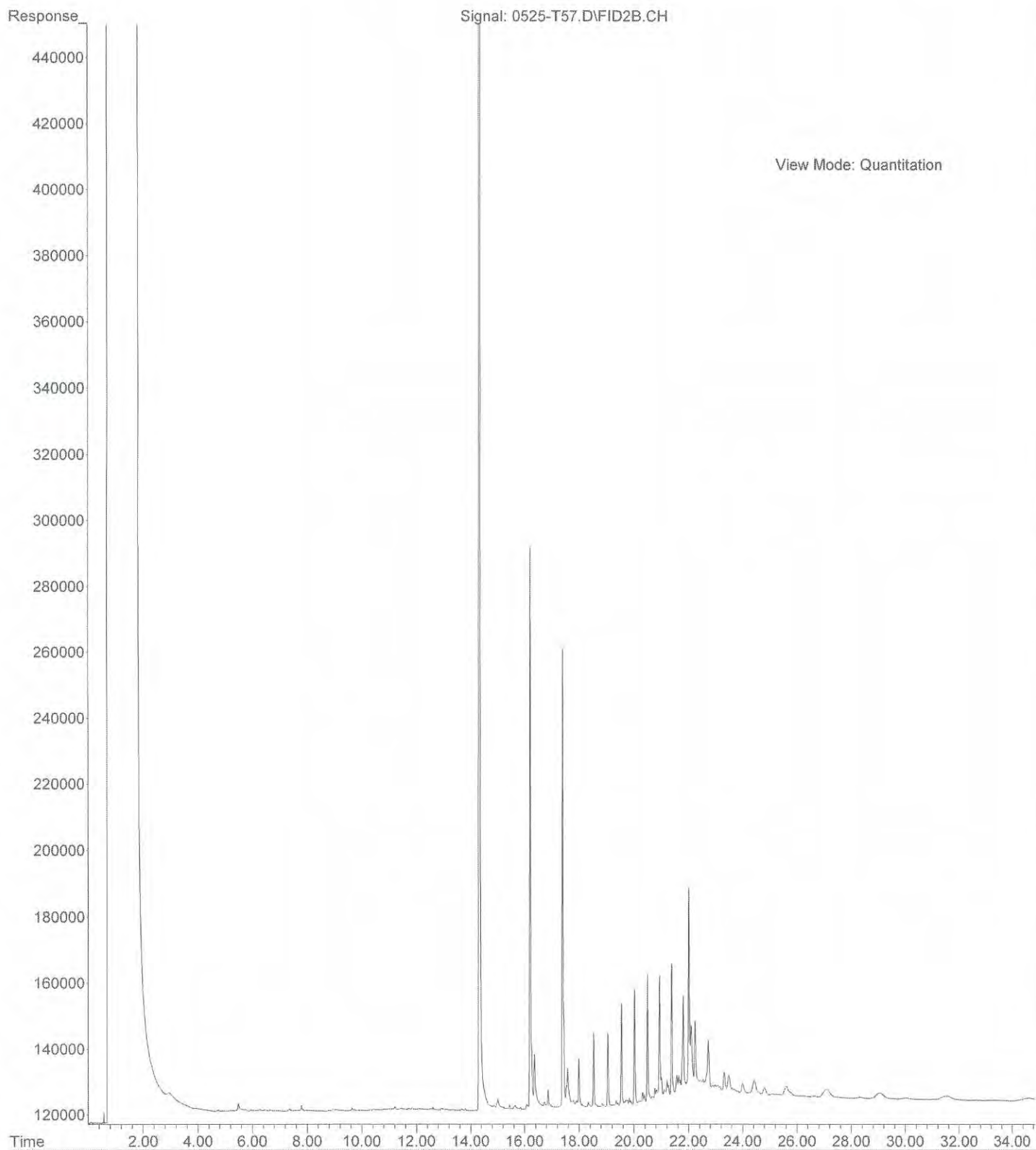
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Operator : JT
Acquired : 25 May 2018 14:21 using AcqMethod T180110F.M
Instrument : Teri
Sample Name: 05-243-10
Misc Info :
Vial Number: 60



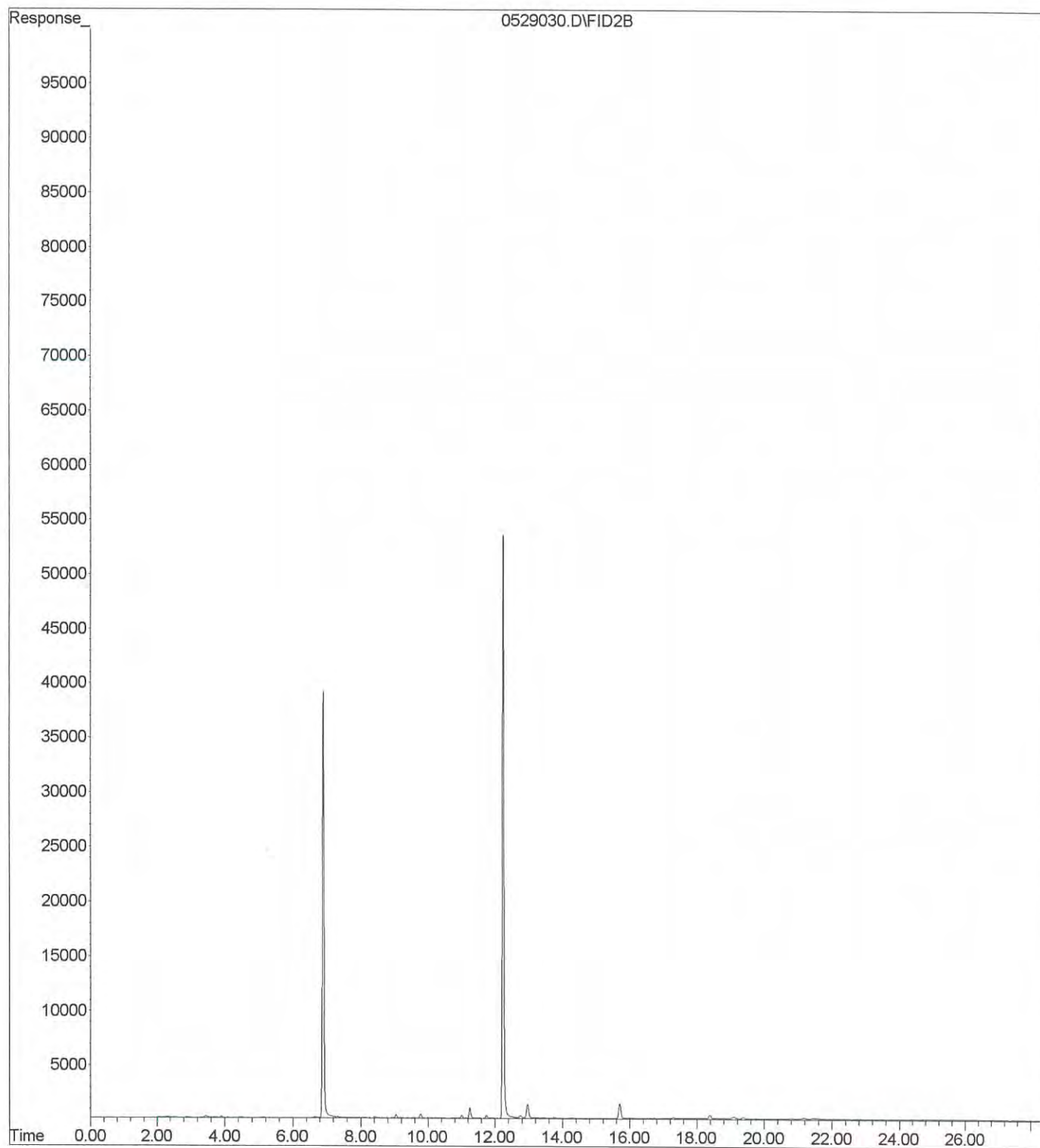
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Instrument : Teri
Sample Name: 05-243-12
Misc Info :
Vial Number: 79



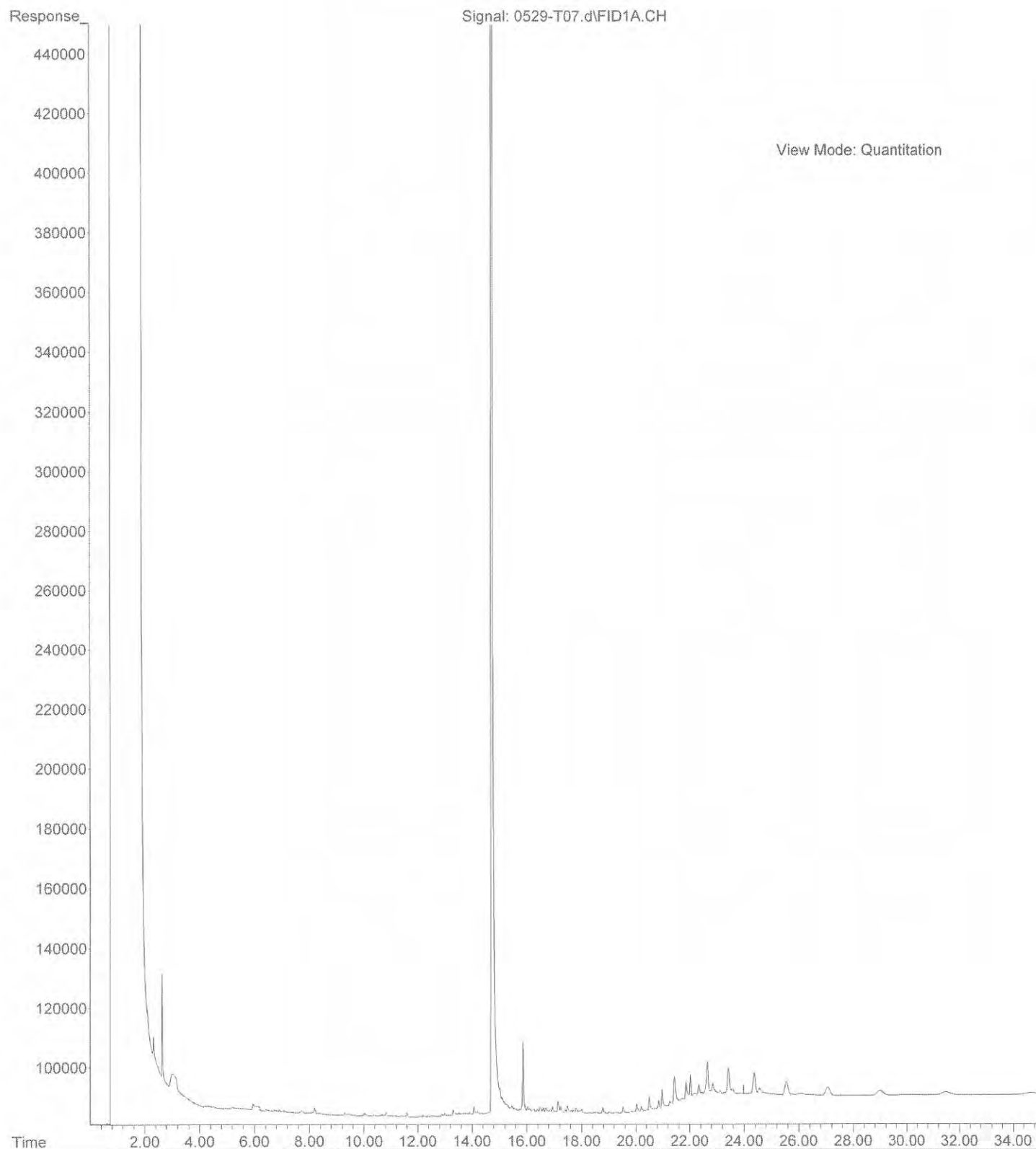
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Instrument : Teri
Sample Name: 05-243-13
Misc Info :
Vial Number: 57



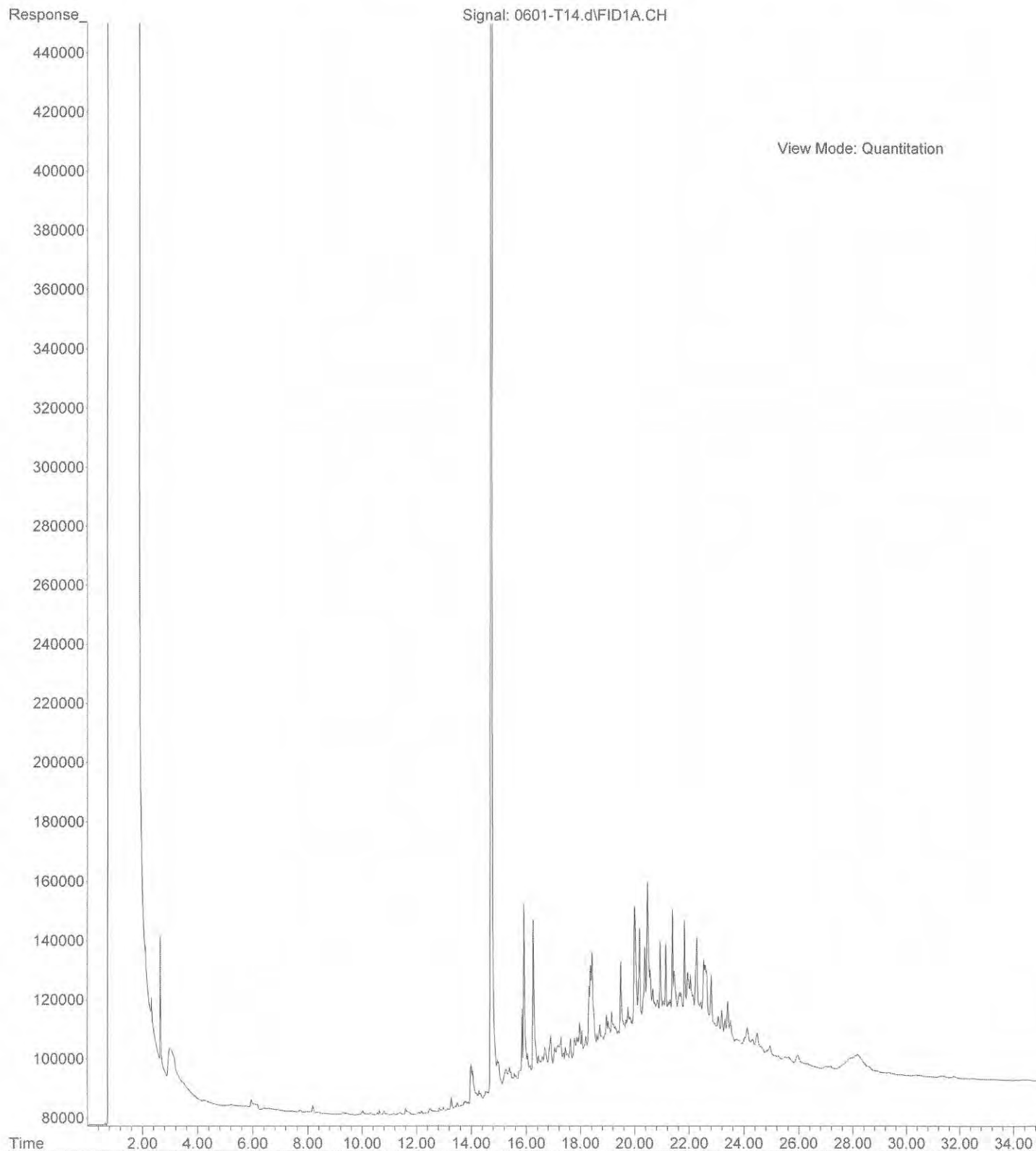
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Operator :
Acquired : 30 May 2018 6:04 using AcqMethod 180514G.M
Instrument : Daryl
Sample Name: 05-243-04s
Misc Info :
Vial Number: 30



File :X:\DIESELS\TERI\DATA\T180529\0529-T07.d
Operator : JT
Acquired : 29 May 2018 11:53 using AcqMethod T180110F.M
Instrument : Teri
Sample Name: 05-243-04 RR
Misc Info :
Vial Number: 7



File :X:\DIESELS\TERI\DATA\T180601\0601-T14.d
Operator : JT
Acquired : 01 Jun 2018 17:28 using AcqMethod T180110F.M
Instrument : Teri
Sample Name: 05-243-12
Misc Info :
Vial Number: 14





14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

June 14, 2018

Marsi Beeson
GeoEngineers, Inc.
12000 NW Naito Parkway, Suite 180
Portland, OR 97209

Re: Analytical Data for Project 4082-039-01
Laboratory Reference No. 1805-259

Dear Marsi:

Enclosed are the analytical results and associated quality control data for samples submitted on May 24, 2018.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal flourish extending to the right.

David Baumeister
Project Manager

Enclosures



OnSite Environmental, Inc. 14648 NE 95th Street, Redmond, WA 98052 (425) 883-3881

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: June 14, 2018
Samples Submitted: May 24, 2018
Laboratory Reference: 1805-259
Project: 4082-039-01

Case Narrative

Samples were collected on May 23, 2018 and received by the laboratory on May 24, 2018. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH-Gx Analysis

Per client request, samples FL252-B4-5-6, and FL252-B4-6-6.5 were extracted and analyzed outside of the holding time.

NWTPH-Dx Analysis

Per client request, samples FL252-B3-2.5-3.5, FL252-B3-5-6, FL252-B4-0-1, FL252-B4-5-6, and FL252-B4-6-6.5 were extracted and analyzed outside of the holding time.

Semivolatiles EPA 8270D/SIM Analysis

Sample FL252-B3-0-1 had one surrogate recovery of each, acid and base out of control limits. This is within allowance of our standard operating procedure as long as the recovery is above 10%.

Total Metals EPA 6010D/6020B/7471B Analysis

The duplicate RPD for Zinc is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

The Matrix Spike/ Matrix Spike Duplicate recoveries for Zinc is outside control limits due to matrix inhomogeneity. The samples were re-extracted and re-analyzed with similar results. The Spike Blank recovery was 104%.

Please note that any other QA/QC issues associated with these extractions and analyses will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.



Date of Report: June 14, 2018
 Samples Submitted: May 24, 2018
 Laboratory Reference: 1805-259
 Project: 4082-039-01

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
FL252-B1-0-0.5	05-259-01	Soil	5-23-18	5-24-18	
FL252-B1-0.5-1	05-259-02	Soil	5-23-18	5-24-18	
FL252-B2-0-0.5	05-259-03	Soil	5-23-18	5-24-18	
FL252-B2-0.5-1	05-259-04	Soil	5-23-18	5-24-18	
FL252-B3-0-0.5	05-259-05	Soil	5-23-18	5-24-18	
FL252-B3-0-1	05-259-06	Soil	5-23-18	5-24-18	
FL252-B3-2.5-3.5	05-259-07	Soil	5-23-18	5-24-18	
FL252-B3-10-11	05-259-10	Soil	5-23-18	5-24-18	
FL252-B4-0-0.5	05-259-11	Soil	5-23-18	5-24-18	
FL252-B4-0-1	05-259-12	Soil	5-23-18	5-24-18	
FL252-B4-2.5-3.5	05-259-13	Soil	5-23-18	5-24-18	
FL252-B4-5-6	05-259-14	Soil	5-23-18	5-24-18	
FL252-B4-7.5-8.5	05-259-16	Soil	5-23-18	5-24-18	
FL252-B4-10-11	05-259-17	Soil	5-23-18	5-24-18	



Date of Report: June 14, 2018
 Samples Submitted: May 24, 2018
 Laboratory Reference: 1805-259
 Project: 4082-039-01

NWTPH-HCID

Matrix: Soil
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B3-0-1					
Laboratory ID:	05-259-06					
Gasoline Range Organics	ND	21	NWTPH-HCID	5-30-18	5-31-18	
Diesel Range Organics	ND	53	NWTPH-HCID	5-30-18	5-31-18	
Lube Oil Range Organics	ND	110	NWTPH-HCID	5-30-18	5-31-18	

Surrogate: **Percent Recovery** **Control Limits**
o-Terphenyl **101** **50-150**

Client ID: **FL252-B3-2.5-3.5**

Laboratory ID: 05-259-07

Gasoline Range Organics	ND	23	NWTPH-HCID	5-30-18	5-31-18	
Diesel Range Organics	ND	57	NWTPH-HCID	5-30-18	5-31-18	
Lube Oil Range Organics	Detected	110	NWTPH-HCID	5-30-18	5-31-18	

Surrogate: **Percent Recovery** **Control Limits**
o-Terphenyl **105** **50-150**

Client ID: **FL252-B3-10-11**

Laboratory ID: 05-259-10

Gasoline Range Organics	ND	22	NWTPH-HCID	5-30-18	5-30-18	
Diesel Range Organics	ND	54	NWTPH-HCID	5-30-18	5-30-18	
Lube Oil Range Organics	ND	110	NWTPH-HCID	5-30-18	5-30-18	

Surrogate: **Percent Recovery** **Control Limits**
o-Terphenyl **101** **50-150**

Client ID: **FL252-B4-0-1**

Laboratory ID: 05-259-12

Gasoline Range Organics	ND	21	NWTPH-HCID	5-30-18	5-31-18	
Diesel Range Organics	ND	53	NWTPH-HCID	5-30-18	5-31-18	
Lube Oil	Detected	110	NWTPH-HCID	5-30-18	5-31-18	

Surrogate: **Percent Recovery** **Control Limits**
o-Terphenyl **102** **50-150**

Client ID: **FL252-B4-5-6**

Laboratory ID: 05-259-14

Gasoline Range Organics	Detected	34	NWTPH-HCID	5-30-18	5-31-18	
Diesel Range Organics	Detected	84	NWTPH-HCID	5-30-18	5-31-18	
Lube Oil Range Organics	Detected	170	NWTPH-HCID	5-30-18	5-31-18	

Surrogate: **Percent Recovery** **Control Limits**
o-Terphenyl **107** **50-150**



Date of Report: June 14, 2018
 Samples Submitted: May 24, 2018
 Laboratory Reference: 1805-259
 Project: 4082-039-01

NWTPH-HCID

Matrix: Soil
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B4-7.5-8.5					
Laboratory ID:	05-259-16					
Gasoline Range Organics	ND	24	NWTPH-HCID	5-30-18	5-31-18	
Diesel Range Organics	ND	59	NWTPH-HCID	5-30-18	5-31-18	
Lube Oil Range Organics	ND	120	NWTPH-HCID	5-30-18	5-31-18	
Surrogate:	Percent Recovery	Control Limits				
<i>o-Terphenyl</i>	97	50-150				

Client ID:	FL252-B4-10-11					
Laboratory ID:	05-259-17					
Gasoline Range Organics	ND	22	NWTPH-HCID	5-30-18	5-31-18	
Diesel Range Organics	ND	54	NWTPH-HCID	5-30-18	5-31-18	
Lube Oil Range Organics	ND	110	NWTPH-HCID	5-30-18	5-31-18	
Surrogate:	Percent Recovery	Control Limits				
<i>o-Terphenyl</i>	100	50-150				



Date of Report: June 14, 2018
 Samples Submitted: May 24, 2018
 Laboratory Reference: 1805-259
 Project: 4082-039-01

NWTPH-Gx

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B4-5-6					
Laboratory ID:	05-259-14					
Gasoline	ND	12	NWTPH-Gx	6-7-18	6-7-18	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	67	57-129				
Client ID:	FL252-B4-6-6.5					
Laboratory ID:	05-259-15					
Gasoline	ND	7.6	NWTPH-Gx	6-7-18	6-7-18	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	84	57-129				



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 Project: 4082-039-01

NWTPH-Dx

Matrix: Soil
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B3-2.5-3.5					
Laboratory ID:	05-259-07					
Diesel Range Organics	55	28	NWTPH-Dx	6-7-18	6-8-18	N
Lube Oil Range Organics	200	57	NWTPH-Dx	6-7-18	6-8-18	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	93	50-150				
Client ID:	FL252-B3-5-6					
Laboratory ID:	05-259-08					
Diesel Range Organics	30	27	NWTPH-Dx	6-7-18	6-8-18	N
Lube Oil	150	54	NWTPH-Dx	6-7-18	6-8-18	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	107	50-150				
Client ID:	FL252-B4-0-1					
Laboratory ID:	05-259-12					
Diesel Range Organics	ND	30	NWTPH-Dx	6-7-18	6-9-18	U1
Lube Oil	440	53	NWTPH-Dx	6-7-18	6-9-18	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	93	50-150				
Client ID:	FL252-B4-5-6					
Laboratory ID:	05-259-14					
Diesel Range Organics	1200	210	NWTPH-Dx	6-7-18	6-11-18	
Lube Oil Range Organics	2400	420	NWTPH-Dx	6-7-18	6-11-18	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	110	50-150				
Client ID:	FL252-B4-6-6.5					
Laboratory ID:	05-259-15					
Diesel Range Organics	ND	30	NWTPH-Dx	6-7-18	6-8-18	
Lube Oil Range Organics	120	60	NWTPH-Dx	6-7-18	6-8-18	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	84	50-150				



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Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B3-0-1					
Laboratory ID:	05-259-06					
Dichlorodifluoromethane	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Chloromethane	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
Vinyl Chloride	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Bromomethane	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Chloroethane	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
Trichlorofluoromethane	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Acetone	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
Iodomethane	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
Carbon Disulfide	ND	0.0014	EPA 8260C	5-31-18	5-31-18	
Methylene Chloride	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
(trans) 1,2-Dichloroethene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Methyl t-Butyl Ether	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethane	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Vinyl Acetate	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
2,2-Dichloropropane	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
(cis) 1,2-Dichloroethene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
2-Butanone	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
Bromochloromethane	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Chloroform	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
1,1,1-Trichloroethane	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Carbon Tetrachloride	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloropropene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Benzene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloroethane	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Trichloroethene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloropropane	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Dibromomethane	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Bromodichloromethane	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
2-Chloroethyl Vinyl Ether	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
(cis) 1,3-Dichloropropene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Methyl Isobutyl Ketone	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
Toluene	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
(trans) 1,3-Dichloropropene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B3-0-1					
Laboratory ID:	05-259-06					
1,1,2-Trichloroethane	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Tetrachloroethene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
1,3-Dichloropropane	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
2-Hexanone	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
Dibromochloromethane	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromoethane	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Chlorobenzene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
1,1,1,2-Tetrachloroethane	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Ethylbenzene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
m,p-Xylene	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
o-Xylene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Styrene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Bromoform	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
Isopropylbenzene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Bromobenzene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
1,1,2,2-Tetrachloroethane	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichloropropane	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
n-Propylbenzene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
2-Chlorotoluene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
4-Chlorotoluene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
1,3,5-Trimethylbenzene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
tert-Butylbenzene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trimethylbenzene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
sec-Butylbenzene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
p-Isopropyltoluene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
n-Butylbenzene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromo-3-chloropropane	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
Naphthalene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichlorobenzene	ND	0.00099	EPA 8260C	5-31-18	5-31-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	105	68-139				
Toluene-d8	104	79-128				
4-Bromofluorobenzene	99	71-132				



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Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-B3-2.5-3.5						
Laboratory ID: 05-259-07						
Dichlorodifluoromethane	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
Chloromethane	ND	0.0084	EPA 8260C	5-31-18	5-31-18	
Vinyl Chloride	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
Bromomethane	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
Chloroethane	ND	0.0084	EPA 8260C	5-31-18	5-31-18	
Trichlorofluoromethane	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
Acetone	0.43	0.0084	EPA 8260C	5-31-18	5-31-18	
Iodomethane	ND	0.0084	EPA 8260C	5-31-18	5-31-18	
Carbon Disulfide	ND	0.0024	EPA 8260C	5-31-18	5-31-18	
Methylene Chloride	ND	0.0084	EPA 8260C	5-31-18	5-31-18	
(trans) 1,2-Dichloroethene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
Methyl t-Butyl Ether	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethane	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
Vinyl Acetate	ND	0.0084	EPA 8260C	5-31-18	5-31-18	
2,2-Dichloropropane	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
(cis) 1,2-Dichloroethene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
2-Butanone	0.047	0.0084	EPA 8260C	5-31-18	5-31-18	
Bromochloromethane	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
Chloroform	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
1,1,1-Trichloroethane	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
Carbon Tetrachloride	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloropropene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
Benzene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloroethane	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
Trichloroethene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloropropane	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
Dibromomethane	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
Bromodichloromethane	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
2-Chloroethyl Vinyl Ether	ND	0.0084	EPA 8260C	5-31-18	5-31-18	
(cis) 1,3-Dichloropropene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
Methyl Isobutyl Ketone	ND	0.0084	EPA 8260C	5-31-18	5-31-18	
Toluene	ND	0.0084	EPA 8260C	5-31-18	5-31-18	
(trans) 1,3-Dichloropropene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B3-2.5-3.5					
Laboratory ID:	05-259-07					
1,1,2-Trichloroethane	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
Tetrachloroethene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
1,3-Dichloropropane	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
2-Hexanone	ND	0.0084	EPA 8260C	5-31-18	5-31-18	
Dibromochloromethane	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromoethane	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
Chlorobenzene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
1,1,1,2-Tetrachloroethane	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
Ethylbenzene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
m,p-Xylene	ND	0.0034	EPA 8260C	5-31-18	5-31-18	
o-Xylene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
Styrene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
Bromoform	ND	0.0084	EPA 8260C	5-31-18	5-31-18	
Isopropylbenzene	0.011	0.0017	EPA 8260C	5-31-18	5-31-18	
Bromobenzene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
1,1,2,2-Tetrachloroethane	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichloropropane	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
n-Propylbenzene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
2-Chlorotoluene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
4-Chlorotoluene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
1,3,5-Trimethylbenzene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
tert-Butylbenzene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trimethylbenzene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
sec-Butylbenzene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
p-Isopropyltoluene	0.12	0.0017	EPA 8260C	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
n-Butylbenzene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromo-3-chloropropane	ND	0.0084	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.0084	EPA 8260C	5-31-18	5-31-18	
Naphthalene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichlorobenzene	ND	0.0017	EPA 8260C	5-31-18	5-31-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	100	68-139				
Toluene-d8	101	79-128				
4-Bromofluorobenzene	87	71-132				



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Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:		FL252-B3-10-11				
Laboratory ID:		05-259-10				
Dichlorodifluoromethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Chloromethane	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
Vinyl Chloride	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Bromomethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Chloroethane	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
Trichlorofluoromethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Acetone	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
Iodomethane	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
Carbon Disulfide	ND	0.0015	EPA 8260C	5-31-18	5-31-18	
Methylene Chloride	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
(trans) 1,2-Dichloroethene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Methyl t-Butyl Ether	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Vinyl Acetate	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
2,2-Dichloropropane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
(cis) 1,2-Dichloroethene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
2-Butanone	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
Bromochloromethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Chloroform	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1,1-Trichloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Carbon Tetrachloride	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloropropene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Benzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Trichloroethene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloropropane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Dibromomethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Bromodichloromethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
2-Chloroethyl Vinyl Ether	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
(cis) 1,3-Dichloropropene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Methyl Isobutyl Ketone	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
Toluene	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
(trans) 1,3-Dichloropropene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B3-10-11					
Laboratory ID:	05-259-10					
1,1,2-Trichloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Tetrachloroethene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,3-Dichloropropane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
2-Hexanone	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
Dibromochloromethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromoethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Chlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1,1,2-Tetrachloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Ethylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
m,p-Xylene	ND	0.0022	EPA 8260C	5-31-18	5-31-18	
o-Xylene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Styrene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Bromoform	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
Isopropylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Bromobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1,2,2-Tetrachloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichloropropane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
n-Propylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
2-Chlorotoluene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
4-Chlorotoluene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,3,5-Trimethylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
tert-Butylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trimethylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
sec-Butylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
p-Isopropyltoluene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
n-Butylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromo-3-chloropropane	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.0054	EPA 8260C	5-31-18	5-31-18	
Naphthalene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	99	68-139				
Toluene-d8	102	79-128				
4-Bromofluorobenzene	103	71-132				



Date of Report: June 14, 2018
 Samples Submitted: May 24, 2018
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Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:		FL252-B4-0-1				
Laboratory ID:		05-259-12				
Dichlorodifluoromethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Chloromethane	ND	0.0052	EPA 8260C	5-31-18	5-31-18	
Vinyl Chloride	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Bromomethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Chloroethane	ND	0.0052	EPA 8260C	5-31-18	5-31-18	
Trichlorofluoromethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Acetone	0.014	0.0052	EPA 8260C	5-31-18	5-31-18	
Iodomethane	ND	0.0052	EPA 8260C	5-31-18	5-31-18	
Carbon Disulfide	ND	0.0014	EPA 8260C	5-31-18	5-31-18	
Methylene Chloride	ND	0.0052	EPA 8260C	5-31-18	5-31-18	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Vinyl Acetate	ND	0.0052	EPA 8260C	5-31-18	5-31-18	
2,2-Dichloropropane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
2-Butanone	ND	0.0052	EPA 8260C	5-31-18	5-31-18	
Bromochloromethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Chloroform	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Carbon Tetrachloride	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloropropene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Benzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Trichloroethene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloropropane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Dibromomethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Bromodichloromethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
2-Chloroethyl Vinyl Ether	ND	0.0052	EPA 8260C	5-31-18	5-31-18	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Methyl Isobutyl Ketone	ND	0.0052	EPA 8260C	5-31-18	5-31-18	
Toluene	ND	0.0052	EPA 8260C	5-31-18	5-31-18	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B4-0-1					
Laboratory ID:	05-259-12					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Tetrachloroethene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,3-Dichloropropane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
2-Hexanone	ND	0.0052	EPA 8260C	5-31-18	5-31-18	
Dibromochloromethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Chlorobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Ethylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
m,p-Xylene	ND	0.0021	EPA 8260C	5-31-18	5-31-18	
o-Xylene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Styrene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Bromoform	ND	0.0052	EPA 8260C	5-31-18	5-31-18	
Isopropylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Bromobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
n-Propylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
2-Chlorotoluene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
4-Chlorotoluene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,3,5-Trimethylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
tert-Butylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trimethylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
sec-Butylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
p-Isopropyltoluene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
n-Butylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromo-3-chloropropane	ND	0.0052	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.0052	EPA 8260C	5-31-18	5-31-18	
Naphthalene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	91	68-139				
Toluene-d8	90	79-128				
4-Bromofluorobenzene	86	71-132				



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Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-B4-2.5-3.5						
Laboratory ID: 05-259-13						
Dichlorodifluoromethane	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Chloromethane	ND	0.0048	EPA 8260C	5-31-18	5-31-18	
Vinyl Chloride	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Bromomethane	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Chloroethane	ND	0.0048	EPA 8260C	5-31-18	5-31-18	
Trichlorofluoromethane	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Acetone	0.0066	0.0048	EPA 8260C	5-31-18	5-31-18	
Iodomethane	ND	0.0048	EPA 8260C	5-31-18	5-31-18	
Carbon Disulfide	ND	0.0013	EPA 8260C	5-31-18	5-31-18	
Methylene Chloride	ND	0.0048	EPA 8260C	5-31-18	5-31-18	
(trans) 1,2-Dichloroethene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Methyl t-Butyl Ether	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethane	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Vinyl Acetate	ND	0.0048	EPA 8260C	5-31-18	5-31-18	
2,2-Dichloropropane	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
(cis) 1,2-Dichloroethene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
2-Butanone	ND	0.0048	EPA 8260C	5-31-18	5-31-18	
Bromochloromethane	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Chloroform	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
1,1,1-Trichloroethane	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Carbon Tetrachloride	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloropropene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Benzene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloroethane	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Trichloroethene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloropropane	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Dibromomethane	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Bromodichloromethane	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
2-Chloroethyl Vinyl Ether	ND	0.0048	EPA 8260C	5-31-18	5-31-18	
(cis) 1,3-Dichloropropene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Methyl Isobutyl Ketone	ND	0.0048	EPA 8260C	5-31-18	5-31-18	
Toluene	ND	0.0048	EPA 8260C	5-31-18	5-31-18	
(trans) 1,3-Dichloropropene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B4-2.5-3.5					
Laboratory ID:	05-259-13					
1,1,2-Trichloroethane	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Tetrachloroethene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
1,3-Dichloropropane	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
2-Hexanone	ND	0.0048	EPA 8260C	5-31-18	5-31-18	
Dibromochloromethane	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromoethane	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Chlorobenzene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
1,1,1,2-Tetrachloroethane	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Ethylbenzene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
m,p-Xylene	ND	0.0019	EPA 8260C	5-31-18	5-31-18	
o-Xylene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Styrene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Bromoform	ND	0.0048	EPA 8260C	5-31-18	5-31-18	
Isopropylbenzene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Bromobenzene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
1,1,2,2-Tetrachloroethane	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichloropropane	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
n-Propylbenzene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
2-Chlorotoluene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
4-Chlorotoluene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
1,3,5-Trimethylbenzene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
tert-Butylbenzene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trimethylbenzene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
sec-Butylbenzene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
p-Isopropyltoluene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
n-Butylbenzene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromo-3-chloropropane	ND	0.0048	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.0048	EPA 8260C	5-31-18	5-31-18	
Naphthalene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichlorobenzene	ND	0.00095	EPA 8260C	5-31-18	5-31-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	102	68-139				
Toluene-d8	108	79-128				
4-Bromofluorobenzene	106	71-132				



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 Project: 4082-039-01

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Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:		FL252-B4-5-6				
Laboratory ID:		05-259-14				
Dichlorodifluoromethane	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
Chloromethane	ND	0.0099	EPA 8260C	5-31-18	5-31-18	
Vinyl Chloride	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
Bromomethane	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
Chloroethane	ND	0.0099	EPA 8260C	5-31-18	5-31-18	
Trichlorofluoromethane	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethene	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
Acetone	0.40	0.0099	EPA 8260C	5-31-18	5-31-18	
Iodomethane	ND	0.0099	EPA 8260C	5-31-18	5-31-18	
Carbon Disulfide	ND	0.0028	EPA 8260C	5-31-18	5-31-18	
Methylene Chloride	ND	0.0099	EPA 8260C	5-31-18	5-31-18	
(trans) 1,2-Dichloroethene	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
Methyl t-Butyl Ether	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethane	0.0020	0.0020	EPA 8260C	5-31-18	5-31-18	
Vinyl Acetate	ND	0.0099	EPA 8260C	5-31-18	5-31-18	
2,2-Dichloropropane	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
(cis) 1,2-Dichloroethene	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
2-Butanone	0.025	0.0099	EPA 8260C	5-31-18	5-31-18	
Bromochloromethane	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
Chloroform	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
1,1,1-Trichloroethane	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
Carbon Tetrachloride	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloropropene	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
Benzene	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloroethane	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
Trichloroethene	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloropropane	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
Dibromomethane	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
Bromodichloromethane	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
2-Chloroethyl Vinyl Ether	ND	0.0099	EPA 8260C	5-31-18	5-31-18	
(cis) 1,3-Dichloropropene	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
Methyl Isobutyl Ketone	ND	0.0099	EPA 8260C	5-31-18	5-31-18	
Toluene	ND	0.0099	EPA 8260C	5-31-18	5-31-18	
(trans) 1,3-Dichloropropene	ND	0.0020	EPA 8260C	5-31-18	5-31-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B4-5-6					
Laboratory ID:	05-259-14					
1,1,2-Trichloroethane	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
Tetrachloroethene	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
1,3-Dichloropropane	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
2-Hexanone	ND	0.0099	EPA 8260C	5-31-18	5-31-18	
Dibromochloromethane	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromoethane	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
Chlorobenzene	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
1,1,1,2-Tetrachloroethane	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
Ethylbenzene	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
m,p-Xylene	ND	0.0040	EPA 8260C	5-31-18	5-31-18	
o-Xylene	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
Styrene	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
Bromoform	ND	0.0099	EPA 8260C	5-31-18	5-31-18	
Isopropylbenzene	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
Bromobenzene	ND	0.11	EPA 8260C	6-1-18	6-1-18	
1,1,2,2-Tetrachloroethane	ND	0.11	EPA 8260C	6-1-18	6-1-18	
1,2,3-Trichloropropane	ND	0.11	EPA 8260C	6-1-18	6-1-18	
n-Propylbenzene	ND	0.11	EPA 8260C	6-1-18	6-1-18	
2-Chlorotoluene	ND	0.11	EPA 8260C	6-1-18	6-1-18	
4-Chlorotoluene	ND	0.11	EPA 8260C	6-1-18	6-1-18	
1,3,5-Trimethylbenzene	ND	0.11	EPA 8260C	6-1-18	6-1-18	
tert-Butylbenzene	ND	0.11	EPA 8260C	6-1-18	6-1-18	
1,2,4-Trimethylbenzene	ND	0.11	EPA 8260C	6-1-18	6-1-18	
sec-Butylbenzene	ND	0.11	EPA 8260C	6-1-18	6-1-18	
1,3-Dichlorobenzene	ND	0.11	EPA 8260C	6-1-18	6-1-18	
p-Isopropyltoluene	ND	0.11	EPA 8260C	6-1-18	6-1-18	
1,4-Dichlorobenzene	ND	0.11	EPA 8260C	6-1-18	6-1-18	
1,2-Dichlorobenzene	ND	0.11	EPA 8260C	6-1-18	6-1-18	
n-Butylbenzene	ND	0.11	EPA 8260C	6-1-18	6-1-18	
1,2-Dibromo-3-chloropropane	ND	0.57	EPA 8260C	6-1-18	6-1-18	
1,2,4-Trichlorobenzene	ND	0.11	EPA 8260C	6-1-18	6-1-18	
Hexachlorobutadiene	ND	0.57	EPA 8260C	6-1-18	6-1-18	
Naphthalene	ND	0.11	EPA 8260C	6-1-18	6-1-18	
1,2,3-Trichlorobenzene	ND	0.11	EPA 8260C	6-1-18	6-1-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	86	68-139				
Toluene-d8	87	79-128				
4-Bromofluorobenzene	100	71-132				



Date of Report: June 14, 2018
 Samples Submitted: May 24, 2018
 Laboratory Reference: 1805-259
 Project: 4082-039-01

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Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-B4-7.5-8.5						
Laboratory ID: 05-259-16						
Dichlorodifluoromethane	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Chloromethane	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
Vinyl Chloride	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Bromomethane	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Chloroethane	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
Trichlorofluoromethane	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Acetone	0.050	0.0049	EPA 8260C	5-31-18	5-31-18	
Iodomethane	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
Carbon Disulfide	0.0018	0.0014	EPA 8260C	5-31-18	5-31-18	Y
Methylene Chloride	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
(trans) 1,2-Dichloroethene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Methyl t-Butyl Ether	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethane	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Vinyl Acetate	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
2,2-Dichloropropane	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
(cis) 1,2-Dichloroethene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
2-Butanone	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
Bromochloromethane	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Chloroform	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
1,1,1-Trichloroethane	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Carbon Tetrachloride	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloropropene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Benzene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloroethane	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Trichloroethene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloropropane	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Dibromomethane	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Bromodichloromethane	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
2-Chloroethyl Vinyl Ether	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
(cis) 1,3-Dichloropropene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Methyl Isobutyl Ketone	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
Toluene	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
(trans) 1,3-Dichloropropene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B4-7.5-8.5					
Laboratory ID:	05-259-16					
1,1,2-Trichloroethane	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Tetrachloroethene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
1,3-Dichloropropane	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
2-Hexanone	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
Dibromochloromethane	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromoethane	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Chlorobenzene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
1,1,1,2-Tetrachloroethane	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Ethylbenzene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
m,p-Xylene	ND	0.0019	EPA 8260C	5-31-18	5-31-18	
o-Xylene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Styrene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Bromoform	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
Isopropylbenzene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Bromobenzene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
1,1,2,2-Tetrachloroethane	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichloropropane	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
n-Propylbenzene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
2-Chlorotoluene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
4-Chlorotoluene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
1,3,5-Trimethylbenzene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
tert-Butylbenzene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trimethylbenzene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
sec-Butylbenzene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
p-Isopropyltoluene	0.0018	0.00097	EPA 8260C	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
n-Butylbenzene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromo-3-chloropropane	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.0049	EPA 8260C	5-31-18	5-31-18	
Naphthalene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichlorobenzene	ND	0.00097	EPA 8260C	5-31-18	5-31-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	100	68-139				
Toluene-d8	102	79-128				
4-Bromofluorobenzene	101	71-132				



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Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:		FL252-B4-10-11				
Laboratory ID:		05-259-17				
Dichlorodifluoromethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Chloromethane	ND	0.0055	EPA 8260C	5-31-18	5-31-18	
Vinyl Chloride	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Bromomethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Chloroethane	ND	0.0055	EPA 8260C	5-31-18	5-31-18	
Trichlorofluoromethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Acetone	ND	0.0055	EPA 8260C	5-31-18	5-31-18	
Iodomethane	ND	0.0055	EPA 8260C	5-31-18	5-31-18	
Carbon Disulfide	ND	0.0015	EPA 8260C	5-31-18	5-31-18	
Methylene Chloride	ND	0.0055	EPA 8260C	5-31-18	5-31-18	
(trans) 1,2-Dichloroethene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Methyl t-Butyl Ether	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Vinyl Acetate	ND	0.0055	EPA 8260C	5-31-18	5-31-18	
2,2-Dichloropropane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
(cis) 1,2-Dichloroethene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
2-Butanone	ND	0.0055	EPA 8260C	5-31-18	5-31-18	
Bromochloromethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Chloroform	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1,1-Trichloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Carbon Tetrachloride	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloropropene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Benzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Trichloroethene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloropropane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Dibromomethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Bromodichloromethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
2-Chloroethyl Vinyl Ether	ND	0.0055	EPA 8260C	5-31-18	5-31-18	
(cis) 1,3-Dichloropropene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Methyl Isobutyl Ketone	ND	0.0055	EPA 8260C	5-31-18	5-31-18	
Toluene	ND	0.0055	EPA 8260C	5-31-18	5-31-18	
(trans) 1,3-Dichloropropene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B4-10-11					
Laboratory ID:	05-259-17					
1,1,2-Trichloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Tetrachloroethene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,3-Dichloropropane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
2-Hexanone	ND	0.0055	EPA 8260C	5-31-18	5-31-18	
Dibromochloromethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromoethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Chlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1,1,2-Tetrachloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Ethylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
m,p-Xylene	ND	0.0022	EPA 8260C	5-31-18	5-31-18	
o-Xylene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Styrene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Bromoform	ND	0.0055	EPA 8260C	5-31-18	5-31-18	
Isopropylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Bromobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,1,2,2-Tetrachloroethane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichloropropane	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
n-Propylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
2-Chlorotoluene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
4-Chlorotoluene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,3,5-Trimethylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
tert-Butylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trimethylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
sec-Butylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
p-Isopropyltoluene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
n-Butylbenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromo-3-chloropropane	ND	0.0055	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.0055	EPA 8260C	5-31-18	5-31-18	
Naphthalene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichlorobenzene	ND	0.0011	EPA 8260C	5-31-18	5-31-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	94	68-139				
Toluene-d8	102	79-128				
4-Bromofluorobenzene	101	71-132				



Date of Report: June 14, 2018
 Samples Submitted: May 24, 2018
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 Project: 4082-039-01

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Matrix: Soil
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B3-0-1					
Laboratory ID:	05-259-06					
n-Nitrosodimethylamine	ND	0.035	EPA 8270D	5-31-18	5-31-18	
Pyridine	ND	0.35	EPA 8270D	5-31-18	5-31-18	
Phenol	ND	0.035	EPA 8270D	5-31-18	5-31-18	
Aniline	ND	0.18	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroethyl)ether	ND	0.035	EPA 8270D	5-31-18	5-31-18	
2-Chlorophenol	ND	0.035	EPA 8270D	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.035	EPA 8270D	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.035	EPA 8270D	5-31-18	5-31-18	
Benzyl alcohol	ND	0.18	EPA 8270D	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.035	EPA 8270D	5-31-18	5-31-18	
2-Methylphenol (o-Cresol)	ND	0.035	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroisopropyl)ether	ND	0.035	EPA 8270D	5-31-18	5-31-18	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.035	EPA 8270D	5-31-18	5-31-18	
n-Nitroso-di-n-propylamine	ND	0.035	EPA 8270D	5-31-18	5-31-18	
Hexachloroethane	ND	0.035	EPA 8270D	5-31-18	5-31-18	
Nitrobenzene	ND	0.035	EPA 8270D	5-31-18	5-31-18	
Isophorone	ND	0.035	EPA 8270D	5-31-18	5-31-18	
2-Nitrophenol	ND	0.035	EPA 8270D	5-31-18	5-31-18	
2,4-Dimethylphenol	ND	0.035	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroethoxy)methane	ND	0.035	EPA 8270D	5-31-18	5-31-18	
2,4-Dichlorophenol	ND	0.035	EPA 8270D	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.035	EPA 8270D	5-31-18	5-31-18	
Naphthalene	0.0074	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
4-Chloroaniline	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.035	EPA 8270D	5-31-18	5-31-18	
4-Chloro-3-methylphenol	ND	0.035	EPA 8270D	5-31-18	5-31-18	
2-Methylnaphthalene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
1-Methylnaphthalene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
Hexachlorocyclopentadiene	ND	0.035	EPA 8270D	5-31-18	5-31-18	
2,4,6-Trichlorophenol	ND	0.035	EPA 8270D	5-31-18	5-31-18	
2,3-Dichloroaniline	ND	0.035	EPA 8270D	5-31-18	5-31-18	
2,4,5-Trichlorophenol	ND	0.035	EPA 8270D	5-31-18	5-31-18	
2-Chloronaphthalene	ND	0.035	EPA 8270D	5-31-18	5-31-18	
2-Nitroaniline	ND	0.035	EPA 8270D	5-31-18	5-31-18	
1,4-Dinitrobenzene	ND	0.035	EPA 8270D	5-31-18	5-31-18	
Dimethylphthalate	ND	0.035	EPA 8270D	5-31-18	5-31-18	
1,3-Dinitrobenzene	ND	0.035	EPA 8270D	5-31-18	5-31-18	
2,6-Dinitrotoluene	ND	0.035	EPA 8270D	5-31-18	5-31-18	
1,2-Dinitrobenzene	ND	0.035	EPA 8270D	5-31-18	5-31-18	
Acenaphthylene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
3-Nitroaniline	ND	0.035	EPA 8270D	5-31-18	5-31-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B3-0-1					
Laboratory ID:	05-259-06					
2,4-Dinitrophenol	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Acenaphthene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
4-Nitrophenol	ND	0.035	EPA 8270D	5-31-18	5-31-18	
2,4-Dinitrotoluene	ND	0.035	EPA 8270D	5-31-18	5-31-18	
Dibenzofuran	ND	0.035	EPA 8270D	5-31-18	5-31-18	
2,3,5,6-Tetrachlorophenol	ND	0.035	EPA 8270D	5-31-18	5-31-18	
2,3,4,6-Tetrachlorophenol	ND	0.035	EPA 8270D	5-31-18	5-31-18	
Diethylphthalate	ND	0.18	EPA 8270D	5-31-18	5-31-18	
4-Chlorophenyl-phenylether	ND	0.035	EPA 8270D	5-31-18	5-31-18	
4-Nitroaniline	ND	0.035	EPA 8270D	5-31-18	5-31-18	
Fluorene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
4,6-Dinitro-2-methylphenol	ND	0.18	EPA 8270D	5-31-18	5-31-18	
n-Nitrosodiphenylamine	ND	0.035	EPA 8270D	5-31-18	5-31-18	
1,2-Diphenylhydrazine	ND	0.035	EPA 8270D	5-31-18	5-31-18	
4-Bromophenyl-phenylether	ND	0.035	EPA 8270D	5-31-18	5-31-18	
Hexachlorobenzene	ND	0.035	EPA 8270D	5-31-18	5-31-18	
Pentachlorophenol	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Phenanthrene	0.10	0.035	EPA 8270D	5-31-18	5-31-18	
Anthracene	0.026	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
Carbazole	ND	0.035	EPA 8270D	5-31-18	5-31-18	
Di-n-butylphthalate	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Fluoranthene	0.14	0.035	EPA 8270D	5-31-18	5-31-18	
Benzidine	ND	0.35	EPA 8270D	5-31-18	5-31-18	
Pyrene	0.11	0.035	EPA 8270D	5-31-18	5-31-18	
Butylbenzylphthalate	ND	0.18	EPA 8270D	5-31-18	5-31-18	
bis-2-Ethylhexyladipate	ND	0.18	EPA 8270D	5-31-18	5-31-18	
3,3'-Dichlorobenzidine	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Benzo[a]anthracene	0.060	0.035	EPA 8270D	5-31-18	5-31-18	
Chrysene	0.065	0.035	EPA 8270D	5-31-18	5-31-18	
bis(2-Ethylhexyl)phthalate	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Di-n-octylphthalate	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Benzo[b]fluoranthene	0.076	0.035	EPA 8270D	5-31-18	5-31-18	
Benzo(j,k)fluoranthene	0.025	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[a]pyrene	0.050	0.035	EPA 8270D	5-31-18	5-31-18	
Indeno[1,2,3-cd]pyrene	0.038	0.035	EPA 8270D	5-31-18	5-31-18	
Dibenz[a,h]anthracene	ND	0.0071	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[g,h,i]perylene	0.041	0.035	EPA 8270D	5-31-18	5-31-18	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	19	19 - 103				
Phenol-d6	29	30 - 103				
Nitrobenzene-d5	25	27 - 105				
2-Fluorobiphenyl	50	36 - 102				
2,4,6-Tribromophenol	69	33 - 110				
Terphenyl-d14	54	38 - 108				



Date of Report: June 14, 2018
 Samples Submitted: May 24, 2018
 Laboratory Reference: 1805-259
 Project: 4082-039-01

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Matrix: Soil
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B3-2.5-3.5					
Laboratory ID:	05-259-07					
n-Nitrosodimethylamine	ND	0.038	EPA 8270D	5-31-18	6-1-18	
Pyridine	ND	0.38	EPA 8270D	5-31-18	6-1-18	
Phenol	ND	0.038	EPA 8270D	5-31-18	6-1-18	
Aniline	ND	0.19	EPA 8270D	5-31-18	6-1-18	
bis(2-Chloroethyl)ether	ND	0.038	EPA 8270D	5-31-18	6-1-18	
2-Chlorophenol	ND	0.038	EPA 8270D	5-31-18	6-1-18	
1,3-Dichlorobenzene	ND	0.038	EPA 8270D	5-31-18	6-1-18	
1,4-Dichlorobenzene	ND	0.038	EPA 8270D	5-31-18	6-1-18	
Benzyl alcohol	ND	0.19	EPA 8270D	5-31-18	6-1-18	
1,2-Dichlorobenzene	ND	0.038	EPA 8270D	5-31-18	6-1-18	
2-Methylphenol (o-Cresol)	ND	0.038	EPA 8270D	5-31-18	6-1-18	
bis(2-Chloroisopropyl)ether	ND	0.038	EPA 8270D	5-31-18	6-1-18	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.038	EPA 8270D	5-31-18	6-1-18	
n-Nitroso-di-n-propylamine	ND	0.038	EPA 8270D	5-31-18	6-1-18	
Hexachloroethane	ND	0.038	EPA 8270D	5-31-18	6-1-18	
Nitrobenzene	ND	0.038	EPA 8270D	5-31-18	6-1-18	
Isophorone	ND	0.038	EPA 8270D	5-31-18	6-1-18	
2-Nitrophenol	ND	0.038	EPA 8270D	5-31-18	6-1-18	
2,4-Dimethylphenol	ND	0.038	EPA 8270D	5-31-18	6-1-18	
bis(2-Chloroethoxy)methane	ND	0.038	EPA 8270D	5-31-18	6-1-18	
2,4-Dichlorophenol	ND	0.038	EPA 8270D	5-31-18	6-1-18	
1,2,4-Trichlorobenzene	ND	0.038	EPA 8270D	5-31-18	6-1-18	
Naphthalene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
4-Chloroaniline	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Hexachlorobutadiene	ND	0.038	EPA 8270D	5-31-18	6-1-18	
4-Chloro-3-methylphenol	ND	0.038	EPA 8270D	5-31-18	6-1-18	
2-Methylnaphthalene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
1-Methylnaphthalene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Hexachlorocyclopentadiene	ND	0.038	EPA 8270D	5-31-18	6-1-18	
2,4,6-Trichlorophenol	ND	0.038	EPA 8270D	5-31-18	6-1-18	
2,3-Dichloroaniline	ND	0.038	EPA 8270D	5-31-18	6-1-18	
2,4,5-Trichlorophenol	ND	0.038	EPA 8270D	5-31-18	6-1-18	
2-Chloronaphthalene	ND	0.038	EPA 8270D	5-31-18	6-1-18	
2-Nitroaniline	ND	0.038	EPA 8270D	5-31-18	6-1-18	
1,4-Dinitrobenzene	ND	0.038	EPA 8270D	5-31-18	6-1-18	
Dimethylphthalate	ND	0.038	EPA 8270D	5-31-18	6-1-18	
1,3-Dinitrobenzene	ND	0.038	EPA 8270D	5-31-18	6-1-18	
2,6-Dinitrotoluene	ND	0.038	EPA 8270D	5-31-18	6-1-18	
1,2-Dinitrobenzene	ND	0.038	EPA 8270D	5-31-18	6-1-18	
Acenaphthylene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
3-Nitroaniline	ND	0.038	EPA 8270D	5-31-18	6-1-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-B3-2.5-3.5						
Laboratory ID: 05-259-07						
2,4-Dinitrophenol	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Acenaphthene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
4-Nitrophenol	ND	0.038	EPA 8270D	5-31-18	6-1-18	
2,4-Dinitrotoluene	ND	0.038	EPA 8270D	5-31-18	6-1-18	
Dibenzofuran	ND	0.038	EPA 8270D	5-31-18	6-1-18	
2,3,5,6-Tetrachlorophenol	ND	0.038	EPA 8270D	5-31-18	6-1-18	
2,3,4,6-Tetrachlorophenol	ND	0.038	EPA 8270D	5-31-18	6-1-18	
Diethylphthalate	ND	0.19	EPA 8270D	5-31-18	6-1-18	
4-Chlorophenyl-phenylether	ND	0.038	EPA 8270D	5-31-18	6-1-18	
4-Nitroaniline	ND	0.038	EPA 8270D	5-31-18	6-1-18	
Fluorene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
4,6-Dinitro-2-methylphenol	ND	0.19	EPA 8270D	5-31-18	6-1-18	
n-Nitrosodiphenylamine	ND	0.038	EPA 8270D	5-31-18	6-1-18	
1,2-Diphenylhydrazine	ND	0.038	EPA 8270D	5-31-18	6-1-18	
4-Bromophenyl-phenylether	ND	0.038	EPA 8270D	5-31-18	6-1-18	
Hexachlorobenzene	ND	0.038	EPA 8270D	5-31-18	6-1-18	
Pentachlorophenol	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Phenanthrene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Anthracene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Carbazole	ND	0.038	EPA 8270D	5-31-18	6-1-18	
Di-n-butylphthalate	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Fluoranthene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Benzidine	ND	0.38	EPA 8270D	5-31-18	6-1-18	
Pyrene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Butylbenzylphthalate	ND	0.19	EPA 8270D	5-31-18	6-1-18	
bis-2-Ethylhexyladipate	ND	0.19	EPA 8270D	5-31-18	6-1-18	
3,3'-Dichlorobenzidine	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Benzo[a]anthracene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Chrysene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
bis(2-Ethylhexyl)phthalate	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Di-n-octylphthalate	ND	0.19	EPA 8270D	5-31-18	6-1-18	
Benzo[b]fluoranthene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo(j,k)fluoranthene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[a]pyrene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Indeno[1,2,3-cd]pyrene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Dibenz[a,h]anthracene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[g,h,i]perylene	ND	0.0075	EPA 8270D/SIM	5-31-18	6-1-18	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	43	19 - 103				
Phenol-d6	49	30 - 103				
Nitrobenzene-d5	46	27 - 105				
2-Fluorobiphenyl	57	36 - 102				
2,4,6-Tribromophenol	74	33 - 110				
Terphenyl-d14	65	38 - 108				



Date of Report: June 14, 2018
 Samples Submitted: May 24, 2018
 Laboratory Reference: 1805-259
 Project: 4082-039-01

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Matrix: Soil
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B3-10-11					
Laboratory ID:	05-259-10					
n-Nitrosodimethylamine	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Pyridine	ND	0.36	EPA 8270D	5-31-18	6-4-18	
Phenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Aniline	ND	0.18	EPA 8270D	5-31-18	6-4-18	
bis(2-Chloroethyl)ether	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2-Chlorophenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
1,3-Dichlorobenzene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
1,4-Dichlorobenzene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Benzyl alcohol	ND	0.18	EPA 8270D	5-31-18	6-4-18	
1,2-Dichlorobenzene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2-Methylphenol (o-Cresol)	ND	0.036	EPA 8270D	5-31-18	6-4-18	
bis(2-Chloroisopropyl)ether	ND	0.036	EPA 8270D	5-31-18	6-4-18	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.036	EPA 8270D	5-31-18	6-4-18	
n-Nitroso-di-n-propylamine	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Hexachloroethane	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Nitrobenzene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Isophorone	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2-Nitrophenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2,4-Dimethylphenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
bis(2-Chloroethoxy)methane	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2,4-Dichlorophenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
1,2,4-Trichlorobenzene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Naphthalene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
4-Chloroaniline	ND	0.18	EPA 8270D	5-31-18	6-4-18	
Hexachlorobutadiene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
4-Chloro-3-methylphenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2-Methylnaphthalene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
1-Methylnaphthalene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Hexachlorocyclopentadiene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2,4,6-Trichlorophenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2,3-Dichloroaniline	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2,4,5-Trichlorophenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2-Chloronaphthalene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2-Nitroaniline	ND	0.036	EPA 8270D	5-31-18	6-4-18	
1,4-Dinitrobenzene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Dimethylphthalate	ND	0.036	EPA 8270D	5-31-18	6-4-18	
1,3-Dinitrobenzene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2,6-Dinitrotoluene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
1,2-Dinitrobenzene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Acenaphthylene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
3-Nitroaniline	ND	0.036	EPA 8270D	5-31-18	6-4-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B3-10-11					
Laboratory ID:	05-259-10					
2,4-Dinitrophenol	ND	0.18	EPA 8270D	5-31-18	6-4-18	
Acenaphthene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
4-Nitrophenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2,4-Dinitrotoluene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Dibenzofuran	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2,3,5,6-Tetrachlorophenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2,3,4,6-Tetrachlorophenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Diethylphthalate	ND	0.18	EPA 8270D	5-31-18	6-4-18	
4-Chlorophenyl-phenylether	ND	0.036	EPA 8270D	5-31-18	6-4-18	
4-Nitroaniline	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Fluorene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
4,6-Dinitro-2-methylphenol	ND	0.18	EPA 8270D	5-31-18	6-4-18	
n-Nitrosodiphenylamine	ND	0.036	EPA 8270D	5-31-18	6-4-18	
1,2-Diphenylhydrazine	ND	0.036	EPA 8270D	5-31-18	6-4-18	
4-Bromophenyl-phenylether	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Hexachlorobenzene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Pentachlorophenol	ND	0.18	EPA 8270D	5-31-18	6-4-18	
Phenanthrene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Anthracene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Carbazole	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Di-n-butylphthalate	ND	0.18	EPA 8270D	5-31-18	6-4-18	
Fluoranthene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Benzidine	ND	0.36	EPA 8270D	5-31-18	6-4-18	
Pyrene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Butylbenzylphthalate	ND	0.18	EPA 8270D	5-31-18	6-4-18	
bis-2-Ethylhexyladipate	ND	0.18	EPA 8270D	5-31-18	6-4-18	
3,3'-Dichlorobenzidine	ND	0.18	EPA 8270D	5-31-18	6-4-18	
Benzo[a]anthracene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Chrysene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
bis(2-Ethylhexyl)phthalate	ND	0.18	EPA 8270D	5-31-18	6-4-18	
Di-n-octylphthalate	ND	0.18	EPA 8270D	5-31-18	6-4-18	
Benzo[b]fluoranthene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo(j,k)fluoranthene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[a]pyrene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Indeno[1,2,3-cd]pyrene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Dibenz[a,h]anthracene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[g,h,i]perylene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	46	19 - 103				
Phenol-d6	49	30 - 103				
Nitrobenzene-d5	46	27 - 105				
2-Fluorobiphenyl	52	36 - 102				
2,4,6-Tribromophenol	71	33 - 110				
Terphenyl-d14	60	38 - 108				



Date of Report: June 14, 2018
 Samples Submitted: May 24, 2018
 Laboratory Reference: 1805-259
 Project: 4082-039-01

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Matrix: Soil
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B4-0-1					
Laboratory ID:	05-259-12					
n-Nitrosodimethylamine	ND	0.035	EPA 8270D	5-31-18	6-4-18	
Pyridine	ND	0.35	EPA 8270D	5-31-18	6-4-18	
Phenol	ND	0.035	EPA 8270D	5-31-18	6-4-18	
Aniline	ND	0.17	EPA 8270D	5-31-18	6-4-18	
bis(2-Chloroethyl)ether	ND	0.035	EPA 8270D	5-31-18	6-4-18	
2-Chlorophenol	ND	0.035	EPA 8270D	5-31-18	6-4-18	
1,3-Dichlorobenzene	ND	0.035	EPA 8270D	5-31-18	6-4-18	
1,4-Dichlorobenzene	ND	0.035	EPA 8270D	5-31-18	6-4-18	
Benzyl alcohol	ND	0.17	EPA 8270D	5-31-18	6-4-18	
1,2-Dichlorobenzene	ND	0.035	EPA 8270D	5-31-18	6-4-18	
2-Methylphenol (o-Cresol)	ND	0.035	EPA 8270D	5-31-18	6-4-18	
bis(2-Chloroisopropyl)ether	ND	0.035	EPA 8270D	5-31-18	6-4-18	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.035	EPA 8270D	5-31-18	6-4-18	
n-Nitroso-di-n-propylamine	ND	0.035	EPA 8270D	5-31-18	6-4-18	
Hexachloroethane	ND	0.035	EPA 8270D	5-31-18	6-4-18	
Nitrobenzene	ND	0.035	EPA 8270D	5-31-18	6-4-18	
Isophorone	ND	0.035	EPA 8270D	5-31-18	6-4-18	
2-Nitrophenol	ND	0.035	EPA 8270D	5-31-18	6-4-18	
2,4-Dimethylphenol	ND	0.035	EPA 8270D	5-31-18	6-4-18	
bis(2-Chloroethoxy)methane	ND	0.035	EPA 8270D	5-31-18	6-4-18	
2,4-Dichlorophenol	ND	0.035	EPA 8270D	5-31-18	6-4-18	
1,2,4-Trichlorobenzene	ND	0.035	EPA 8270D	5-31-18	6-4-18	
Naphthalene	ND	0.0070	EPA 8270D/SIM	5-31-18	6-1-18	
4-Chloroaniline	ND	0.17	EPA 8270D	5-31-18	6-4-18	
Hexachlorobutadiene	ND	0.035	EPA 8270D	5-31-18	6-4-18	
4-Chloro-3-methylphenol	ND	0.035	EPA 8270D	5-31-18	6-4-18	
2-Methylnaphthalene	ND	0.0070	EPA 8270D/SIM	5-31-18	6-1-18	
1-Methylnaphthalene	ND	0.0070	EPA 8270D/SIM	5-31-18	6-1-18	
Hexachlorocyclopentadiene	ND	0.035	EPA 8270D	5-31-18	6-4-18	
2,4,6-Trichlorophenol	ND	0.035	EPA 8270D	5-31-18	6-4-18	
2,3-Dichloroaniline	ND	0.035	EPA 8270D	5-31-18	6-4-18	
2,4,5-Trichlorophenol	ND	0.035	EPA 8270D	5-31-18	6-4-18	
2-Chloronaphthalene	ND	0.035	EPA 8270D	5-31-18	6-4-18	
2-Nitroaniline	ND	0.035	EPA 8270D	5-31-18	6-4-18	
1,4-Dinitrobenzene	ND	0.035	EPA 8270D	5-31-18	6-4-18	
Dimethylphthalate	ND	0.035	EPA 8270D	5-31-18	6-4-18	
1,3-Dinitrobenzene	ND	0.035	EPA 8270D	5-31-18	6-4-18	
2,6-Dinitrotoluene	ND	0.035	EPA 8270D	5-31-18	6-4-18	
1,2-Dinitrobenzene	ND	0.035	EPA 8270D	5-31-18	6-4-18	
Acenaphthylene	ND	0.0070	EPA 8270D/SIM	5-31-18	6-1-18	
3-Nitroaniline	ND	0.035	EPA 8270D	5-31-18	6-4-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B4-0-1					
Laboratory ID:	05-259-12					
2,4-Dinitrophenol	ND	0.17	EPA 8270D	5-31-18	6-4-18	
Acenaphthene	ND	0.0070	EPA 8270D/SIM	5-31-18	6-1-18	
4-Nitrophenol	ND	0.035	EPA 8270D	5-31-18	6-4-18	
2,4-Dinitrotoluene	ND	0.035	EPA 8270D	5-31-18	6-4-18	
Dibenzofuran	ND	0.035	EPA 8270D	5-31-18	6-4-18	
2,3,5,6-Tetrachlorophenol	ND	0.035	EPA 8270D	5-31-18	6-4-18	
2,3,4,6-Tetrachlorophenol	ND	0.035	EPA 8270D	5-31-18	6-4-18	
Diethylphthalate	ND	0.17	EPA 8270D	5-31-18	6-4-18	
4-Chlorophenyl-phenylether	ND	0.035	EPA 8270D	5-31-18	6-4-18	
4-Nitroaniline	ND	0.035	EPA 8270D	5-31-18	6-4-18	
Fluorene	ND	0.0070	EPA 8270D/SIM	5-31-18	6-1-18	
4,6-Dinitro-2-methylphenol	ND	0.17	EPA 8270D	5-31-18	6-4-18	
n-Nitrosodiphenylamine	ND	0.035	EPA 8270D	5-31-18	6-4-18	
1,2-Diphenylhydrazine	ND	0.035	EPA 8270D	5-31-18	6-4-18	
4-Bromophenyl-phenylether	ND	0.035	EPA 8270D	5-31-18	6-4-18	
Hexachlorobenzene	ND	0.035	EPA 8270D	5-31-18	6-4-18	
Pentachlorophenol	ND	0.17	EPA 8270D	5-31-18	6-4-18	
Phenanthrene	0.025	0.0070	EPA 8270D/SIM	5-31-18	6-1-18	
Anthracene	0.014	0.0070	EPA 8270D/SIM	5-31-18	6-1-18	
Carbazole	ND	0.035	EPA 8270D	5-31-18	6-4-18	
Di-n-butylphthalate	ND	0.17	EPA 8270D	5-31-18	6-4-18	
Fluoranthene	0.050	0.035	EPA 8270D	5-31-18	6-4-18	
Benzidine	ND	0.35	EPA 8270D	5-31-18	6-4-18	
Pyrene	0.043	0.035	EPA 8270D	5-31-18	6-4-18	
Butylbenzylphthalate	ND	0.17	EPA 8270D	5-31-18	6-4-18	
bis-2-Ethylhexyladipate	ND	0.17	EPA 8270D	5-31-18	6-4-18	
3,3'-Dichlorobenzidine	ND	0.17	EPA 8270D	5-31-18	6-4-18	
Benzo[a]anthracene	0.016	0.0070	EPA 8270D/SIM	5-31-18	6-1-18	
Chrysene	0.027	0.0070	EPA 8270D/SIM	5-31-18	6-1-18	
bis(2-Ethylhexyl)phthalate	ND	0.17	EPA 8270D	5-31-18	6-4-18	
Di-n-octylphthalate	ND	0.17	EPA 8270D	5-31-18	6-4-18	
Benzo[b]fluoranthene	0.040	0.035	EPA 8270D	5-31-18	6-4-18	
Benzo(j,k)fluoranthene	0.013	0.0070	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[a]pyrene	0.017	0.0070	EPA 8270D/SIM	5-31-18	6-1-18	
Indeno[1,2,3-cd]pyrene	0.019	0.0070	EPA 8270D/SIM	5-31-18	6-1-18	
Dibenz[a,h]anthracene	ND	0.0070	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[g,h,i]perylene	0.017	0.0070	EPA 8270D/SIM	5-31-18	6-1-18	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	29	19 - 103				
Phenol-d6	40	30 - 103				
Nitrobenzene-d5	34	27 - 105				
2-Fluorobiphenyl	50	36 - 102				
2,4,6-Tribromophenol	77	33 - 110				
Terphenyl-d14	59	38 - 108				



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Matrix: Soil
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B4-5-6					
Laboratory ID:	05-259-14					
n-Nitrosodimethylamine	ND	1.1	EPA 8270D	5-31-18	5-31-18	
Pyridine	ND	1.1	EPA 8270D	5-31-18	5-31-18	
Phenol	ND	1.1	EPA 8270D	5-31-18	5-31-18	
Aniline	ND	5.6	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroethyl)ether	ND	1.1	EPA 8270D	5-31-18	5-31-18	
2-Chlorophenol	ND	1.1	EPA 8270D	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	1.1	EPA 8270D	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	1.1	EPA 8270D	5-31-18	5-31-18	
Benzyl alcohol	ND	5.6	EPA 8270D	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	1.1	EPA 8270D	5-31-18	5-31-18	
2-Methylphenol (o-Cresol)	ND	1.1	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroisopropyl)ether	ND	1.1	EPA 8270D	5-31-18	5-31-18	
(3+4)-Methylphenol (m,p-Cresol)	1.1	1.1	EPA 8270D	5-31-18	5-31-18	
n-Nitroso-di-n-propylamine	ND	1.1	EPA 8270D	5-31-18	5-31-18	
Hexachloroethane	ND	1.1	EPA 8270D	5-31-18	5-31-18	
Nitrobenzene	ND	1.1	EPA 8270D	5-31-18	5-31-18	
Isophorone	ND	1.1	EPA 8270D	5-31-18	5-31-18	
2-Nitrophenol	ND	1.1	EPA 8270D	5-31-18	5-31-18	
2,4-Dimethylphenol	ND	1.1	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroethoxy)methane	ND	1.1	EPA 8270D	5-31-18	5-31-18	
2,4-Dichlorophenol	ND	1.1	EPA 8270D	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	1.1	EPA 8270D	5-31-18	5-31-18	
Naphthalene	0.11	0.045	EPA 8270D/SIM	5-31-18	6-1-18	
4-Chloroaniline	ND	5.6	EPA 8270D	5-31-18	5-31-18	
Hexachlorobutadiene	ND	1.1	EPA 8270D	5-31-18	5-31-18	
4-Chloro-3-methylphenol	ND	1.1	EPA 8270D	5-31-18	5-31-18	
2-Methylnaphthalene	ND	0.045	EPA 8270D/SIM	5-31-18	6-1-18	
1-Methylnaphthalene	ND	0.045	EPA 8270D/SIM	5-31-18	6-1-18	
Hexachlorocyclopentadiene	ND	1.1	EPA 8270D	5-31-18	5-31-18	
2,4,6-Trichlorophenol	ND	1.1	EPA 8270D	5-31-18	5-31-18	
2,3-Dichloroaniline	ND	1.1	EPA 8270D	5-31-18	5-31-18	
2,4,5-Trichlorophenol	ND	1.1	EPA 8270D	5-31-18	5-31-18	
2-Chloronaphthalene	ND	1.1	EPA 8270D	5-31-18	5-31-18	
2-Nitroaniline	ND	1.1	EPA 8270D	5-31-18	5-31-18	
1,4-Dinitrobenzene	ND	1.1	EPA 8270D	5-31-18	5-31-18	
Dimethylphthalate	ND	1.1	EPA 8270D	5-31-18	5-31-18	
1,3-Dinitrobenzene	ND	1.1	EPA 8270D	5-31-18	5-31-18	
2,6-Dinitrotoluene	ND	1.1	EPA 8270D	5-31-18	5-31-18	
1,2-Dinitrobenzene	ND	1.1	EPA 8270D	5-31-18	5-31-18	
Acenaphthylene	ND	0.045	EPA 8270D/SIM	5-31-18	6-1-18	
3-Nitroaniline	ND	1.1	EPA 8270D	5-31-18	5-31-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B4-5-6					
Laboratory ID:	05-259-14					
2,4-Dinitrophenol	ND	5.6	EPA 8270D	5-31-18	5-31-18	
Acenaphthene	ND	0.045	EPA 8270D/SIM	5-31-18	6-1-18	
4-Nitrophenol	ND	1.1	EPA 8270D	5-31-18	5-31-18	
2,4-Dinitrotoluene	ND	1.1	EPA 8270D	5-31-18	5-31-18	
Dibenzofuran	ND	1.1	EPA 8270D	5-31-18	5-31-18	
2,3,5,6-Tetrachlorophenol	ND	1.1	EPA 8270D	5-31-18	5-31-18	
2,3,4,6-Tetrachlorophenol	ND	1.1	EPA 8270D	5-31-18	5-31-18	
Diethylphthalate	ND	5.6	EPA 8270D	5-31-18	5-31-18	
4-Chlorophenyl-phenylether	ND	1.1	EPA 8270D	5-31-18	5-31-18	
4-Nitroaniline	ND	1.1	EPA 8270D	5-31-18	5-31-18	
Fluorene	ND	0.045	EPA 8270D/SIM	5-31-18	6-1-18	
4,6-Dinitro-2-methylphenol	ND	5.6	EPA 8270D	5-31-18	5-31-18	
n-Nitrosodiphenylamine	ND	1.1	EPA 8270D	5-31-18	5-31-18	
1,2-Diphenylhydrazine	ND	1.1	EPA 8270D	5-31-18	5-31-18	
4-Bromophenyl-phenylether	ND	1.1	EPA 8270D	5-31-18	5-31-18	
Hexachlorobenzene	ND	1.1	EPA 8270D	5-31-18	5-31-18	
Pentachlorophenol	ND	5.6	EPA 8270D	5-31-18	5-31-18	
Phenanthrene	0.072	0.045	EPA 8270D/SIM	5-31-18	6-1-18	
Anthracene	ND	0.045	EPA 8270D/SIM	5-31-18	6-1-18	
Carbazole	ND	1.1	EPA 8270D	5-31-18	5-31-18	
Di-n-butylphthalate	ND	5.6	EPA 8270D	5-31-18	5-31-18	
Fluoranthene	ND	0.045	EPA 8270D/SIM	5-31-18	6-1-18	
Benzidine	ND	11	EPA 8270D	5-31-18	5-31-18	
Pyrene	ND	0.045	EPA 8270D/SIM	5-31-18	6-1-18	
Butylbenzylphthalate	ND	5.6	EPA 8270D	5-31-18	5-31-18	
bis-2-Ethylhexyladipate	ND	5.6	EPA 8270D	5-31-18	5-31-18	
3,3'-Dichlorobenzidine	ND	5.6	EPA 8270D	5-31-18	5-31-18	
Benzo[a]anthracene	ND	0.045	EPA 8270D/SIM	5-31-18	6-1-18	
Chrysene	ND	0.045	EPA 8270D/SIM	5-31-18	6-1-18	
bis(2-Ethylhexyl)phthalate	ND	5.6	EPA 8270D	5-31-18	5-31-18	
Di-n-octylphthalate	ND	5.6	EPA 8270D	5-31-18	5-31-18	
Benzo[b]fluoranthene	ND	0.045	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo(j,k)fluoranthene	ND	0.045	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[a]pyrene	ND	0.045	EPA 8270D/SIM	5-31-18	6-1-18	
Indeno[1,2,3-cd]pyrene	ND	0.045	EPA 8270D/SIM	5-31-18	6-1-18	
Dibenz[a,h]anthracene	ND	0.045	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[g,h,i]perylene	ND	0.045	EPA 8270D/SIM	5-31-18	6-1-18	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	32	19 - 103				
Phenol-d6	44	30 - 103				
Nitrobenzene-d5	45	27 - 105				
2-Fluorobiphenyl	64	36 - 102				
2,4,6-Tribromophenol	71	33 - 110				
Terphenyl-d14	67	38 - 108				



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Matrix: Soil
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B4-7.5-8.5					
Laboratory ID:	05-259-16					
n-Nitrosodimethylamine	ND	0.040	EPA 8270D	5-31-18	6-4-18	
Pyridine	ND	0.40	EPA 8270D	5-31-18	6-4-18	
Phenol	ND	0.040	EPA 8270D	5-31-18	6-4-18	
Aniline	ND	0.20	EPA 8270D	5-31-18	6-4-18	
bis(2-Chloroethyl)ether	ND	0.040	EPA 8270D	5-31-18	6-4-18	
2-Chlorophenol	ND	0.040	EPA 8270D	5-31-18	6-4-18	
1,3-Dichlorobenzene	ND	0.040	EPA 8270D	5-31-18	6-4-18	
1,4-Dichlorobenzene	ND	0.040	EPA 8270D	5-31-18	6-4-18	
Benzyl alcohol	ND	0.20	EPA 8270D	5-31-18	6-4-18	
1,2-Dichlorobenzene	ND	0.040	EPA 8270D	5-31-18	6-4-18	
2-Methylphenol (o-Cresol)	ND	0.040	EPA 8270D	5-31-18	6-4-18	
bis(2-Chloroisopropyl)ether	ND	0.040	EPA 8270D	5-31-18	6-4-18	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.040	EPA 8270D	5-31-18	6-4-18	
n-Nitroso-di-n-propylamine	ND	0.040	EPA 8270D	5-31-18	6-4-18	
Hexachloroethane	ND	0.040	EPA 8270D	5-31-18	6-4-18	
Nitrobenzene	ND	0.040	EPA 8270D	5-31-18	6-4-18	
Isophorone	ND	0.040	EPA 8270D	5-31-18	6-4-18	
2-Nitrophenol	ND	0.040	EPA 8270D	5-31-18	6-4-18	
2,4-Dimethylphenol	ND	0.040	EPA 8270D	5-31-18	6-4-18	
bis(2-Chloroethoxy)methane	ND	0.040	EPA 8270D	5-31-18	6-4-18	
2,4-Dichlorophenol	ND	0.040	EPA 8270D	5-31-18	6-4-18	
1,2,4-Trichlorobenzene	ND	0.040	EPA 8270D	5-31-18	6-4-18	
Naphthalene	ND	0.0079	EPA 8270D/SIM	5-31-18	6-1-18	
4-Chloroaniline	ND	0.20	EPA 8270D	5-31-18	6-4-18	
Hexachlorobutadiene	ND	0.040	EPA 8270D	5-31-18	6-4-18	
4-Chloro-3-methylphenol	ND	0.040	EPA 8270D	5-31-18	6-4-18	
2-Methylnaphthalene	ND	0.0079	EPA 8270D/SIM	5-31-18	6-1-18	
1-Methylnaphthalene	ND	0.0079	EPA 8270D/SIM	5-31-18	6-1-18	
Hexachlorocyclopentadiene	ND	0.040	EPA 8270D	5-31-18	6-4-18	
2,4,6-Trichlorophenol	ND	0.040	EPA 8270D	5-31-18	6-4-18	
2,3-Dichloroaniline	ND	0.040	EPA 8270D	5-31-18	6-4-18	
2,4,5-Trichlorophenol	ND	0.040	EPA 8270D	5-31-18	6-4-18	
2-Chloronaphthalene	ND	0.040	EPA 8270D	5-31-18	6-4-18	
2-Nitroaniline	ND	0.040	EPA 8270D	5-31-18	6-4-18	
1,4-Dinitrobenzene	ND	0.040	EPA 8270D	5-31-18	6-4-18	
Dimethylphthalate	ND	0.040	EPA 8270D	5-31-18	6-4-18	
1,3-Dinitrobenzene	ND	0.040	EPA 8270D	5-31-18	6-4-18	
2,6-Dinitrotoluene	ND	0.040	EPA 8270D	5-31-18	6-4-18	
1,2-Dinitrobenzene	ND	0.040	EPA 8270D	5-31-18	6-4-18	
Acenaphthylene	ND	0.0079	EPA 8270D/SIM	5-31-18	6-1-18	
3-Nitroaniline	ND	0.040	EPA 8270D	5-31-18	6-4-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B4-7.5-8.5					
Laboratory ID:	05-259-16					
2,4-Dinitrophenol	ND	0.20	EPA 8270D	5-31-18	6-4-18	
Acenaphthene	ND	0.0079	EPA 8270D/SIM	5-31-18	6-1-18	
4-Nitrophenol	ND	0.040	EPA 8270D	5-31-18	6-4-18	
2,4-Dinitrotoluene	ND	0.040	EPA 8270D	5-31-18	6-4-18	
Dibenzofuran	ND	0.040	EPA 8270D	5-31-18	6-4-18	
2,3,5,6-Tetrachlorophenol	ND	0.040	EPA 8270D	5-31-18	6-4-18	
2,3,4,6-Tetrachlorophenol	ND	0.040	EPA 8270D	5-31-18	6-4-18	
Diethylphthalate	ND	0.20	EPA 8270D	5-31-18	6-4-18	
4-Chlorophenyl-phenylether	ND	0.040	EPA 8270D	5-31-18	6-4-18	
4-Nitroaniline	ND	0.040	EPA 8270D	5-31-18	6-4-18	
Fluorene	ND	0.0079	EPA 8270D/SIM	5-31-18	6-1-18	
4,6-Dinitro-2-methylphenol	ND	0.20	EPA 8270D	5-31-18	6-4-18	
n-Nitrosodiphenylamine	ND	0.040	EPA 8270D	5-31-18	6-4-18	
1,2-Diphenylhydrazine	ND	0.040	EPA 8270D	5-31-18	6-4-18	
4-Bromophenyl-phenylether	ND	0.040	EPA 8270D	5-31-18	6-4-18	
Hexachlorobenzene	ND	0.040	EPA 8270D	5-31-18	6-4-18	
Pentachlorophenol	ND	0.20	EPA 8270D	5-31-18	6-4-18	
Phenanthrene	ND	0.0079	EPA 8270D/SIM	5-31-18	6-1-18	
Anthracene	ND	0.0079	EPA 8270D/SIM	5-31-18	6-1-18	
Carbazole	ND	0.040	EPA 8270D	5-31-18	6-4-18	
Di-n-butylphthalate	ND	0.20	EPA 8270D	5-31-18	6-4-18	
Fluoranthene	ND	0.0079	EPA 8270D/SIM	5-31-18	6-1-18	
Benzidine	ND	0.40	EPA 8270D	5-31-18	6-4-18	
Pyrene	ND	0.0079	EPA 8270D/SIM	5-31-18	6-1-18	
Butylbenzylphthalate	ND	0.20	EPA 8270D	5-31-18	6-4-18	
bis-2-Ethylhexyladipate	ND	0.20	EPA 8270D	5-31-18	6-4-18	
3,3'-Dichlorobenzidine	ND	0.20	EPA 8270D	5-31-18	6-4-18	
Benzo[a]anthracene	ND	0.0079	EPA 8270D/SIM	5-31-18	6-1-18	
Chrysene	ND	0.0079	EPA 8270D/SIM	5-31-18	6-1-18	
bis(2-Ethylhexyl)phthalate	ND	0.20	EPA 8270D	5-31-18	6-4-18	
Di-n-octylphthalate	ND	0.20	EPA 8270D	5-31-18	6-4-18	
Benzo[b]fluoranthene	ND	0.0079	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo(j,k)fluoranthene	ND	0.0079	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[a]pyrene	ND	0.0079	EPA 8270D/SIM	5-31-18	6-1-18	
Indeno[1,2,3-cd]pyrene	ND	0.0079	EPA 8270D/SIM	5-31-18	6-1-18	
Dibenz[a,h]anthracene	ND	0.0079	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[g,h,i]perylene	ND	0.0079	EPA 8270D/SIM	5-31-18	6-1-18	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	48	19 - 103				
Phenol-d6	48	30 - 103				
Nitrobenzene-d5	47	27 - 105				
2-Fluorobiphenyl	54	36 - 102				
2,4,6-Tribromophenol	89	33 - 110				
Terphenyl-d14	70	38 - 108				



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 Project: 4082-039-01

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Matrix: Soil
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B4-10-11					
Laboratory ID:	05-259-17					
n-Nitrosodimethylamine	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Pyridine	ND	0.36	EPA 8270D	5-31-18	6-4-18	
Phenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Aniline	ND	0.18	EPA 8270D	5-31-18	6-4-18	
bis(2-Chloroethyl)ether	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2-Chlorophenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
1,3-Dichlorobenzene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
1,4-Dichlorobenzene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Benzyl alcohol	ND	0.18	EPA 8270D	5-31-18	6-4-18	
1,2-Dichlorobenzene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2-Methylphenol (o-Cresol)	ND	0.036	EPA 8270D	5-31-18	6-4-18	
bis(2-Chloroisopropyl)ether	ND	0.036	EPA 8270D	5-31-18	6-4-18	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.036	EPA 8270D	5-31-18	6-4-18	
n-Nitroso-di-n-propylamine	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Hexachloroethane	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Nitrobenzene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Isophorone	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2-Nitrophenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2,4-Dimethylphenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
bis(2-Chloroethoxy)methane	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2,4-Dichlorophenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
1,2,4-Trichlorobenzene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Naphthalene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
4-Chloroaniline	ND	0.18	EPA 8270D	5-31-18	6-4-18	
Hexachlorobutadiene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
4-Chloro-3-methylphenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2-Methylnaphthalene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
1-Methylnaphthalene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Hexachlorocyclopentadiene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2,4,6-Trichlorophenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2,3-Dichloroaniline	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2,4,5-Trichlorophenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2-Chloronaphthalene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2-Nitroaniline	ND	0.036	EPA 8270D	5-31-18	6-4-18	
1,4-Dinitrobenzene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Dimethylphthalate	ND	0.036	EPA 8270D	5-31-18	6-4-18	
1,3-Dinitrobenzene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2,6-Dinitrotoluene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
1,2-Dinitrobenzene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Acenaphthylene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
3-Nitroaniline	ND	0.036	EPA 8270D	5-31-18	6-4-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B4-10-11					
Laboratory ID:	05-259-17					
2,4-Dinitrophenol	ND	0.18	EPA 8270D	5-31-18	6-4-18	
Acenaphthene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
4-Nitrophenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2,4-Dinitrotoluene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Dibenzofuran	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2,3,5,6-Tetrachlorophenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
2,3,4,6-Tetrachlorophenol	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Diethylphthalate	ND	0.18	EPA 8270D	5-31-18	6-4-18	
4-Chlorophenyl-phenylether	ND	0.036	EPA 8270D	5-31-18	6-4-18	
4-Nitroaniline	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Fluorene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
4,6-Dinitro-2-methylphenol	ND	0.18	EPA 8270D	5-31-18	6-4-18	
n-Nitrosodiphenylamine	ND	0.036	EPA 8270D	5-31-18	6-4-18	
1,2-Diphenylhydrazine	ND	0.036	EPA 8270D	5-31-18	6-4-18	
4-Bromophenyl-phenylether	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Hexachlorobenzene	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Pentachlorophenol	ND	0.18	EPA 8270D	5-31-18	6-4-18	
Phenanthrene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Anthracene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Carbazole	ND	0.036	EPA 8270D	5-31-18	6-4-18	
Di-n-butylphthalate	0.18	0.18	EPA 8270D	5-31-18	6-4-18	
Fluoranthene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Benzidine	ND	0.36	EPA 8270D	5-31-18	6-4-18	
Pyrene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Butylbenzylphthalate	ND	0.18	EPA 8270D	5-31-18	6-4-18	
bis-2-Ethylhexyladipate	ND	0.18	EPA 8270D	5-31-18	6-4-18	
3,3'-Dichlorobenzidine	ND	0.18	EPA 8270D	5-31-18	6-4-18	
Benzo[a]anthracene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Chrysene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
bis(2-Ethylhexyl)phthalate	ND	0.18	EPA 8270D	5-31-18	6-4-18	
Di-n-octylphthalate	ND	0.18	EPA 8270D	5-31-18	6-4-18	
Benzo[b]fluoranthene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo(j,k)fluoranthene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[a]pyrene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Indeno[1,2,3-cd]pyrene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Dibenz[a,h]anthracene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[g,h,i]perylene	ND	0.0072	EPA 8270D/SIM	5-31-18	6-1-18	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	30	19 - 103				
Phenol-d6	37	30 - 103				
Nitrobenzene-d5	33	27 - 105				
2-Fluorobiphenyl	50	36 - 102				
2,4,6-Tribromophenol	79	33 - 110				
Terphenyl-d14	66	38 - 108				



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**TOTAL METALS
 EPA 6010D**

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	05-259-01					
Client ID:	FL252-B1-0-0.5					
Arsenic	11	5.3	6010D	6-5-18	6-5-18	
Lead	15	5.3	6010D	6-5-18	6-5-18	
Lab ID:	05-259-02					
Client ID:	FL252-B1-0.5-1					
Arsenic	14	5.3	6010D	6-5-18	6-5-18	
Lead	12	5.3	6010D	6-5-18	6-5-18	
Lab ID:	05-259-03					
Client ID:	FL252-B2-0-0.5					
Arsenic	11	5.5	6010D	6-5-18	6-5-18	
Lead	13	5.5	6010D	6-5-18	6-5-18	
Lab ID:	05-259-04					
Client ID:	FL252-B2-0.5-1					
Arsenic	9.4	5.8	6010D	6-5-18	6-5-18	
Lead	ND	5.8	6010D	6-5-18	6-5-18	
Lab ID:	05-259-05					
Client ID:	FL252-B3-0-0.5					
Arsenic	ND	5.3	6010D	6-5-18	6-5-18	
Lead	5.4	5.3	6010D	6-5-18	6-5-18	



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TOTAL METALS
EPA 6010D/6020B/7471B

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	05-259-06					
Client ID:	FL252-B3-0-1					
Antimony	ND	5.3	6010D	6-5-18	6-5-18	
Arsenic	13	5.3	6010D	6-5-18	6-5-18	
Beryllium	ND	0.53	6010D	6-5-18	6-5-18	
Cadmium	ND	0.53	6010D	6-5-18	6-5-18	
Chromium	26	0.53	6010D	6-5-18	6-5-18	
Copper	30	1.1	6010D	6-5-18	6-5-18	
Lead	24	5.3	6010D	6-5-18	6-5-18	
Mercury	ND	0.26	7471B	6-6-18	6-6-18	
Nickel	27	2.6	6010D	6-5-18	6-5-18	
Selenium	ND	11	6010D	6-5-18	6-5-18	
Silver	ND	1.1	6010D	6-5-18	6-5-18	
Thallium	ND	2.6	6020B	6-5-18	6-6-18	
Zinc	170	2.6	6010D	6-6-18	6-6-18	



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TOTAL METALS
EPA 6010D/6020B/7471B

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	05-259-07					
Client ID:	FL252-B3-2.5-3.5					
Antimony	ND	5.7	6010D	6-5-18	6-5-18	
Arsenic	7.2	5.7	6010D	6-5-18	6-5-18	
Beryllium	ND	0.57	6010D	6-5-18	6-5-18	
Cadmium	ND	0.57	6010D	6-5-18	6-5-18	
Chromium	47	0.57	6010D	6-5-18	6-5-18	
Copper	14	1.1	6010D	6-5-18	6-5-18	
Lead	ND	5.7	6010D	6-5-18	6-5-18	
Mercury	ND	0.28	7471B	6-6-18	6-6-18	
Nickel	50	2.8	6010D	6-5-18	6-5-18	
Selenium	ND	11	6010D	6-5-18	6-5-18	
Silver	ND	1.1	6010D	6-5-18	6-5-18	
Thallium	ND	2.8	6020B	6-5-18	6-6-18	
Zinc	41	2.8	6010D	6-6-18	6-6-18	



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TOTAL METALS
EPA 6010D/6020B/7471B

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	05-259-10					
Client ID:	FL252-B3-10-11					
Antimony	ND	5.4	6010D	6-5-18	6-5-18	
Arsenic	ND	5.4	6010D	6-5-18	6-5-18	
Beryllium	ND	0.54	6010D	6-5-18	6-5-18	
Cadmium	ND	0.54	6010D	6-5-18	6-5-18	
Chromium	22	0.54	6010D	6-5-18	6-5-18	
Copper	7.9	1.1	6010D	6-5-18	6-5-18	
Lead	ND	5.4	6010D	6-5-18	6-5-18	
Mercury	ND	0.27	7471B	6-6-18	6-6-18	
Nickel	21	2.7	6010D	6-5-18	6-5-18	
Selenium	ND	11	6010D	6-5-18	6-5-18	
Silver	ND	1.1	6010D	6-5-18	6-5-18	
Thallium	ND	2.7	6020B	6-5-18	6-6-18	
Zinc	24	2.7	6010D	6-6-18	6-6-18	



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TOTAL METALS
EPA 6010D/6020B/7471B

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	05-259-11					
Client ID:	FL252-B4-0-0.5					
Arsenic	7.8	5.7	6010D	6-5-18	6-5-18	
Lead	24	5.7	6010D	6-5-18	6-5-18	

Lab ID: 05-259-12
Client ID: FL252-B4-0-1

Antimony	ND	5.2	6010D	6-5-18	6-5-18	
Arsenic	10	5.2	6010D	6-5-18	6-5-18	
Beryllium	ND	0.52	6010D	6-5-18	6-5-18	
Cadmium	ND	0.52	6010D	6-5-18	6-5-18	
Chromium	37	0.52	6010D	6-5-18	6-5-18	
Copper	41	1.0	6010D	6-5-18	6-5-18	
Lead	13	5.2	6010D	6-5-18	6-5-18	
Mercury	ND	0.26	7471B	6-6-18	6-6-18	
Nickel	29	2.6	6010D	6-5-18	6-5-18	
Selenium	ND	10	6010D	6-5-18	6-5-18	
Silver	ND	1.0	6010D	6-5-18	6-5-18	
Thallium	ND	2.6	6020B	6-5-18	6-6-18	
Zinc	84	2.6	6010D	6-6-18	6-6-18	



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TOTAL METALS
EPA 6010D/6020B/7471B

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	05-259-14					
Client ID:	FL252-B4-5-6					
Antimony	ND	8.4	6010D	6-5-18	6-5-18	
Arsenic	12	8.4	6010D	6-5-18	6-5-18	
Beryllium	ND	0.84	6010D	6-5-18	6-5-18	
Cadmium	ND	0.84	6010D	6-5-18	6-5-18	
Chromium	38	0.84	6010D	6-5-18	6-5-18	
Copper	19	1.7	6010D	6-5-18	6-5-18	
Lead	19	8.4	6010D	6-5-18	6-5-18	
Mercury	ND	0.42	7471B	6-6-18	6-6-18	
Nickel	30	4.2	6010D	6-5-18	6-5-18	
Selenium	ND	17	6010D	6-5-18	6-5-18	
Silver	ND	1.7	6010D	6-5-18	6-5-18	
Thallium	ND	4.2	6020B	6-5-18	6-6-18	
Zinc	58	4.2	6010D	6-6-18	6-6-18	



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TOTAL METALS
EPA 6010D/6020B/7471B

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	05-259-16					
Client ID:	FL252-B4-7.5-8.5					
Antimony	ND	5.9	6010D	6-5-18	6-5-18	
Arsenic	ND	5.9	6010D	6-5-18	6-5-18	
Beryllium	ND	0.59	6010D	6-5-18	6-5-18	
Cadmium	ND	0.59	6010D	6-5-18	6-5-18	
Chromium	45	0.59	6010D	6-5-18	6-5-18	
Copper	12	1.2	6010D	6-5-18	6-5-18	
Lead	ND	5.9	6010D	6-5-18	6-5-18	
Mercury	ND	0.30	7471B	6-6-18	6-6-18	
Nickel	51	3.0	6010D	6-5-18	6-5-18	
Selenium	ND	12	6010D	6-5-18	6-5-18	
Silver	ND	1.2	6010D	6-5-18	6-5-18	
Thallium	ND	3.0	6020B	6-5-18	6-6-18	
Zinc	29	3.0	6010D	6-6-18	6-6-18	



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TOTAL METALS
EPA 6010D/6020B/7471B

Matrix: Soil
 Units: mg/kg (ppm)

				Date	Date	
Analyte	Result	PQL	EPA Method	Prepared	Analyzed	Flags
Lab ID:	05-259-17					
Client ID:	FL252-B4-10-11					
Antimony	ND	5.4	6010D	6-5-18	6-5-18	
Arsenic	ND	5.4	6010D	6-5-18	6-5-18	
Beryllium	ND	0.54	6010D	6-5-18	6-5-18	
Cadmium	ND	0.54	6010D	6-5-18	6-5-18	
Chromium	21	0.54	6010D	6-5-18	6-5-18	
Copper	11	1.1	6010D	6-5-18	6-5-18	
Lead	ND	5.4	6010D	6-5-18	6-5-18	
Mercury	ND	0.27	7471B	6-6-18	6-6-18	
Nickel	26	2.7	6010D	6-5-18	6-5-18	
Selenium	ND	11	6010D	6-5-18	6-5-18	
Silver	ND	1.1	6010D	6-5-18	6-5-18	
Thallium	ND	2.7	6020B	6-5-18	6-6-18	
Zinc	23	2.7	6010D	6-6-18	6-6-18	



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**SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A**

Matrix: Soil
Units: mg/kg (ppm)

				Date	Date	
Analyte	Result	PQL	EPA Method	Prepared	Analyzed	Flags
Lab ID:	05-259-07					
Client ID:	FL252-B3-2.5-3.5					
Hexavalent Chromium	ND	1.1	7196A mod	6-7-18	6-7-18	



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 Project: 4082-039-01

**NWTPH-HCID
 QUALITY CONTROL**

Matrix: Soil
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0530S2					
Gasoline Range Organics	ND	20	NWTPH-HCID	5-30-18	5-30-18	
Diesel Range Organics	ND	50	NWTPH-HCID	5-30-18	5-30-18	
Lube Oil Range Organics	ND	100	NWTPH-HCID	5-30-18	5-30-18	
Surrogate:	Percent Recovery	Control Limits				
<i>o</i>-Terphenyl	103	50-150				



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 Project: 4082-039-01

**NWTPH-Gx
QUALITY CONTROL**

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0607S1					
Gasoline	ND	5.0	NWTPH-Gx	6-7-18	6-7-18	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	86	57-129				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	06-056-01							
	ORIG	DUP						
Gasoline	ND	ND	NA	NA	NA	NA	30	
Surrogate:								
Fluorobenzene				83	82	57-129		



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**NWTPH-Dx
QUALITY CONTROL**

Matrix: Soil
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0607S1					
Diesel Range Organics	ND	25	NWTPH-Dx	6-7-18	6-8-18	
Lube Oil Range Organics	ND	50	NWTPH-Dx	6-7-18	6-8-18	
Surrogate:	Percent Recovery	Control Limits				
<i>o</i>-Terphenyl	93	50-150				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	05-259-15									
	ORIG	DUP								
Diesel Range	ND	ND	NA	NA		NA	NA	NA	NA	
Lube Oil Range Organics	95.6	57.9	NA	NA		NA	NA	49	NA	
Surrogate:										
o-Terphenyl						84	91	50-150		



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VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
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Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0531S1					
Dichlorodifluoromethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Chloromethane	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
Vinyl Chloride	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Bromomethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Chloroethane	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
Trichlorofluoromethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Acetone	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
Iodomethane	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
Carbon Disulfide	ND	0.0014	EPA 8260C	5-31-18	5-31-18	
Methylene Chloride	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloroethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Vinyl Acetate	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
2,2-Dichloropropane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
2-Butanone	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
Bromochloromethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Chloroform	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Carbon Tetrachloride	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,1-Dichloropropene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Benzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Trichloroethene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2-Dichloropropane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Dibromomethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Bromodichloromethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Methyl Isobutyl Ketone	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
Toluene	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	



Date of Report: June 14, 2018
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 Laboratory Reference: 1805-259
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VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0531S1					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Tetrachloroethene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,3-Dichloropropane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
2-Hexanone	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
Dibromochloromethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Chlorobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Ethylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
m,p-Xylene	ND	0.0020	EPA 8260C	5-31-18	5-31-18	
o-Xylene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Styrene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Bromoform	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
Isopropylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Bromobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
n-Propylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
2-Chlorotoluene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
4-Chlorotoluene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,3,5-Trimethylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
tert-Butylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trimethylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
sec-Butylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
p-Isopropyltoluene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
n-Butylbenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.0050	EPA 8260C	5-31-18	5-31-18	
Naphthalene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260C	5-31-18	5-31-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	109	68-139				
Toluene-d8	112	79-128				
4-Bromofluorobenzene	109	71-132				



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 Project: 4082-039-01

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
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Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0601S1					
Dichlorodifluoromethane	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Chloromethane	ND	0.0050	EPA 8260C	6-1-18	6-1-18	
Vinyl Chloride	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Bromomethane	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Chloroethane	ND	0.0050	EPA 8260C	6-1-18	6-1-18	
Trichlorofluoromethane	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
1,1-Dichloroethene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Acetone	ND	0.0050	EPA 8260C	6-1-18	6-1-18	
Iodomethane	ND	0.0050	EPA 8260C	6-1-18	6-1-18	
Carbon Disulfide	ND	0.0014	EPA 8260C	6-1-18	6-1-18	
Methylene Chloride	ND	0.0050	EPA 8260C	6-1-18	6-1-18	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
1,1-Dichloroethane	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Vinyl Acetate	ND	0.0050	EPA 8260C	6-1-18	6-1-18	
2,2-Dichloropropane	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
2-Butanone	ND	0.0050	EPA 8260C	6-1-18	6-1-18	
Bromochloromethane	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Chloroform	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Carbon Tetrachloride	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
1,1-Dichloropropene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Benzene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Trichloroethene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
1,2-Dichloropropane	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Dibromomethane	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Bromodichloromethane	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260C	6-1-18	6-1-18	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Methyl Isobutyl Ketone	ND	0.0050	EPA 8260C	6-1-18	6-1-18	
Toluene	ND	0.0050	EPA 8260C	6-1-18	6-1-18	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	



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VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID: MB0601S1						
1,1,2-Trichloroethane	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Tetrachloroethene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
1,3-Dichloropropane	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
2-Hexanone	ND	0.0050	EPA 8260C	6-1-18	6-1-18	
Dibromochloromethane	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Chlorobenzene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Ethylbenzene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
m,p-Xylene	ND	0.0020	EPA 8260C	6-1-18	6-1-18	
o-Xylene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Styrene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Bromoform	ND	0.0050	EPA 8260C	6-1-18	6-1-18	
Isopropylbenzene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Bromobenzene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
n-Propylbenzene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
2-Chlorotoluene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
4-Chlorotoluene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
1,3,5-Trimethylbenzene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
tert-Butylbenzene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
1,2,4-Trimethylbenzene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
sec-Butylbenzene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
p-Isopropyltoluene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
n-Butylbenzene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260C	6-1-18	6-1-18	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Hexachlorobutadiene	ND	0.0050	EPA 8260C	6-1-18	6-1-18	
Naphthalene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260C	6-1-18	6-1-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	92	68-139				
Toluene-d8	96	79-128				
4-Bromofluorobenzene	97	71-132				



Date of Report: June 14, 2018
 Samples Submitted: May 24, 2018
 Laboratory Reference: 1805-259
 Project: 4082-039-01

**VOLATILES by EPA 8260C
 SB/SBD QUALITY CONTROL**

Matrix: Soil
 Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery	Recovery Limits	RPD	Limit	Flags
SPIKE BLANKS									
Laboratory ID:	SB0531S1								
	SB	SBD	SB	SBD	SB	SBD			
1,1-Dichloroethene	0.0444	0.0476	0.0500	0.0500	89	95	53-141	7	17
Benzene	0.0465	0.0490	0.0500	0.0500	93	98	70-130	5	15
Trichloroethene	0.0474	0.0488	0.0500	0.0500	95	98	74-122	3	16
Toluene	0.0503	0.0518	0.0500	0.0500	101	104	76-130	3	15
Chlorobenzene	0.0466	0.0482	0.0500	0.0500	93	96	75-120	3	14
Surrogate:									
Dibromofluoromethane					81	82	68-139		
Toluene-d8					81	84	79-128		
4-Bromofluorobenzene					81	82	71-132		
Laboratory ID:	SB0601S1								
	SB	SBD	SB	SBD	SB	SBD			
1,1-Dichloroethene	0.0471	0.0461	0.0500	0.0500	94	92	53-141	2	17
Benzene	0.0501	0.0486	0.0500	0.0500	100	97	70-130	3	15
Trichloroethene	0.0483	0.0474	0.0500	0.0500	97	95	74-122	2	16
Toluene	0.0530	0.0520	0.0500	0.0500	106	104	76-130	2	15
Chlorobenzene	0.0484	0.0471	0.0500	0.0500	97	94	75-120	3	14
Surrogate:									
Dibromofluoromethane					93	86	68-139		
Toluene-d8					96	89	79-128		
4-Bromofluorobenzene					95	89	71-132		



Date of Report: June 14, 2018
 Samples Submitted: May 24, 2018
 Laboratory Reference: 1805-259
 Project: 4082-039-01

SEMIVOLATILES EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL
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Matrix: Soil
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0531S1					
n-Nitrosodimethylamine	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Pyridine	ND	0.33	EPA 8270D	5-31-18	5-31-18	
Phenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Aniline	ND	0.17	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroethyl)ether	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2-Chlorophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Benzyl alcohol	ND	0.17	EPA 8270D	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2-Methylphenol (o-Cresol)	ND	0.033	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroisopropyl)ether	ND	0.033	EPA 8270D	5-31-18	5-31-18	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.033	EPA 8270D	5-31-18	5-31-18	
n-Nitroso-di-n-propylamine	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Hexachloroethane	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Nitrobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Isophorone	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2-Nitrophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,4-Dimethylphenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroethoxy)methane	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,4-Dichlorophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Naphthalene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
4-Chloroaniline	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
4-Chloro-3-methylphenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2-Methylnaphthalene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
1-Methylnaphthalene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Hexachlorocyclopentadiene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,4,6-Trichlorophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,3-Dichloroaniline	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,4,5-Trichlorophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2-Chloronaphthalene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2-Nitroaniline	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,4-Dinitrobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Dimethylphthalate	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,3-Dinitrobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,6-Dinitrotoluene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,2-Dinitrobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Acenaphthylene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
3-Nitroaniline	ND	0.033	EPA 8270D	5-31-18	5-31-18	



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 Samples Submitted: May 24, 2018
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SEMIVOLATILES EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0531S1					
2,4-Dinitrophenol	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Acenaphthene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
4-Nitrophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,4-Dinitrotoluene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Dibenzofuran	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,3,5,6-Tetrachlorophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,3,4,6-Tetrachlorophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Diethylphthalate	ND	0.17	EPA 8270D	5-31-18	5-31-18	
4-Chlorophenyl-phenylether	ND	0.033	EPA 8270D	5-31-18	5-31-18	
4-Nitroaniline	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Fluorene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
4,6-Dinitro-2-methylphenol	ND	0.17	EPA 8270D	5-31-18	5-31-18	
n-Nitrosodiphenylamine	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,2-Diphenylhydrazine	ND	0.033	EPA 8270D	5-31-18	5-31-18	
4-Bromophenyl-phenylether	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Hexachlorobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Pentachlorophenol	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Phenanthrene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Anthracene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Carbazole	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Di-n-butylphthalate	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Fluoranthene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Benzidine	ND	0.33	EPA 8270D	5-31-18	5-31-18	
Pyrene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Butylbenzylphthalate	ND	0.17	EPA 8270D	5-31-18	5-31-18	
bis-2-Ethylhexyladipate	ND	0.17	EPA 8270D	5-31-18	5-31-18	
3,3'-Dichlorobenzidine	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Benzo[a]anthracene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Chrysene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
bis(2-Ethylhexyl)phthalate	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Di-n-octylphthalate	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Benzo[b]fluoranthene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo(j,k)fluoranthene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[a]pyrene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Indeno[1,2,3-cd]pyrene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Dibenz[a,h]anthracene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[g,h,i]perylene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	26	19 - 103				
Phenol-d6	34	30 - 103				
Nitrobenzene-d5	30	27 - 105				
2-Fluorobiphenyl	45	36 - 102				
2,4,6-Tribromophenol	79	33 - 110				
Terphenyl-d14	73	38 - 108				



Date of Report: June 14, 2018
 Samples Submitted: May 24, 2018
 Laboratory Reference: 1805-259
 Project: 4082-039-01

**SEMIVOLATILES EPA 8270D/SIM
 MS/MSD QUALITY CONTROL**

Matrix: Soil
 Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES										
Laboratory ID:	05-259-06									
	MS	MSD	MS	MSD		MS	MSD			
Phenol	0.588	0.651	1.33	1.33	ND	44	49	37 - 94	10	27
2-Chlorophenol	0.548	0.602	1.33	1.33	ND	41	45	37 - 95	9	32
1,4-Dichlorobenzene	0.184	0.195	0.667	0.667	ND	28	29	23 - 97	6	37
n-Nitroso-di-n-propylamine	0.290	0.324	0.667	0.667	ND	43	49	40 - 91	11	28
1,2,4-Trichlorobenzene	0.334	0.372	0.667	0.667	ND	50	56	37 - 93	11	30
4-Chloro-3-methylphenol	0.679	0.726	1.33	1.33	ND	51	55	46 - 96	7	25
Acenaphthene	0.358	0.401	0.667	0.667	ND	54	60	43 - 90	11	25
4-Nitrophenol	0.494	0.569	1.33	1.33	ND	37	43	31 - 104	14	28
2,4-Dinitrotoluene	0.308	0.345	0.667	0.667	ND	46	52	31 - 96	11	32
Pentachlorophenol	0.740	0.933	1.33	1.33	ND	56	70	20 - 123	23	29
Pyrene	0.353	0.405	0.667	0.667	0.100	38	46	28 - 114	14	35
Surrogate:										
2-Fluorophenol						33	35	19 - 103		
Phenol-d6						39	43	30 - 103		
Nitrobenzene-d5						39	41	27 - 105		
2-Fluorobiphenyl						50	55	36 - 102		
2,4,6-Tribromophenol						50	61	33 - 110		
Terphenyl-d14						45	54	38 - 108		



Date of Report: June 14, 2018
 Samples Submitted: May 24, 2018
 Laboratory Reference: 1805-259
 Project: 4082-039-01

**TOTAL METALS
 EPA 6010D/6020B/7471B
 METHOD BLANK QUALITY CONTROL**

Date Extracted: 6-5&6-18

Date Analyzed: 6-5&6-18

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: MB0605SH1,MB0606SM1&MB0606S1

Analyte	Method	Result	PQL
Antimony	6010D	ND	5.0
Arsenic	6010D	ND	5.0
Beryllium	6010D	ND	0.50
Cadmium	6010D	ND	0.50
Chromium	6010D	ND	0.50
Copper	6010D	ND	1.0
Lead	6010D	ND	5.0
Mercury	7471B	ND	0.25
Nickel	6010D	ND	2.5
Selenium	6010D	ND	10
Silver	6010D	ND	1.0
Thallium	6020B	ND	2.5
Zinc	6010D	ND	2.5



Date of Report: June 14, 2018
 Samples Submitted: May 24, 2018
 Laboratory Reference: 1805-259
 Project: 4082-039-01

**TOTAL METALS
 EPA 6010D/6020B/7471B
 DUPLICATE QUALITY CONTROL**

Date Extracted: 6-5&6-18

Date Analyzed: 6-5&6-18

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: 05-259-06

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Antimony	ND	ND	NA	5.0	
Arsenic	12.2	11.1	9	5.0	
Beryllium	ND	ND	NA	0.50	
Cadmium	ND	ND	NA	0.50	
Chromium	25.1	25.8	3	0.50	
Copper	28.4	30.6	7	1.0	
Lead	22.3	21.3	5	5.0	
Mercury	ND	ND	NA	0.25	
Nickel	25.7	24.0	7	2.5	
Selenium	ND	ND	NA	10	
Silver	ND	ND	NA	1.0	
Thallium	ND	ND	NA	2.5	
Zinc	163	203	22	2.5	K



Date of Report: June 14, 2018
 Samples Submitted: May 24, 2018
 Laboratory Reference: 1805-259
 Project: 4082-039-01

TOTAL METALS
EPA 6010D/6020B/7471B
MS/MSD QUALITY CONTROL

Date Extracted: 6-5&6-18

Date Analyzed: 6-5&6-18

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: 05-259-06

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Antimony	100	87.6	88	87.9	88	0	
Arsenic	100	108	96	112	100	4	
Beryllium	50.0	41.0	82	40.0	80	2	
Cadmium	50.0	47.0	94	46.7	93	1	
Chromium	100	115	90	121	96	5	
Copper	50.0	85.3	114	82.5	108	3	
Lead	250	251	91	250	91	0	
Mercury	0.500	0.514	103	0.517	103	1	
Nickel	100	115	90	117	91	1	
Selenium	100	95.7	96	92.1	92	4	
Silver	25.0	22.8	91	22.6	90	1	
Thallium	50.0	48.8	98	48.8	98	0	
Zinc	100	279	116	302	139	8	V



Date of Report: June 14, 2018
Samples Submitted: May 24, 2018
Laboratory Reference: 1805-259
Project: 4082-039-01

**SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A
METHOD BLANK QUALITY CONTROL**

Date Extracted: 6-7-18
Date Analyzed: 6-7-18

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0607S1

Analyte	Method	Result	PQL
Hexavalent Chromium	7196A mod	ND	1.0



Date of Report: June 14, 2018
Samples Submitted: May 24, 2018
Laboratory Reference: 1805-259
Project: 4082-039-01

**SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A
DUPLICATE QUALITY CONTROL**

Date Extracted: 6-7-18
Date Analyzed: 6-7-18

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 05-255-12

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Hexavalent Chromium	ND	ND	NA	1.0	



Date of Report: June 14, 2018
Samples Submitted: May 24, 2018
Laboratory Reference: 1805-259
Project: 4082-039-01

**SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A
MS/MSD QUALITY CONTROL**

Date Extracted: 6-7-18
Date Analyzed: 6-7-18

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 05-255-12

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Hexavalent Chromium	5.00	4.10	82	4.54	91	10	



Date of Report: June 14, 2018
 Samples Submitted: May 24, 2018
 Laboratory Reference: 1805-259
 Project: 4082-039-01

% MOISTURE

Date Analyzed: 5-30,31&6-5,7-18

Client ID	Lab ID	% Moisture
FL252-B1-0-0.5	05-259-01	5
FL252-B1-0.5-1	05-259-02	6
FL252-B2-0-0.5	05-259-03	9
FL252-B2-0.5-1	05-259-04	13
FL252-B3-0-0.5	05-259-05	5
FL252-B3-0-1	05-259-06	5
FL252-B3-2.5-3.5	05-259-07	12
FL252-B3-5-6	05-259-08	8
FL252-B3-10-11	05-259-10	8
FL252-B4-0-0.5	05-259-11	12
FL252-B4-0-1	05-259-12	5
FL252-B4-2.5-3.5	05-259-13	9
FL252-B4-5-6	05-259-14	41
FL252-B4-6-6.5	05-259-15	17
FL252-B4-7.5-8.5	05-259-16	16
FL252-B4-10-11	05-259-17	8





Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B - The analyte indicated was also found in the blank sample.
- C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E - The value reported exceeds the quantitation range and is an estimate.
- F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I - Compound recovery is outside of the control limits.
- J - The value reported was below the practical quantitation limit. The value is an estimate.
- K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L - The RPD is outside of the control limits.
- M - Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
- N - Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 - Hydrocarbons in diesel range are impacting lube oil range results.
- O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P - The RPD of the detected concentrations between the two columns is greater than 40.
- Q - Surrogate recovery is outside of the control limits.
- S - Surrogate recovery data is not available due to the necessary dilution of the sample.
- T - The sample chromatogram is not similar to a typical _____.
- U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 - The practical quantitation limit is elevated due to interferences present in the sample.
- V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X - Sample extract treated with a mercury cleanup procedure.
- X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.
- Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
- Z -
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference





Analytical Laboratory Testing Services
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Phone: (425) 883-3881 • www.on-site-env.com

Chain of Custody

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Analytical Laboratory Testing Services 14648 NE 95th Street • Redmond, WA 98052 Phone: (425) 883-3881 • www.on-site-env.com									
Company: <u>Geo Engineers</u>									
Project Number: <u>4082-039-01</u>									
Project Name: <u>Sound Transit</u>									
Project Manager: <u>Mrs. Kesson</u>									
Sampled by: <u>320/csr</u>									
Turnaround Request (in working days) (Check One) ☐ Same Day ☐ 1 Day ☐ 2 Days ☐ 3 Days ☒ Standard (7 Days) (TPH analysis 5 Days)									
Lab ID Sample Identification Date Sampled Time Sampled Matrix Number of Containers									
1	FL252-131-0-0.5	5/23/18	0607	S	12	NWTPH-HCID			
2	FL252-131-0.5-1		0910	1	12	NWTPH-Gx/BTEX			
3	FL252-132-0-0.5		0911	1	12	NWTPH-Gx			
4	FL252-132-0.5-1		0913	1	12	NWTPH-Dx (☐ Acid / SG Clean-up)			
5	FL252-133-0-0.5		0905	1	12	Volatiles 8260C			
6	FL252-133-0-1		1535	6	X	Halogenated Volatiles 8260C			
7	FL252-133-2.5-3.5		1540	6	X	EDB EPA 8011 (Waters Only)			
8	FL252-133-5-6		1545	6	X	Semivolatiles 8270D/SIM (with low-level PAHs)			
9	FL252-133-7.5-8.5		1541	6	X	PAHs 8270D/SIM (low-level)			
10	FL252-133-10-11		1550	6	X	PCBs 8082A			
Comments/Special Instructions									
AS - 7 ppm									
X - Added 5/29/18. DB (STA)									
X - Added 6/7/18. DB (STA)									
Data Package: Standard ☐ Level III ☐ Level IV ☐									
Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐									



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Chain of Custody

Page 2 of 2

Company: GeoEngineers			Turnaround Request (In working days)			Laboratory Number: 05-259																			
Project Number: 4082-035-2			☐ Same Day ☐ 1 Day			Standard (7 Days) (TPH analysis 5 Days) ☒ Standard (7 Days) (TPH analysis 5 Days) ☐ (other) _____																			
Project Name: Sound Transit			☐ 2 Days ☐ 3 Days																						
Project Manager: Mrs. Besson																									
Sampled by: SD/CJT																									
Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers																				
11	FL252-B4-0-0.5	5/23/18	850	S	12	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	Priorit Pollutant Metals	TOTAL As, Pb	% Moisture
12	FL252-B4-0-1		1630	S	X	X				X			X												
13	FL252-B4-2.5-3.5		1635	S	X	X				X															
14	FL252-B4-5-6		1637	S	X	X				X															
15	FL252-B4-6-6.5		1640	S	X	X				X															
16	FL252-B4-7.5-8.5		1645	S	X	X				X															
17	FL252-B4-10-11		1650	S	X	X				X															
18	FL252-B4-11-11.5		1655	S	X	X				X															
Signature		Company	Date	Time	Comments/Special Instructions																				
Relinquished		GeoEngineers	5/23/18	0750	As - 7 ppm																				
Received		GeoEngineers	5/24/18	0750																					
Relinquished		GeoEngineers	5/24/18	1225																					
Received		GeoEngineers	5/24/18	1225																					
Relinquished		GeoEngineers			Data Package: Standard ☐ Level III ☐ Level IV ☐																				
Received		GeoEngineers																							
Reviewed/Date		Reviewed/Date	Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐																						



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June 13, 2018

Marsi Beeson
GeoEngineers, Inc.
12000 NW Naito Prkway, Suite 180
Portland, OR 97209

Re: Analytical Data for Project 4082-039-01
Laboratory Reference No. 1806-010

Dear Marsi:

Enclosed are the analytical results and associated quality control data for samples submitted on June 1, 2018.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read 'DB', with a long horizontal stroke extending to the right.

David Baumeister
Project Manager

Enclosures



OnSite Environmental, Inc. 14648 NE 95th Street, Redmond, WA 98052 (425) 883-3881

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: June 13, 2018
Samples Submitted: June 1, 2018
Laboratory Reference: 1806-010
Project: 4082-039-01

Case Narrative

Samples were collected on June 1, 2018 and received by the laboratory on June 1, 2018. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Volatiles EPA 8260C (sludge) Analysis

Method 5035A VOA vials were not provided for sample FL252-Drilling Mud-Drum. The sample was received in acidified VOA vials and an unpreserved liter container without headspace. The liter container was sub-sampled into two eight-ounce jars to facilitate aliquotting into 5035A VOA vials for analysis. In each sub-sampling event the resulting containers were headspace free. Some loss of volatiles may have occurred.

Please note that any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.



Date of Report: June 13, 2018
Samples Submitted: June 1, 2018
Laboratory Reference: 1806-010
Project: 4082-039-01

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
FL252-MWB2-20180601	06-010-01	Water	6-1-18	6-1-18	
FL252-Decon/Purge-Drum-W	06-010-02	Water	6-1-18	6-1-18	
FL252-Drilling Mud-Drum	06-010-03	Sludge	6-1-18	6-1-18	



Date of Report: June 13, 2018
 Samples Submitted: June 1, 2018
 Laboratory Reference: 1806-010
 Project: 4082-039-01

NWTPH-HCID

Matrix: Water
 Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-MWB2-20180601						
Laboratory ID: 06-010-01						
Gasoline Range Organics	ND	0.10	NWTPH-HCID	6-5-18	6-5-18	
Diesel Range Organics	ND	0.26	NWTPH-HCID	6-5-18	6-5-18	
Lube Oil Range Organics	ND	0.41	NWTPH-HCID	6-5-18	6-5-18	
Surrogate:	Percent Recovery	Control Limits				
<i>o-Terphenyl</i>	72	50-150				

Client ID: FL252-Decon/Purge-Drum-W						
Laboratory ID: 06-010-02						
Gasoline Range Organics	ND	0.10	NWTPH-HCID	6-5-18	6-5-18	
Diesel Range Organics	ND	0.26	NWTPH-HCID	6-5-18	6-5-18	
Lube Oil Range Organics	ND	0.41	NWTPH-HCID	6-5-18	6-5-18	
Surrogate:	Percent Recovery	Control Limits				
<i>o-Terphenyl</i>	90	50-150				



Date of Report: June 13, 2018
 Samples Submitted: June 1, 2018
 Laboratory Reference: 1806-010
 Project: 4082-039-01

NWTPH-HCID

Matrix: Sludge
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-Drilling Mud-Drum						
Laboratory ID: 06-010-03						
Gasoline Range Organics	ND	45	NWTPH-HCID	6-6-18	6-7-18	
Diesel Range Organics	ND	110	NWTPH-HCID	6-6-18	6-7-18	
Lube Oil Range Organics	ND	230	NWTPH-HCID	6-6-18	6-7-18	
Surrogate:	Percent Recovery	Control Limits				
<i>o</i>-Terphenyl	76	50-150				



Date of Report: June 13, 2018
 Samples Submitted: June 1, 2018
 Laboratory Reference: 1806-010
 Project: 4082-039-01

VOLATILES EPA 8260C
 page 1 of 2

Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-MWB2-20180601						
Laboratory ID: 06-010-01						
Dichlorodifluoromethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Chloromethane	ND	1.0	EPA 8260C	6-4-18	6-4-18	
Vinyl Chloride	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Bromomethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Chloroethane	ND	1.0	EPA 8260C	6-4-18	6-4-18	
Trichlorofluoromethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,1-Dichloroethene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Acetone	ND	5.0	EPA 8260C	6-4-18	6-4-18	
Iodomethane	ND	1.9	EPA 8260C	6-4-18	6-4-18	
Carbon Disulfide	ND	0.36	EPA 8260C	6-4-18	6-4-18	
Methylene Chloride	ND	1.0	EPA 8260C	6-4-18	6-4-18	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,1-Dichloroethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Vinyl Acetate	ND	1.0	EPA 8260C	6-4-18	6-4-18	
2,2-Dichloropropane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
2-Butanone	ND	5.0	EPA 8260C	6-4-18	6-4-18	
Bromochloromethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Chloroform	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Carbon Tetrachloride	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,1-Dichloropropene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Benzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2-Dichloroethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Trichloroethene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2-Dichloropropane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Dibromomethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Bromodichloromethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
2-Chloroethyl Vinyl Ether	ND	1.5	EPA 8260C	6-4-18	6-4-18	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	6-4-18	6-4-18	
Toluene	ND	1.0	EPA 8260C	6-4-18	6-4-18	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	6-4-18	6-4-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-MWB2-20180601						
Laboratory ID: 06-010-01						
1,1,2-Trichloroethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Tetrachloroethene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,3-Dichloropropane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
2-Hexanone	ND	2.0	EPA 8260C	6-4-18	6-4-18	
Dibromochloromethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2-Dibromoethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Chlorobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Ethylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
m,p-Xylene	ND	0.40	EPA 8260C	6-4-18	6-4-18	
o-Xylene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Styrene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Bromoform	ND	1.0	EPA 8260C	6-4-18	6-4-18	
Isopropylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Bromobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
n-Propylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
2-Chlorotoluene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
4-Chlorotoluene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
tert-Butylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
sec-Butylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
p-Isopropyltoluene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
n-Butylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260C	6-4-18	6-4-18	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Hexachlorobutadiene	ND	1.0	EPA 8260C	6-4-18	6-4-18	
Naphthalene	ND	1.0	EPA 8260C	6-4-18	6-4-18	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	106	75-127				
Toluene-d8	100	80-127				
4-Bromofluorobenzene	99	78-125				



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Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-Decon/Purge-Drum-W						
Laboratory ID: 06-010-02						
Dichlorodifluoromethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Chloromethane	ND	1.0	EPA 8260C	6-4-18	6-4-18	
Vinyl Chloride	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Bromomethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Chloroethane	ND	1.0	EPA 8260C	6-4-18	6-4-18	
Trichlorofluoromethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,1-Dichloroethene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Acetone	ND	5.0	EPA 8260C	6-4-18	6-4-18	
Iodomethane	ND	1.9	EPA 8260C	6-4-18	6-4-18	
Carbon Disulfide	ND	0.36	EPA 8260C	6-4-18	6-4-18	
Methylene Chloride	ND	1.0	EPA 8260C	6-4-18	6-4-18	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,1-Dichloroethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Vinyl Acetate	ND	1.0	EPA 8260C	6-4-18	6-4-18	
2,2-Dichloropropane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
2-Butanone	17	5.0	EPA 8260C	6-4-18	6-4-18	
Bromochloromethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Chloroform	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Carbon Tetrachloride	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,1-Dichloropropene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Benzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2-Dichloroethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Trichloroethene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2-Dichloropropane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Dibromomethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Bromodichloromethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
2-Chloroethyl Vinyl Ether	ND	1.5	EPA 8260C	6-4-18	6-4-18	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	6-4-18	6-4-18	
Toluene	ND	1.0	EPA 8260C	6-4-18	6-4-18	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	6-4-18	6-4-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-Decon/Purge-Drum-W						
Laboratory ID: 06-010-02						
1,1,2-Trichloroethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Tetrachloroethene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,3-Dichloropropane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
2-Hexanone	ND	2.0	EPA 8260C	6-4-18	6-4-18	
Dibromochloromethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2-Dibromoethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Chlorobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Ethylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
m,p-Xylene	ND	0.40	EPA 8260C	6-4-18	6-4-18	
o-Xylene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Styrene	0.37	0.20	EPA 8260C	6-4-18	6-4-18	
Bromoform	ND	1.0	EPA 8260C	6-4-18	6-4-18	
Isopropylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Bromobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
n-Propylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
2-Chlorotoluene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
4-Chlorotoluene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
tert-Butylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
sec-Butylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
p-Isopropyltoluene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
n-Butylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260C	6-4-18	6-4-18	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Hexachlorobutadiene	ND	1.0	EPA 8260C	6-4-18	6-4-18	
Naphthalene	ND	1.0	EPA 8260C	6-4-18	6-4-18	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	105	75-127				
Toluene-d8	99	80-127				
4-Bromofluorobenzene	100	78-125				



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Matrix: Sludge
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-Drilling Mud-Drum						
Laboratory ID: 06-010-03						
Dichlorodifluoromethane	ND	0.0028	EPA 8260C	6-7-18	6-7-18	
Chloromethane	ND	0.010	EPA 8260C	6-7-18	6-7-18	
Vinyl Chloride	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
Bromomethane	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
Chloroethane	ND	0.010	EPA 8260C	6-7-18	6-7-18	
Trichlorofluoromethane	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
1,1-Dichloroethene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
Acetone	0.025	0.010	EPA 8260C	6-7-18	6-7-18	
Iodomethane	ND	0.010	EPA 8260C	6-7-18	6-7-18	
Carbon Disulfide	ND	0.0030	EPA 8260C	6-7-18	6-7-18	
Methylene Chloride	ND	0.010	EPA 8260C	6-7-18	6-7-18	
(trans) 1,2-Dichloroethene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
Methyl t-Butyl Ether	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
1,1-Dichloroethane	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
Vinyl Acetate	ND	0.010	EPA 8260C	6-7-18	6-7-18	
2,2-Dichloropropane	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
(cis) 1,2-Dichloroethene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
2-Butanone	ND	0.010	EPA 8260C	6-7-18	6-7-18	
Bromochloromethane	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
Chloroform	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
1,1,1-Trichloroethane	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
Carbon Tetrachloride	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
1,1-Dichloropropene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
Benzene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
1,2-Dichloroethane	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
Trichloroethene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
1,2-Dichloropropane	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
Dibromomethane	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
Bromodichloromethane	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
2-Chloroethyl Vinyl Ether	ND	0.010	EPA 8260C	6-7-18	6-7-18	
(cis) 1,3-Dichloropropene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
Methyl Isobutyl Ketone	ND	0.010	EPA 8260C	6-7-18	6-7-18	
Toluene	ND	0.010	EPA 8260C	6-7-18	6-7-18	
(trans) 1,3-Dichloropropene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-Drilling Mud-Drum						
Laboratory ID: 06-010-03						
1,1,2-Trichloroethane	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
Tetrachloroethene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
1,3-Dichloropropane	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
2-Hexanone	ND	0.010	EPA 8260C	6-7-18	6-7-18	
Dibromochloromethane	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
1,2-Dibromoethane	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
Chlorobenzene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
1,1,1,2-Tetrachloroethane	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
Ethylbenzene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
m,p-Xylene	ND	0.0040	EPA 8260C	6-7-18	6-7-18	
o-Xylene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
Styrene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
Bromoform	ND	0.010	EPA 8260C	6-7-18	6-7-18	
Isopropylbenzene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
Bromobenzene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
1,1,2,2-Tetrachloroethane	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
1,2,3-Trichloropropane	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
n-Propylbenzene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
2-Chlorotoluene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
4-Chlorotoluene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
1,3,5-Trimethylbenzene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
tert-Butylbenzene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
1,2,4-Trimethylbenzene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
sec-Butylbenzene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
1,3-Dichlorobenzene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
p-Isopropyltoluene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
1,4-Dichlorobenzene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
1,2-Dichlorobenzene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
n-Butylbenzene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
1,2-Dibromo-3-chloropropane	ND	0.010	EPA 8260C	6-7-18	6-7-18	
1,2,4-Trichlorobenzene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
Hexachlorobutadiene	ND	0.010	EPA 8260C	6-7-18	6-7-18	
Naphthalene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
1,2,3-Trichlorobenzene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	111	68-139				
Toluene-d8	116	79-128				
4-Bromofluorobenzene	112	71-132				



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Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-MWB2-20180601						
Laboratory ID: 06-010-01						
n-Nitrosodimethylamine	ND	0.94	EPA 8270D	6-4-18	6-5-18	
Pyridine	ND	0.94	EPA 8270D	6-4-18	6-5-18	
Phenol	ND	0.94	EPA 8270D	6-4-18	6-5-18	
Aniline	ND	4.7	EPA 8270D	6-4-18	6-5-18	
bis(2-Chloroethyl)ether	ND	0.94	EPA 8270D	6-4-18	6-5-18	
2-Chlorophenol	ND	0.94	EPA 8270D	6-4-18	6-5-18	
1,3-Dichlorobenzene	ND	0.94	EPA 8270D	6-4-18	6-5-18	
1,4-Dichlorobenzene	ND	0.94	EPA 8270D	6-4-18	6-5-18	
Benzyl alcohol	ND	0.94	EPA 8270D	6-4-18	6-5-18	
1,2-Dichlorobenzene	ND	0.94	EPA 8270D	6-4-18	6-5-18	
2-Methylphenol (o-Cresol)	ND	0.94	EPA 8270D	6-4-18	6-5-18	
bis(2-Chloroisopropyl)ether	ND	0.94	EPA 8270D	6-4-18	6-5-18	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.94	EPA 8270D	6-4-18	6-5-18	
n-Nitroso-di-n-propylamine	ND	0.94	EPA 8270D	6-4-18	6-5-18	
Hexachloroethane	ND	0.94	EPA 8270D	6-4-18	6-5-18	
Nitrobenzene	ND	0.94	EPA 8270D	6-4-18	6-5-18	
Isophorone	ND	0.94	EPA 8270D	6-4-18	6-5-18	
2-Nitrophenol	ND	0.94	EPA 8270D	6-4-18	6-5-18	
2,4-Dimethylphenol	ND	0.94	EPA 8270D	6-4-18	6-5-18	
bis(2-Chloroethoxy)methane	ND	0.94	EPA 8270D	6-4-18	6-5-18	
2,4-Dichlorophenol	ND	0.94	EPA 8270D	6-4-18	6-5-18	
1,2,4-Trichlorobenzene	ND	0.94	EPA 8270D	6-4-18	6-5-18	
Naphthalene	ND	0.094	EPA 8270D/SIM	6-4-18	6-5-18	
4-Chloroaniline	ND	0.94	EPA 8270D	6-4-18	6-5-18	
Hexachlorobutadiene	ND	0.94	EPA 8270D	6-4-18	6-5-18	
4-Chloro-3-methylphenol	ND	0.94	EPA 8270D	6-4-18	6-5-18	
2-Methylnaphthalene	ND	0.094	EPA 8270D/SIM	6-4-18	6-5-18	
1-Methylnaphthalene	ND	0.094	EPA 8270D/SIM	6-4-18	6-5-18	
Hexachlorocyclopentadiene	ND	0.94	EPA 8270D	6-4-18	6-5-18	
2,4,6-Trichlorophenol	ND	0.94	EPA 8270D	6-4-18	6-5-18	
2,3-Dichloroaniline	ND	0.94	EPA 8270D	6-4-18	6-5-18	
2,4,5-Trichlorophenol	ND	0.94	EPA 8270D	6-4-18	6-5-18	
2-Chloronaphthalene	ND	0.94	EPA 8270D	6-4-18	6-5-18	
2-Nitroaniline	ND	0.94	EPA 8270D	6-4-18	6-5-18	
1,4-Dinitrobenzene	ND	0.94	EPA 8270D	6-4-18	6-5-18	
Dimethylphthalate	ND	0.94	EPA 8270D	6-4-18	6-5-18	
1,3-Dinitrobenzene	ND	0.94	EPA 8270D	6-4-18	6-5-18	
2,6-Dinitrotoluene	ND	0.94	EPA 8270D	6-4-18	6-5-18	
1,2-Dinitrobenzene	ND	0.94	EPA 8270D	6-4-18	6-5-18	
Acenaphthylene	ND	0.094	EPA 8270D/SIM	6-4-18	6-5-18	
3-Nitroaniline	ND	0.94	EPA 8270D	6-4-18	6-5-18	



Date of Report: June 13, 2018
 Samples Submitted: June 1, 2018
 Laboratory Reference: 1806-010
 Project: 4082-039-01

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-MWB2-20180601						
Laboratory ID: 06-010-01						
2,4-Dinitrophenol	ND	4.7	EPA 8270D	6-4-18	6-5-18	
Acenaphthene	ND	0.094	EPA 8270D/SIM	6-4-18	6-5-18	
4-Nitrophenol	ND	4.7	EPA 8270D	6-4-18	6-5-18	
2,4-Dinitrotoluene	ND	0.94	EPA 8270D	6-4-18	6-5-18	
Dibenzofuran	ND	0.94	EPA 8270D	6-4-18	6-5-18	
2,3,5,6-Tetrachlorophenol	ND	0.94	EPA 8270D	6-4-18	6-5-18	
2,3,4,6-Tetrachlorophenol	ND	0.94	EPA 8270D	6-4-18	6-5-18	
Diethylphthalate	ND	0.94	EPA 8270D	6-4-18	6-5-18	
4-Chlorophenyl-phenylether	ND	0.94	EPA 8270D	6-4-18	6-5-18	
4-Nitroaniline	ND	0.94	EPA 8270D	6-4-18	6-5-18	
Fluorene	ND	0.094	EPA 8270D/SIM	6-4-18	6-5-18	
4,6-Dinitro-2-methylphenol	ND	4.7	EPA 8270D	6-4-18	6-5-18	
n-Nitrosodiphenylamine	ND	0.94	EPA 8270D	6-4-18	6-5-18	
1,2-Diphenylhydrazine	ND	0.94	EPA 8270D	6-4-18	6-5-18	
4-Bromophenyl-phenylether	ND	0.94	EPA 8270D	6-4-18	6-5-18	
Hexachlorobenzene	ND	0.94	EPA 8270D	6-4-18	6-5-18	
Pentachlorophenol	ND	4.7	EPA 8270D	6-4-18	6-5-18	
Phenanthrene	ND	0.094	EPA 8270D/SIM	6-4-18	6-5-18	
Anthracene	ND	0.094	EPA 8270D/SIM	6-4-18	6-5-18	
Carbazole	ND	0.94	EPA 8270D	6-4-18	6-5-18	
Di-n-butylphthalate	ND	3.3	EPA 8270D	6-4-18	6-5-18	
Fluoranthene	ND	0.094	EPA 8270D/SIM	6-4-18	6-5-18	
Benzidine	ND	4.7	EPA 8270D	6-4-18	6-5-18	
Pyrene	ND	0.094	EPA 8270D/SIM	6-4-18	6-5-18	
Butylbenzylphthalate	ND	0.94	EPA 8270D	6-4-18	6-5-18	
bis-2-Ethylhexyladipate	ND	0.94	EPA 8270D	6-4-18	6-5-18	
3,3'-Dichlorobenzidine	ND	0.94	EPA 8270D	6-4-18	6-5-18	
Benzo[a]anthracene	ND	0.0094	EPA 8270D/SIM	6-4-18	6-5-18	
Chrysene	ND	0.0094	EPA 8270D/SIM	6-4-18	6-5-18	
bis(2-Ethylhexyl)phthalate	ND	0.94	EPA 8270D	6-4-18	6-5-18	
Di-n-octylphthalate	ND	0.94	EPA 8270D	6-4-18	6-5-18	
Benzo[b]fluoranthene	ND	0.0094	EPA 8270D/SIM	6-4-18	6-5-18	
Benzo(j,k)fluoranthene	ND	0.0094	EPA 8270D/SIM	6-4-18	6-5-18	
Benzo[a]pyrene	ND	0.0094	EPA 8270D/SIM	6-4-18	6-5-18	
Indeno[1,2,3-cd]pyrene	ND	0.0094	EPA 8270D/SIM	6-4-18	6-5-18	
Dibenz[a,h]anthracene	ND	0.0094	EPA 8270D/SIM	6-4-18	6-5-18	
Benzo[g,h,i]perylene	ND	0.0094	EPA 8270D/SIM	6-4-18	6-5-18	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	24	12 - 80				
Phenol-d6	23	10 - 82				
Nitrobenzene-d5	48	30 - 103				
2-Fluorobiphenyl	59	33 - 103				
2,4,6-Tribromophenol	80	20 - 121				
Terphenyl-d14	63	32 - 113				



Date of Report: June 13, 2018
 Samples Submitted: June 1, 2018
 Laboratory Reference: 1806-010
 Project: 4082-039-01

SEMIVOLATILES EPA 8270D/SIM
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Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-Decon/Purge-Drum-W						
Laboratory ID: 06-010-02						
n-Nitrosodimethylamine	ND	0.95	EPA 8270D	6-4-18	6-5-18	
Pyridine	ND	0.95	EPA 8270D	6-4-18	6-5-18	
Phenol	ND	0.95	EPA 8270D	6-4-18	6-5-18	
Aniline	ND	4.8	EPA 8270D	6-4-18	6-5-18	
bis(2-Chloroethyl)ether	ND	0.95	EPA 8270D	6-4-18	6-5-18	
2-Chlorophenol	ND	0.95	EPA 8270D	6-4-18	6-5-18	
1,3-Dichlorobenzene	ND	0.95	EPA 8270D	6-4-18	6-5-18	
1,4-Dichlorobenzene	ND	0.95	EPA 8270D	6-4-18	6-5-18	
Benzyl alcohol	ND	0.95	EPA 8270D	6-4-18	6-5-18	
1,2-Dichlorobenzene	ND	0.95	EPA 8270D	6-4-18	6-5-18	
2-Methylphenol (o-Cresol)	ND	0.95	EPA 8270D	6-4-18	6-5-18	
bis(2-Chloroisopropyl)ether	ND	0.95	EPA 8270D	6-4-18	6-5-18	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.95	EPA 8270D	6-4-18	6-5-18	
n-Nitroso-di-n-propylamine	ND	0.95	EPA 8270D	6-4-18	6-5-18	
Hexachloroethane	ND	0.95	EPA 8270D	6-4-18	6-5-18	
Nitrobenzene	ND	0.95	EPA 8270D	6-4-18	6-5-18	
Isophorone	ND	0.95	EPA 8270D	6-4-18	6-5-18	
2-Nitrophenol	ND	0.95	EPA 8270D	6-4-18	6-5-18	
2,4-Dimethylphenol	ND	0.95	EPA 8270D	6-4-18	6-5-18	
bis(2-Chloroethoxy)methane	ND	0.95	EPA 8270D	6-4-18	6-5-18	
2,4-Dichlorophenol	ND	0.95	EPA 8270D	6-4-18	6-5-18	
1,2,4-Trichlorobenzene	ND	0.95	EPA 8270D	6-4-18	6-5-18	
Naphthalene	ND	0.095	EPA 8270D/SIM	6-4-18	6-5-18	
4-Chloroaniline	ND	0.95	EPA 8270D	6-4-18	6-5-18	
Hexachlorobutadiene	ND	0.95	EPA 8270D	6-4-18	6-5-18	
4-Chloro-3-methylphenol	ND	0.95	EPA 8270D	6-4-18	6-5-18	
2-Methylnaphthalene	ND	0.095	EPA 8270D/SIM	6-4-18	6-5-18	
1-Methylnaphthalene	ND	0.095	EPA 8270D/SIM	6-4-18	6-5-18	
Hexachlorocyclopentadiene	ND	0.95	EPA 8270D	6-4-18	6-5-18	
2,4,6-Trichlorophenol	ND	0.95	EPA 8270D	6-4-18	6-5-18	
2,3-Dichloroaniline	ND	0.95	EPA 8270D	6-4-18	6-5-18	
2,4,5-Trichlorophenol	ND	0.95	EPA 8270D	6-4-18	6-5-18	
2-Chloronaphthalene	ND	0.95	EPA 8270D	6-4-18	6-5-18	
2-Nitroaniline	ND	0.95	EPA 8270D	6-4-18	6-5-18	
1,4-Dinitrobenzene	ND	0.95	EPA 8270D	6-4-18	6-5-18	
Dimethylphthalate	ND	0.95	EPA 8270D	6-4-18	6-5-18	
1,3-Dinitrobenzene	ND	0.95	EPA 8270D	6-4-18	6-5-18	
2,6-Dinitrotoluene	ND	0.95	EPA 8270D	6-4-18	6-5-18	
1,2-Dinitrobenzene	ND	0.95	EPA 8270D	6-4-18	6-5-18	
Acenaphthylene	ND	0.095	EPA 8270D/SIM	6-4-18	6-5-18	
3-Nitroaniline	ND	0.95	EPA 8270D	6-4-18	6-5-18	



Date of Report: June 13, 2018
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-Decon/Purge-Drum-W						
Laboratory ID: 06-010-02						
2,4-Dinitrophenol	ND	4.8	EPA 8270D	6-4-18	6-5-18	
Acenaphthene	ND	0.095	EPA 8270D/SIM	6-4-18	6-5-18	
4-Nitrophenol	ND	4.8	EPA 8270D	6-4-18	6-5-18	
2,4-Dinitrotoluene	ND	0.95	EPA 8270D	6-4-18	6-5-18	
Dibenzofuran	ND	0.95	EPA 8270D	6-4-18	6-5-18	
2,3,5,6-Tetrachlorophenol	ND	0.95	EPA 8270D	6-4-18	6-5-18	
2,3,4,6-Tetrachlorophenol	ND	0.95	EPA 8270D	6-4-18	6-5-18	
Diethylphthalate	1.0	0.95	EPA 8270D	6-4-18	6-5-18	
4-Chlorophenyl-phenylether	ND	0.95	EPA 8270D	6-4-18	6-5-18	
4-Nitroaniline	ND	0.95	EPA 8270D	6-4-18	6-5-18	
Fluorene	ND	0.095	EPA 8270D/SIM	6-4-18	6-5-18	
4,6-Dinitro-2-methylphenol	ND	4.8	EPA 8270D	6-4-18	6-5-18	
n-Nitrosodiphenylamine	ND	0.95	EPA 8270D	6-4-18	6-5-18	
1,2-Diphenylhydrazine	ND	0.95	EPA 8270D	6-4-18	6-5-18	
4-Bromophenyl-phenylether	ND	0.95	EPA 8270D	6-4-18	6-5-18	
Hexachlorobenzene	ND	0.95	EPA 8270D	6-4-18	6-5-18	
Pentachlorophenol	ND	4.8	EPA 8270D	6-4-18	6-5-18	
Phenanthrene	ND	0.095	EPA 8270D/SIM	6-4-18	6-5-18	
Anthracene	ND	0.095	EPA 8270D/SIM	6-4-18	6-5-18	
Carbazole	ND	0.95	EPA 8270D	6-4-18	6-5-18	
Di-n-butylphthalate	7.0	3.3	EPA 8270D	6-4-18	6-5-18	
Fluoranthene	ND	0.095	EPA 8270D/SIM	6-4-18	6-5-18	
Benzidine	ND	4.8	EPA 8270D	6-4-18	6-5-18	
Pyrene	ND	0.095	EPA 8270D/SIM	6-4-18	6-5-18	
Butylbenzylphthalate	ND	0.95	EPA 8270D	6-4-18	6-5-18	
bis(2-Ethylhexyl)adipate	ND	0.95	EPA 8270D	6-4-18	6-5-18	
3,3'-Dichlorobenzidine	ND	0.95	EPA 8270D	6-4-18	6-5-18	
Benzo[a]anthracene	ND	0.0095	EPA 8270D/SIM	6-4-18	6-5-18	
Chrysene	0.010	0.0095	EPA 8270D/SIM	6-4-18	6-5-18	
bis(2-Ethylhexyl)phthalate	1.4	0.95	EPA 8270D	6-4-18	6-5-18	
Di-n-octylphthalate	ND	0.95	EPA 8270D	6-4-18	6-5-18	
Benzo[b]fluoranthene	0.011	0.0095	EPA 8270D/SIM	6-4-18	6-5-18	
Benzo(j,k)fluoranthene	ND	0.0095	EPA 8270D/SIM	6-4-18	6-5-18	
Benzo[a]pyrene	ND	0.0095	EPA 8270D/SIM	6-4-18	6-5-18	
Indeno[1,2,3-cd]pyrene	ND	0.0095	EPA 8270D/SIM	6-4-18	6-5-18	
Dibenz[a,h]anthracene	ND	0.0095	EPA 8270D/SIM	6-4-18	6-5-18	
Benzo[g,h,i]perylene	ND	0.0095	EPA 8270D/SIM	6-4-18	6-5-18	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	21	12 - 80				
Phenol-d6	21	10 - 82				
Nitrobenzene-d5	42	30 - 103				
2-Fluorobiphenyl	56	33 - 103				
2,4,6-Tribromophenol	61	20 - 121				
Terphenyl-d14	58	32 - 113				



Date of Report: June 13, 2018
 Samples Submitted: June 1, 2018
 Laboratory Reference: 1806-010
 Project: 4082-039-01

SEMIVOLATILES EPA 8270D/SIM
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Matrix: Sludge
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-Drilling Mud-Drum						
Laboratory ID: 06-010-03						
n-Nitrosodimethylamine	ND	0.075	EPA 8270D	6-5-18	6-5-18	
Pyridine	ND	0.75	EPA 8270D	6-5-18	6-5-18	
Phenol	ND	0.075	EPA 8270D	6-5-18	6-5-18	
Aniline	ND	0.38	EPA 8270D	6-5-18	6-5-18	
bis(2-Chloroethyl)ether	ND	0.075	EPA 8270D	6-5-18	6-5-18	
2-Chlorophenol	ND	0.075	EPA 8270D	6-5-18	6-5-18	
1,3-Dichlorobenzene	ND	0.075	EPA 8270D	6-5-18	6-5-18	
1,4-Dichlorobenzene	ND	0.075	EPA 8270D	6-5-18	6-5-18	
Benzyl alcohol	ND	0.38	EPA 8270D	6-5-18	6-5-18	
1,2-Dichlorobenzene	ND	0.075	EPA 8270D	6-5-18	6-5-18	
2-Methylphenol (o-Cresol)	ND	0.075	EPA 8270D	6-5-18	6-5-18	
bis(2-Chloroisopropyl)ether	ND	0.075	EPA 8270D	6-5-18	6-5-18	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.075	EPA 8270D	6-5-18	6-5-18	
n-Nitroso-di-n-propylamine	ND	0.075	EPA 8270D	6-5-18	6-5-18	
Hexachloroethane	ND	0.075	EPA 8270D	6-5-18	6-5-18	
Nitrobenzene	ND	0.075	EPA 8270D	6-5-18	6-5-18	
Isophorone	ND	0.075	EPA 8270D	6-5-18	6-5-18	
2-Nitrophenol	ND	0.075	EPA 8270D	6-5-18	6-5-18	
2,4-Dimethylphenol	ND	0.075	EPA 8270D	6-5-18	6-5-18	
bis(2-Chloroethoxy)methane	ND	0.075	EPA 8270D	6-5-18	6-5-18	
2,4-Dichlorophenol	ND	0.075	EPA 8270D	6-5-18	6-5-18	
1,2,4-Trichlorobenzene	ND	0.075	EPA 8270D	6-5-18	6-5-18	
Naphthalene	ND	0.015	EPA 8270D/SIM	6-5-18	6-5-18	
4-Chloroaniline	ND	0.38	EPA 8270D	6-5-18	6-5-18	
Hexachlorobutadiene	ND	0.075	EPA 8270D	6-5-18	6-5-18	
4-Chloro-3-methylphenol	ND	0.075	EPA 8270D	6-5-18	6-5-18	
2-Methylnaphthalene	ND	0.015	EPA 8270D/SIM	6-5-18	6-5-18	
1-Methylnaphthalene	ND	0.015	EPA 8270D/SIM	6-5-18	6-5-18	
Hexachlorocyclopentadiene	ND	0.075	EPA 8270D	6-5-18	6-5-18	
2,4,6-Trichlorophenol	ND	0.075	EPA 8270D	6-5-18	6-5-18	
2,3-Dichloroaniline	ND	0.075	EPA 8270D	6-5-18	6-5-18	
2,4,5-Trichlorophenol	ND	0.075	EPA 8270D	6-5-18	6-5-18	
2-Chloronaphthalene	ND	0.075	EPA 8270D	6-5-18	6-5-18	
2-Nitroaniline	ND	0.075	EPA 8270D	6-5-18	6-5-18	
1,4-Dinitrobenzene	ND	0.075	EPA 8270D	6-5-18	6-5-18	
Dimethylphthalate	ND	0.075	EPA 8270D	6-5-18	6-5-18	
1,3-Dinitrobenzene	ND	0.075	EPA 8270D	6-5-18	6-5-18	
2,6-Dinitrotoluene	ND	0.075	EPA 8270D	6-5-18	6-5-18	
1,2-Dinitrobenzene	ND	0.075	EPA 8270D	6-5-18	6-5-18	
Acenaphthylene	ND	0.015	EPA 8270D/SIM	6-5-18	6-5-18	
3-Nitroaniline	ND	0.075	EPA 8270D	6-5-18	6-5-18	



Date of Report: June 13, 2018
 Samples Submitted: June 1, 2018
 Laboratory Reference: 1806-010
 Project: 4082-039-01

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-Drilling Mud-Drum						
Laboratory ID: 06-010-03						
2,4-Dinitrophenol	ND	0.38	EPA 8270D	6-5-18	6-5-18	
Acenaphthene	ND	0.015	EPA 8270D/SIM	6-5-18	6-5-18	
4-Nitrophenol	ND	0.075	EPA 8270D	6-5-18	6-5-18	
2,4-Dinitrotoluene	ND	0.075	EPA 8270D	6-5-18	6-5-18	
Dibenzofuran	ND	0.075	EPA 8270D	6-5-18	6-5-18	
2,3,5,6-Tetrachlorophenol	ND	0.075	EPA 8270D	6-5-18	6-5-18	
2,3,4,6-Tetrachlorophenol	ND	0.075	EPA 8270D	6-5-18	6-5-18	
Diethylphthalate	ND	0.38	EPA 8270D	6-5-18	6-5-18	
4-Chlorophenyl-phenylether	ND	0.075	EPA 8270D	6-5-18	6-5-18	
4-Nitroaniline	ND	0.075	EPA 8270D	6-5-18	6-5-18	
Fluorene	ND	0.015	EPA 8270D/SIM	6-5-18	6-5-18	
4,6-Dinitro-2-methylphenol	ND	0.38	EPA 8270D	6-5-18	6-5-18	
n-Nitrosodiphenylamine	ND	0.075	EPA 8270D	6-5-18	6-5-18	
1,2-Diphenylhydrazine	ND	0.075	EPA 8270D	6-5-18	6-5-18	
4-Bromophenyl-phenylether	ND	0.075	EPA 8270D	6-5-18	6-5-18	
Hexachlorobenzene	ND	0.075	EPA 8270D	6-5-18	6-5-18	
Pentachlorophenol	ND	0.38	EPA 8270D	6-5-18	6-5-18	
Phenanthrene	ND	0.015	EPA 8270D/SIM	6-5-18	6-5-18	
Anthracene	ND	0.015	EPA 8270D/SIM	6-5-18	6-5-18	
Carbazole	ND	0.075	EPA 8270D	6-5-18	6-5-18	
Di-n-butylphthalate	1.0	0.38	EPA 8270D	6-5-18	6-5-18	
Fluoranthene	ND	0.015	EPA 8270D/SIM	6-5-18	6-5-18	
Benzidine	ND	0.75	EPA 8270D	6-5-18	6-5-18	
Pyrene	ND	0.015	EPA 8270D/SIM	6-5-18	6-5-18	
Butylbenzylphthalate	ND	0.38	EPA 8270D	6-5-18	6-5-18	
bis-2-Ethylhexyladipate	ND	0.38	EPA 8270D	6-5-18	6-5-18	
3,3'-Dichlorobenzidine	ND	0.38	EPA 8270D	6-5-18	6-5-18	
Benzo[a]anthracene	ND	0.015	EPA 8270D/SIM	6-5-18	6-5-18	
Chrysene	ND	0.015	EPA 8270D/SIM	6-5-18	6-5-18	
bis(2-Ethylhexyl)phthalate	ND	0.38	EPA 8270D	6-5-18	6-5-18	
Di-n-octylphthalate	ND	0.38	EPA 8270D	6-5-18	6-5-18	
Benzo[b]fluoranthene	ND	0.015	EPA 8270D/SIM	6-5-18	6-5-18	
Benzo(j,k)fluoranthene	ND	0.015	EPA 8270D/SIM	6-5-18	6-5-18	
Benzo[a]pyrene	ND	0.015	EPA 8270D/SIM	6-5-18	6-5-18	
Indeno[1,2,3-cd]pyrene	ND	0.015	EPA 8270D/SIM	6-5-18	6-5-18	
Dibenz[a,h]anthracene	ND	0.015	EPA 8270D/SIM	6-5-18	6-5-18	
Benzo[g,h,i]perylene	ND	0.015	EPA 8270D/SIM	6-5-18	6-5-18	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	39	19 - 103				
Phenol-d6	50	30 - 103				
Nitrobenzene-d5	45	27 - 105				
2-Fluorobiphenyl	57	36 - 102				
2,4,6-Tribromophenol	81	33 - 110				
Terphenyl-d14	64	38 - 108				



Date of Report: June 13, 2018
 Samples Submitted: June 1, 2018
 Laboratory Reference: 1806-010
 Project: 4082-039-01

TOTAL METALS
EPA 200.8/7470A

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID: 06-010-01						
Client ID: FL252-MWB2-20180601						
Antimony	ND	5.6	200.8	6-5-18	6-5-18	
Arsenic	ND	3.3	200.8	6-5-18	6-5-18	
Beryllium	ND	11	200.8	6-5-18	6-5-18	
Cadmium	ND	4.4	200.8	6-5-18	6-5-18	
Chromium	ND	11	200.8	6-5-18	6-5-18	
Copper	ND	11	200.8	6-5-18	6-5-18	
Lead	ND	1.1	200.8	6-5-18	6-5-18	
Mercury	ND	0.5	7470A	6-4-18	6-4-18	
Nickel	ND	22	200.8	6-5-18	6-5-18	
Selenium	ND	5.6	200.8	6-5-18	6-5-18	
Silver	ND	11	200.8	6-5-18	6-5-18	
Thallium	ND	5.6	200.8	6-5-18	6-5-18	
Zinc	ND	28	200.8	6-5-18	6-5-18	

Lab ID: 06-010-02
 Client ID: FL252-Decon/Purge-Drum-W

Arsenic	4.3	3.3	200.8	6-5-18	6-5-18	
Barium	96	28	200.8	6-5-18	6-5-18	
Cadmium	ND	4.4	200.8	6-5-18	6-5-18	
Chromium	31	11	200.8	6-5-18	6-5-18	
Lead	6.4	1.1	200.8	6-5-18	6-5-18	
Mercury	ND	0.5	7470A	6-4-18	6-4-18	
Selenium	ND	5.6	200.8	6-5-18	6-5-18	
Silver	ND	11	200.8	6-5-18	6-5-18	



Date of Report: June 13, 2018
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 Project: 4082-039-01

**TOTAL METALS
 EPA 6010D/7471B**

Matrix: Sludge
 Units: mg/kg (ppm)

				Date	Date	
Analyte	Result	PQL	EPA Method	Prepared	Analyzed	Flags
Lab ID:	06-010-03					
Client ID:	FL252-Drilling Mud-Drum					
Arsenic	ND	11	6010D	6-11-18	6-11-18	
Barium	67	5.7	6010D	6-11-18	6-11-18	
Cadmium	ND	1.1	6010D	6-11-18	6-11-18	
Chromium	24	1.1	6010D	6-11-18	6-11-18	
Lead	ND	11	6010D	6-11-18	6-11-18	
Mercury	ND	0.57	7471B	6-8-18	6-8-18	
Selenium	ND	11	6010D	6-11-18	6-11-18	
Silver	ND	2.3	6010D	6-11-18	6-11-18	



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**NWTPH-HCID
 QUALITY CONTROL**

Matrix: Water
 Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0605W1					
Gasoline Range Organics	ND	0.11	NWTPH-HCID	6-5-18	6-5-18	
Diesel Range Organics	ND	0.27	NWTPH-HCID	6-5-18	6-5-18	
Lube Oil Range Organics	ND	0.42	NWTPH-HCID	6-5-18	6-5-18	
Surrogate:	Percent Recovery	Control Limits				
<i>o</i>-Terphenyl	80	50-150				



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 Project: 4082-039-01

**NWTPH-HCID
 QUALITY CONTROL**

Matrix: Sludge
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0606S1					
Gasoline Range Organics	ND	20	NWTPH-HCID	6-6-18	6-7-18	
Diesel Range Organics	ND	50	NWTPH-HCID	6-6-18	6-7-18	
Lube Oil Range Organics	ND	100	NWTPH-HCID	6-6-18	6-7-18	
Surrogate:	Percent Recovery	Control Limits				
<i>o</i>-Terphenyl	89	50-150				



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VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
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Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0604W1					
Dichlorodifluoromethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Chloromethane	ND	1.0	EPA 8260C	6-4-18	6-4-18	
Vinyl Chloride	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Bromomethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Chloroethane	ND	1.0	EPA 8260C	6-4-18	6-4-18	
Trichlorofluoromethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,1-Dichloroethene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Acetone	ND	5.0	EPA 8260C	6-4-18	6-4-18	
Iodomethane	ND	1.9	EPA 8260C	6-4-18	6-4-18	
Carbon Disulfide	ND	0.36	EPA 8260C	6-4-18	6-4-18	
Methylene Chloride	ND	1.0	EPA 8260C	6-4-18	6-4-18	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,1-Dichloroethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Vinyl Acetate	ND	1.0	EPA 8260C	6-4-18	6-4-18	
2,2-Dichloropropane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
2-Butanone	ND	5.0	EPA 8260C	6-4-18	6-4-18	
Bromochloromethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Chloroform	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Carbon Tetrachloride	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,1-Dichloropropene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Benzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2-Dichloroethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Trichloroethene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2-Dichloropropane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Dibromomethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Bromodichloromethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
2-Chloroethyl Vinyl Ether	ND	1.5	EPA 8260C	6-4-18	6-4-18	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	6-4-18	6-4-18	
Toluene	ND	1.0	EPA 8260C	6-4-18	6-4-18	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	6-4-18	6-4-18	



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VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID: MB0604W1						
1,1,2-Trichloroethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Tetrachloroethene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,3-Dichloropropane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
2-Hexanone	ND	2.0	EPA 8260C	6-4-18	6-4-18	
Dibromochloromethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2-Dibromoethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Chlorobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Ethylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
m,p-Xylene	ND	0.40	EPA 8260C	6-4-18	6-4-18	
o-Xylene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Styrene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Bromoform	ND	1.0	EPA 8260C	6-4-18	6-4-18	
Isopropylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Bromobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	6-4-18	6-4-18	
n-Propylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
2-Chlorotoluene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
4-Chlorotoluene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
tert-Butylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
sec-Butylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
p-Isopropyltoluene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
n-Butylbenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260C	6-4-18	6-4-18	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Hexachlorobutadiene	ND	1.0	EPA 8260C	6-4-18	6-4-18	
Naphthalene	ND	1.0	EPA 8260C	6-4-18	6-4-18	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260C	6-4-18	6-4-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	99	75-127				
Toluene-d8	97	80-127				
4-Bromofluorobenzene	91	78-125				



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VOLATILES by EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Water

Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery	RPD	RPD	Flags
					Recovery	Limits	Limits		Limit	
SPIKE BLANKS										
Laboratory ID:	SB0604W1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	7.83	8.03	10.0	10.0	78	80	62-129	3	15	
Benzene	8.31	8.84	10.0	10.0	83	88	77-127	6	15	
Trichloroethene	8.15	8.76	10.0	10.0	82	88	70-120	7	15	
Toluene	8.19	8.94	10.0	10.0	82	89	82-123	9	15	
Chlorobenzene	9.20	9.85	10.0	10.0	92	99	79-120	7	15	
Surrogate:										
Dibromofluoromethane					97	99	75-127			
Toluene-d8					93	97	80-127			
4-Bromofluorobenzene					93	97	78-125			



Date of Report: June 13, 2018
 Samples Submitted: June 1, 2018
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 Project: 4082-039-01

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
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Matrix: Sludge
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0607S1					
Dichlorodifluoromethane	ND	0.0014	EPA 8260C	6-7-18	6-7-18	
Chloromethane	ND	0.0050	EPA 8260C	6-7-18	6-7-18	
Vinyl Chloride	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
Bromomethane	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
Chloroethane	ND	0.0050	EPA 8260C	6-7-18	6-7-18	
Trichlorofluoromethane	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
1,1-Dichloroethene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
Acetone	ND	0.0050	EPA 8260C	6-7-18	6-7-18	
Iodomethane	ND	0.0050	EPA 8260C	6-7-18	6-7-18	
Carbon Disulfide	ND	0.0015	EPA 8260C	6-7-18	6-7-18	
Methylene Chloride	ND	0.0050	EPA 8260C	6-7-18	6-7-18	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
1,1-Dichloroethane	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
Vinyl Acetate	ND	0.0050	EPA 8260C	6-7-18	6-7-18	
2,2-Dichloropropane	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
2-Butanone	ND	0.0050	EPA 8260C	6-7-18	6-7-18	
Bromochloromethane	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
Chloroform	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
Carbon Tetrachloride	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
1,1-Dichloropropene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
Benzene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
Trichloroethene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
1,2-Dichloropropane	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
Dibromomethane	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
Bromodichloromethane	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260C	6-7-18	6-7-18	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
Methyl Isobutyl Ketone	ND	0.0050	EPA 8260C	6-7-18	6-7-18	
Toluene	ND	0.0050	EPA 8260C	6-7-18	6-7-18	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	



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VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID: MB0607S1						
1,1,2-Trichloroethane	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
Tetrachloroethene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
1,3-Dichloropropane	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
2-Hexanone	ND	0.0050	EPA 8260C	6-7-18	6-7-18	
Dibromochloromethane	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
Chlorobenzene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
Ethylbenzene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
m,p-Xylene	ND	0.0020	EPA 8260C	6-7-18	6-7-18	
o-Xylene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
Styrene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
Bromoform	ND	0.0050	EPA 8260C	6-7-18	6-7-18	
Isopropylbenzene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
Bromobenzene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
n-Propylbenzene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
2-Chlorotoluene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
4-Chlorotoluene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
1,3,5-Trimethylbenzene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
tert-Butylbenzene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
1,2,4-Trimethylbenzene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
sec-Butylbenzene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
p-Isopropyltoluene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
n-Butylbenzene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260C	6-7-18	6-7-18	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
Hexachlorobutadiene	ND	0.0050	EPA 8260C	6-7-18	6-7-18	
Naphthalene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260C	6-7-18	6-7-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	115	68-139				
Toluene-d8	116	79-128				
4-Bromofluorobenzene	114	71-132				



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 Project: 4082-039-01

VOLATILES by EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Sludge

Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery	RPD	RPD	Flags
					Recovery	Limits	Limits		Limit	
SPIKE BLANKS										
Laboratory ID:	SB0607S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	0.0459	0.0462	0.0500	0.0500	92	92	53-141	1	17	
Benzene	0.0522	0.0523	0.0500	0.0500	104	105	70-130	0	15	
Trichloroethene	0.0461	0.0461	0.0500	0.0500	92	92	74-122	0	16	
Toluene	0.0524	0.0524	0.0500	0.0500	105	105	76-130	0	15	
Chlorobenzene	0.0462	0.0459	0.0500	0.0500	92	92	75-120	1	14	
Surrogate:										
Dibromofluoromethane					96	99	68-139			
Toluene-d8					95	99	79-128			
4-Bromofluorobenzene					98	99	71-132			



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SEMIVOLATILES EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL
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Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0604W1					
n-Nitrosodimethylamine	ND	1.0	EPA 8270D	6-4-18	6-4-18	
Pyridine	ND	1.0	EPA 8270D	6-4-18	6-4-18	
Phenol	ND	1.0	EPA 8270D	6-4-18	6-4-18	
Aniline	ND	5.0	EPA 8270D	6-4-18	6-4-18	
bis(2-Chloroethyl)ether	ND	1.0	EPA 8270D	6-4-18	6-4-18	
2-Chlorophenol	ND	1.0	EPA 8270D	6-4-18	6-4-18	
1,3-Dichlorobenzene	ND	1.0	EPA 8270D	6-4-18	6-4-18	
1,4-Dichlorobenzene	ND	1.0	EPA 8270D	6-4-18	6-4-18	
Benzyl alcohol	ND	1.0	EPA 8270D	6-4-18	6-4-18	
1,2-Dichlorobenzene	ND	1.0	EPA 8270D	6-4-18	6-4-18	
2-Methylphenol (o-Cresol)	ND	1.0	EPA 8270D	6-4-18	6-4-18	
bis(2-Chloroisopropyl)ether	ND	1.0	EPA 8270D	6-4-18	6-4-18	
(3+4)-Methylphenol (m,p-Cresol)	ND	1.0	EPA 8270D	6-4-18	6-4-18	
n-Nitroso-di-n-propylamine	ND	1.0	EPA 8270D	6-4-18	6-4-18	
Hexachloroethane	ND	1.0	EPA 8270D	6-4-18	6-4-18	
Nitrobenzene	ND	1.0	EPA 8270D	6-4-18	6-4-18	
Isophorone	ND	1.0	EPA 8270D	6-4-18	6-4-18	
2-Nitrophenol	ND	1.0	EPA 8270D	6-4-18	6-4-18	
2,4-Dimethylphenol	ND	1.0	EPA 8270D	6-4-18	6-4-18	
bis(2-Chloroethoxy)methane	ND	1.0	EPA 8270D	6-4-18	6-4-18	
2,4-Dichlorophenol	ND	1.0	EPA 8270D	6-4-18	6-4-18	
1,2,4-Trichlorobenzene	ND	1.0	EPA 8270D	6-4-18	6-4-18	
Naphthalene	ND	0.10	EPA 8270D/SIM	6-4-18	6-4-18	
4-Chloroaniline	ND	1.0	EPA 8270D	6-4-18	6-4-18	
Hexachlorobutadiene	ND	1.0	EPA 8270D	6-4-18	6-4-18	
4-Chloro-3-methylphenol	ND	1.0	EPA 8270D	6-4-18	6-4-18	
2-Methylnaphthalene	ND	0.10	EPA 8270D/SIM	6-4-18	6-4-18	
1-Methylnaphthalene	ND	0.10	EPA 8270D/SIM	6-4-18	6-4-18	
Hexachlorocyclopentadiene	ND	1.0	EPA 8270D	6-4-18	6-4-18	
2,4,6-Trichlorophenol	ND	1.0	EPA 8270D	6-4-18	6-4-18	
2,3-Dichloroaniline	ND	1.0	EPA 8270D	6-4-18	6-4-18	
2,4,5-Trichlorophenol	ND	1.0	EPA 8270D	6-4-18	6-4-18	
2-Chloronaphthalene	ND	1.0	EPA 8270D	6-4-18	6-4-18	
2-Nitroaniline	ND	1.0	EPA 8270D	6-4-18	6-4-18	
1,4-Dinitrobenzene	ND	1.0	EPA 8270D	6-4-18	6-4-18	
Dimethylphthalate	ND	1.0	EPA 8270D	6-4-18	6-4-18	
1,3-Dinitrobenzene	ND	1.0	EPA 8270D	6-4-18	6-4-18	
2,6-Dinitrotoluene	ND	1.0	EPA 8270D	6-4-18	6-4-18	
1,2-Dinitrobenzene	ND	1.0	EPA 8270D	6-4-18	6-4-18	
Acenaphthylene	ND	0.10	EPA 8270D/SIM	6-4-18	6-4-18	
3-Nitroaniline	ND	1.0	EPA 8270D	6-4-18	6-4-18	



Date of Report: June 13, 2018
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SEMIVOLATILES EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0604W1					
2,4-Dinitrophenol	ND	5.0	EPA 8270D	6-4-18	6-4-18	
Acenaphthene	ND	0.10	EPA 8270D/SIM	6-4-18	6-4-18	
4-Nitrophenol	ND	5.0	EPA 8270D	6-4-18	6-4-18	
2,4-Dinitrotoluene	ND	1.0	EPA 8270D	6-4-18	6-4-18	
Dibenzofuran	ND	1.0	EPA 8270D	6-4-18	6-4-18	
2,3,5,6-Tetrachlorophenol	ND	1.0	EPA 8270D	6-4-18	6-4-18	
2,3,4,6-Tetrachlorophenol	ND	1.0	EPA 8270D	6-4-18	6-4-18	
Diethylphthalate	ND	1.0	EPA 8270D	6-4-18	6-4-18	
4-Chlorophenyl-phenylether	ND	1.0	EPA 8270D	6-4-18	6-4-18	
4-Nitroaniline	ND	1.0	EPA 8270D	6-4-18	6-4-18	
Fluorene	ND	0.10	EPA 8270D/SIM	6-4-18	6-4-18	
4,6-Dinitro-2-methylphenol	ND	5.0	EPA 8270D	6-4-18	6-4-18	
n-Nitrosodiphenylamine	ND	1.0	EPA 8270D	6-4-18	6-4-18	
1,2-Diphenylhydrazine	ND	1.0	EPA 8270D	6-4-18	6-4-18	
4-Bromophenyl-phenylether	ND	1.0	EPA 8270D	6-4-18	6-4-18	
Hexachlorobenzene	ND	1.0	EPA 8270D	6-4-18	6-4-18	
Pentachlorophenol	ND	5.0	EPA 8270D	6-4-18	6-4-18	
Phenanthrene	ND	0.10	EPA 8270D/SIM	6-4-18	6-4-18	
Anthracene	ND	0.10	EPA 8270D/SIM	6-4-18	6-4-18	
Carbazole	ND	1.0	EPA 8270D	6-4-18	6-4-18	
Di-n-butylphthalate	ND	3.5	EPA 8270D	6-4-18	6-4-18	
Fluoranthene	ND	0.10	EPA 8270D/SIM	6-4-18	6-4-18	
Benzidine	ND	5.0	EPA 8270D	6-4-18	6-4-18	
Pyrene	ND	0.10	EPA 8270D/SIM	6-4-18	6-4-18	
Butylbenzylphthalate	ND	1.0	EPA 8270D	6-4-18	6-4-18	
bis-2-Ethylhexyladipate	ND	1.0	EPA 8270D	6-4-18	6-4-18	
3,3'-Dichlorobenzidine	ND	1.0	EPA 8270D	6-4-18	6-4-18	
Benzo[a]anthracene	ND	0.010	EPA 8270D/SIM	6-4-18	6-4-18	
Chrysene	ND	0.010	EPA 8270D/SIM	6-4-18	6-4-18	
bis(2-Ethylhexyl)phthalate	ND	1.0	EPA 8270D	6-4-18	6-4-18	
Di-n-octylphthalate	ND	1.0	EPA 8270D	6-4-18	6-4-18	
Benzo[b]fluoranthene	ND	0.010	EPA 8270D/SIM	6-4-18	6-4-18	
Benzo(j,k)fluoranthene	ND	0.010	EPA 8270D/SIM	6-4-18	6-4-18	
Benzo[a]pyrene	ND	0.010	EPA 8270D/SIM	6-4-18	6-4-18	
Indeno[1,2,3-cd]pyrene	ND	0.010	EPA 8270D/SIM	6-4-18	6-4-18	
Dibenz[a,h]anthracene	ND	0.010	EPA 8270D/SIM	6-4-18	6-4-18	
Benzo[g,h,i]perylene	ND	0.010	EPA 8270D/SIM	6-4-18	6-4-18	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	44	12 - 80				
Phenol-d6	35	10 - 82				
Nitrobenzene-d5	67	30 - 103				
2-Fluorobiphenyl	71	33 - 103				
2,4,6-Tribromophenol	86	20 - 121				
Terphenyl-d14	73	32 - 113				



Date of Report: June 13, 2018
 Samples Submitted: June 1, 2018
 Laboratory Reference: 1806-010
 Project: 4082-039-01

**SEMIVOLATILES EPA 8270D/SIM
 SB/SBD QUALITY CONTROL**

Matrix: Water
 Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0604W1									
	SB	SBD	SB	SBD	SB	SBD				
Phenol	15.8	15.6	40.0	40.0	40	39	24 - 52	1	28	
2-Chlorophenol	26.3	26.6	40.0	40.0	66	67	44 - 91	1	30	
1,4-Dichlorobenzene	12.8	12.7	20.0	20.0	64	64	36 - 82	1	33	
n-Nitroso-di-n-propylamine	13.8	13.8	20.0	20.0	69	69	43 - 93	0	29	
1,2,4-Trichlorobenzene	16.3	16.3	20.0	20.0	82	82	40 - 86	0	28	
4-Chloro-3-methylphenol	29.4	29.4	40.0	40.0	74	74	49 - 99	0	25	
Acenaphthene	14.8	15.0	20.0	20.0	74	75	47 - 90	1	25	
4-Nitrophenol	15.8	15.2	40.0	40.0	40	38	23 - 61	4	30	
2,4-Dinitrotoluene	15.5	15.3	20.0	20.0	78	77	42 - 97	1	26	
Pentachlorophenol	26.7	27.5	40.0	40.0	67	69	39 - 115	3	29	
Pyrene	15.2	14.9	20.0	20.0	76	75	51 - 100	2	22	
Surrogate:										
2-Fluorophenol					43	43	12 - 80			
Phenol-d6					34	33	10 - 82			
Nitrobenzene-d5					63	64	30 - 103			
2-Fluorobiphenyl					69	66	33 - 103			
2,4,6-Tribromophenol					81	81	20 - 121			
Terphenyl-d14					70	68	32 - 113			



Date of Report: June 13, 2018
 Samples Submitted: June 1, 2018
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 Project: 4082-039-01

SEMIVOLATILES EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL
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Matrix: Sludge
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0605S1					
n-Nitrosodimethylamine	ND	0.033	EPA 8270D	6-5-18	6-5-18	
Pyridine	ND	0.33	EPA 8270D	6-5-18	6-5-18	
Phenol	ND	0.033	EPA 8270D	6-5-18	6-5-18	
Aniline	ND	0.17	EPA 8270D	6-5-18	6-5-18	
bis(2-Chloroethyl)ether	ND	0.033	EPA 8270D	6-5-18	6-5-18	
2-Chlorophenol	ND	0.033	EPA 8270D	6-5-18	6-5-18	
1,3-Dichlorobenzene	ND	0.033	EPA 8270D	6-5-18	6-5-18	
1,4-Dichlorobenzene	ND	0.033	EPA 8270D	6-5-18	6-5-18	
Benzyl alcohol	ND	0.17	EPA 8270D	6-5-18	6-5-18	
1,2-Dichlorobenzene	ND	0.033	EPA 8270D	6-5-18	6-5-18	
2-Methylphenol (o-Cresol)	ND	0.033	EPA 8270D	6-5-18	6-5-18	
bis(2-Chloroisopropyl)ether	ND	0.033	EPA 8270D	6-5-18	6-5-18	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.033	EPA 8270D	6-5-18	6-5-18	
n-Nitroso-di-n-propylamine	ND	0.033	EPA 8270D	6-5-18	6-5-18	
Hexachloroethane	ND	0.033	EPA 8270D	6-5-18	6-5-18	
Nitrobenzene	ND	0.033	EPA 8270D	6-5-18	6-5-18	
Isophorone	ND	0.033	EPA 8270D	6-5-18	6-5-18	
2-Nitrophenol	ND	0.033	EPA 8270D	6-5-18	6-5-18	
2,4-Dimethylphenol	ND	0.033	EPA 8270D	6-5-18	6-5-18	
bis(2-Chloroethoxy)methane	ND	0.033	EPA 8270D	6-5-18	6-5-18	
2,4-Dichlorophenol	ND	0.033	EPA 8270D	6-5-18	6-5-18	
1,2,4-Trichlorobenzene	ND	0.033	EPA 8270D	6-5-18	6-5-18	
Naphthalene	ND	0.0067	EPA 8270D/SIM	6-5-18	6-5-18	
4-Chloroaniline	ND	0.17	EPA 8270D	6-5-18	6-5-18	
Hexachlorobutadiene	ND	0.033	EPA 8270D	6-5-18	6-5-18	
4-Chloro-3-methylphenol	ND	0.033	EPA 8270D	6-5-18	6-5-18	
2-Methylnaphthalene	ND	0.0067	EPA 8270D/SIM	6-5-18	6-5-18	
1-Methylnaphthalene	ND	0.0067	EPA 8270D/SIM	6-5-18	6-5-18	
Hexachlorocyclopentadiene	ND	0.033	EPA 8270D	6-5-18	6-5-18	
2,4,6-Trichlorophenol	ND	0.033	EPA 8270D	6-5-18	6-5-18	
2,3-Dichloroaniline	ND	0.033	EPA 8270D	6-5-18	6-5-18	
2,4,5-Trichlorophenol	ND	0.033	EPA 8270D	6-5-18	6-5-18	
2-Chloronaphthalene	ND	0.033	EPA 8270D	6-5-18	6-5-18	
2-Nitroaniline	ND	0.033	EPA 8270D	6-5-18	6-5-18	
1,4-Dinitrobenzene	ND	0.033	EPA 8270D	6-5-18	6-5-18	
Dimethylphthalate	ND	0.033	EPA 8270D	6-5-18	6-5-18	
1,3-Dinitrobenzene	ND	0.033	EPA 8270D	6-5-18	6-5-18	
2,6-Dinitrotoluene	ND	0.033	EPA 8270D	6-5-18	6-5-18	
1,2-Dinitrobenzene	ND	0.033	EPA 8270D	6-5-18	6-5-18	
Acenaphthylene	ND	0.0067	EPA 8270D/SIM	6-5-18	6-5-18	
3-Nitroaniline	ND	0.033	EPA 8270D	6-5-18	6-5-18	



Date of Report: June 13, 2018
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SEMIVOLATILES EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0605S1					
2,4-Dinitrophenol	ND	0.17	EPA 8270D	6-5-18	6-5-18	
Acenaphthene	ND	0.0067	EPA 8270D/SIM	6-5-18	6-5-18	
4-Nitrophenol	ND	0.033	EPA 8270D	6-5-18	6-5-18	
2,4-Dinitrotoluene	ND	0.033	EPA 8270D	6-5-18	6-5-18	
Dibenzofuran	ND	0.033	EPA 8270D	6-5-18	6-5-18	
2,3,5,6-Tetrachlorophenol	ND	0.033	EPA 8270D	6-5-18	6-5-18	
2,3,4,6-Tetrachlorophenol	ND	0.033	EPA 8270D	6-5-18	6-5-18	
Diethylphthalate	ND	0.17	EPA 8270D	6-5-18	6-5-18	
4-Chlorophenyl-phenylether	ND	0.033	EPA 8270D	6-5-18	6-5-18	
4-Nitroaniline	ND	0.033	EPA 8270D	6-5-18	6-5-18	
Fluorene	ND	0.0067	EPA 8270D/SIM	6-5-18	6-5-18	
4,6-Dinitro-2-methylphenol	ND	0.17	EPA 8270D	6-5-18	6-5-18	
n-Nitrosodiphenylamine	ND	0.033	EPA 8270D	6-5-18	6-5-18	
1,2-Diphenylhydrazine	ND	0.033	EPA 8270D	6-5-18	6-5-18	
4-Bromophenyl-phenylether	ND	0.033	EPA 8270D	6-5-18	6-5-18	
Hexachlorobenzene	ND	0.033	EPA 8270D	6-5-18	6-5-18	
Pentachlorophenol	ND	0.17	EPA 8270D	6-5-18	6-5-18	
Phenanthrene	ND	0.0067	EPA 8270D/SIM	6-5-18	6-5-18	
Anthracene	ND	0.0067	EPA 8270D/SIM	6-5-18	6-5-18	
Carbazole	ND	0.033	EPA 8270D	6-5-18	6-5-18	
Di-n-butylphthalate	ND	0.17	EPA 8270D	6-5-18	6-5-18	
Fluoranthene	ND	0.0067	EPA 8270D/SIM	6-5-18	6-5-18	
Benzidine	ND	0.33	EPA 8270D	6-5-18	6-5-18	
Pyrene	ND	0.0067	EPA 8270D/SIM	6-5-18	6-5-18	
Butylbenzylphthalate	ND	0.17	EPA 8270D	6-5-18	6-5-18	
bis-2-Ethylhexyladipate	ND	0.17	EPA 8270D	6-5-18	6-5-18	
3,3'-Dichlorobenzidine	ND	0.17	EPA 8270D	6-5-18	6-5-18	
Benzo[a]anthracene	ND	0.0067	EPA 8270D/SIM	6-5-18	6-5-18	
Chrysene	ND	0.0067	EPA 8270D/SIM	6-5-18	6-5-18	
bis(2-Ethylhexyl)phthalate	ND	0.17	EPA 8270D	6-5-18	6-5-18	
Di-n-octylphthalate	ND	0.17	EPA 8270D	6-5-18	6-5-18	
Benzo[b]fluoranthene	ND	0.0067	EPA 8270D/SIM	6-5-18	6-5-18	
Benzo(j,k)fluoranthene	ND	0.0067	EPA 8270D/SIM	6-5-18	6-5-18	
Benzo[a]pyrene	ND	0.0067	EPA 8270D/SIM	6-5-18	6-5-18	
Indeno[1,2,3-cd]pyrene	ND	0.0067	EPA 8270D/SIM	6-5-18	6-5-18	
Dibenz[a,h]anthracene	ND	0.0067	EPA 8270D/SIM	6-5-18	6-5-18	
Benzo[g,h,i]perylene	ND	0.0067	EPA 8270D/SIM	6-5-18	6-5-18	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	54	19 - 103				
Phenol-d6	59	30 - 103				
Nitrobenzene-d5	59	27 - 105				
2-Fluorobiphenyl	65	36 - 102				
2,4,6-Tribromophenol	82	33 - 110				
Terphenyl-d14	66	38 - 108				



Date of Report: June 13, 2018
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 Laboratory Reference: 1806-010
 Project: 4082-039-01

**SEMIVOLATILES EPA 8270D/SIM
 SB/SBD QUALITY CONTROL**

Matrix: Sludge
 Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0605S1									
	SB	SBD	SB	SBD	SB	SBD				
Phenol	0.855	0.904	1.33	1.33	64	68	45 - 94	6	29	
2-Chlorophenol	0.836	0.874	1.33	1.33	63	66	46 - 94	4	33	
1,4-Dichlorobenzene	0.398	0.426	0.667	0.667	60	64	42 - 91	7	37	
n-Nitroso-di-n-propylamine	0.437	0.466	0.667	0.667	66	70	45 - 95	6	26	
1,2,4-Trichlorobenzene	0.489	0.529	0.667	0.667	73	79	45 - 92	8	32	
4-Chloro-3-methylphenol	0.991	1.03	1.33	1.33	75	77	55 - 97	4	21	
Acenaphthene	0.469	0.479	0.667	0.667	70	72	48 - 91	2	21	
4-Nitrophenol	1.02	1.03	1.33	1.33	77	77	53 - 102	1	20	
2,4-Dinitrotoluene	0.501	0.532	0.667	0.667	75	80	47 - 96	6	19	
Pentachlorophenol	0.968	1.06	1.33	1.33	73	80	35 - 118	9	26	
Pyrene	0.479	0.505	0.667	0.667	72	76	55 - 95	5	17	
Surrogate:										
2-Fluorophenol					56	57	19 - 103			
Phenol-d6					59	61	30 - 103			
Nitrobenzene-d5					60	62	27 - 105			
2-Fluorobiphenyl					65	63	36 - 102			
2,4,6-Tribromophenol					85	86	33 - 110			
Terphenyl-d14					67	69	38 - 108			



Date of Report: June 13, 2018
 Samples Submitted: June 1, 2018
 Laboratory Reference: 1806-010
 Project: 4082-039-01

**TOTAL METALS
 EPA 200.8
 METHOD BLANK QUALITY CONTROL**

Date Extracted: 6-5-18
 Date Analyzed: 6-5-18

 Matrix: Water
 Units: ug/L (ppb)

 Lab ID: MB0605WM1

Analyte	Method	Result	PQL
Antimony	200.8	ND	5.6
Arsenic	200.8	ND	3.3
Barium	200.8	ND	28
Beryllium	200.8	ND	11
Cadmium	200.8	ND	4.4
Chromium	200.8	ND	11
Copper	200.8	ND	11
Lead	200.8	ND	1.1
Nickel	200.8	ND	22
Selenium	200.8	ND	5.6
Silver	200.8	ND	11
Thallium	200.8	ND	5.6
Zinc	200.8	ND	28



Date of Report: June 13, 2018
Samples Submitted: June 1, 2018
Laboratory Reference: 1806-010
Project: 4082-039-01

**TOTAL MERCURY
EPA 7470A
METHOD BLANK QUALITY CONTROL**

Date Extracted: 6-4-18
Date Analyzed: 6-4-18

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0604W1

Analyte	Method	Result	PQL
Mercury	7470A	ND	0.50



Date of Report: June 13, 2018
 Samples Submitted: June 1, 2018
 Laboratory Reference: 1806-010
 Project: 4082-039-01

**TOTAL METALS
 EPA 200.8
 DUPLICATE QUALITY CONTROL**

Date Extracted: 6-5-18

Date Analyzed: 6-5-18

Matrix: Water

Units: ug/L (ppb)

Lab ID: 05-323-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Antimony	ND	ND	NA	5.6	
Arsenic	ND	ND	NA	3.3	
Barium	ND	ND	NA	28	
Beryllium	ND	ND	NA	11	
Cadmium	ND	ND	NA	4.4	
Chromium	ND	ND	NA	11	
Copper	ND	ND	NA	11	
Lead	ND	ND	NA	1.1	
Nickel	ND	ND	NA	22	
Selenium	ND	ND	NA	5.6	
Silver	ND	ND	NA	11	
Thallium	ND	ND	NA	5.6	
Zinc	ND	ND	NA	28	



Date of Report: June 13, 2018
Samples Submitted: June 1, 2018
Laboratory Reference: 1806-010
Project: 4082-039-01

**TOTAL MERCURY
EPA 7470A
DUPLICATE QUALITY CONTROL**

Date Extracted: 6-4-18

Date Analyzed: 6-4-18

Matrix: Water

Units: ug/L (ppb)

Lab ID: 06-018-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Mercury	ND	ND	NA	0.50	



Date of Report: June 13, 2018
 Samples Submitted: June 1, 2018
 Laboratory Reference: 1806-010
 Project: 4082-039-01

**TOTAL METALS
 EPA 200.8
 MS/MSD QUALITY CONTROL**

Date Extracted: 6-5-18

Date Analyzed: 6-5-18

Matrix: Water

Units: ug/L (ppb)

Lab ID: 05-323-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Antimony	222	226	102	234	105	4	
Arsenic	222	230	104	231	104	0	
Barium	222	229	103	234	106	2	
Beryllium	222	224	101	227	102	2	
Cadmium	222	221	99	222	100	1	
Chromium	222	214	97	211	95	2	
Copper	222	204	92	202	91	1	
Lead	222	221	100	222	100	0	
Nickel	222	215	97	213	96	1	
Selenium	222	209	94	210	95	1	
Silver	222	216	97	215	97	1	
Thallium	222	223	100	224	101	1	
Zinc	222	213	96	209	94	2	



Date of Report: June 13, 2018
Samples Submitted: June 1, 2018
Laboratory Reference: 1806-010
Project: 4082-039-01

**TOTAL MERCURY
EPA 7470A
MS/MSD QUALITY CONTROL**

Date Extracted: 6-4-18

Date Analyzed: 6-4-18

Matrix: Water

Units: ug/L (ppb)

Lab ID: 06-018-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Mercury	12.5	11.2	89	11.3	90	1	



Date of Report: June 13, 2018
 Samples Submitted: June 1, 2018
 Laboratory Reference: 1806-010
 Project: 4082-039-01

**TOTAL METALS
 EPA 6010D
 METHOD BLANK QUALITY CONTROL**

Date Extracted: 6-11-18
 Date Analyzed: 6-11-18

 Matrix: Sludge
 Units: mg/kg (ppm)

 Lab ID: MB0611SH1

Analyte	Method	Result	PQL
Arsenic	6010D	ND	5.0
Barium	6010D	ND	2.5
Cadmium	6010D	ND	0.50
Chromium	6010D	ND	0.50
Lead	6010D	ND	5.0
Selenium	6010D	ND	5.0
Silver	6010D	ND	1.0



Date of Report: June 13, 2018
Samples Submitted: June 1, 2018
Laboratory Reference: 1806-010
Project: 4082-039-01

**TOTAL MERCURY
EPA 7471B
METHOD BLANK QUALITY CONTROL**

Date Extracted: 6-8-18
Date Analyzed: 6-8-18

Matrix: Sludge
Units: mg/kg (ppm)

Lab ID: MB0608S1

Analyte	Method	Result	PQL
Mercury	7471B	ND	0.25



Date of Report: June 13, 2018
 Samples Submitted: June 1, 2018
 Laboratory Reference: 1806-010
 Project: 4082-039-01

**TOTAL METALS
 EPA 6010D
 DUPLICATE QUALITY CONTROL**

Date Extracted: 6-11-18
 Date Analyzed: 6-11-18

 Matrix: Sludge
 Units: mg/kg (ppm)

 Lab ID: 06-015-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	ND	ND	NA	5.0	
Barium	5.00	4.89	2	2.5	
Cadmium	ND	ND	NA	0.50	
Chromium	0.785	0.690	13	0.50	
Lead	ND	ND	NA	5.0	
Selenium	ND	ND	NA	5.0	
Silver	ND	ND	NA	1.0	



Date of Report: June 13, 2018
Samples Submitted: June 1, 2018
Laboratory Reference: 1806-010
Project: 4082-039-01

**TOTAL MERCURY
EPA 7471B
DUPLICATE QUALITY CONTROL**

Date Extracted: 6-8-18

Date Analyzed: 6-8-18

Matrix: Sludge

Units: mg/kg (ppm)

Lab ID: 06-044-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Mercury	ND	ND	NA	0.25	



Date of Report: June 13, 2018
 Samples Submitted: June 1, 2018
 Laboratory Reference: 1806-010
 Project: 4082-039-01

**TOTAL METALS
 EPA 6010D
 MS/MSD QUALITY CONTROL**

Date Extracted: 6-11-18

Date Analyzed: 6-11-18

Matrix: Sludge

Units: mg/kg (ppm)

Lab ID: 06-015-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	99.9	100	98.4	98	2	
Barium	100	93.9	89	93.6	89	0	
Cadmium	50.0	43.5	87	43.9	88	1	
Chromium	100	91.3	91	91.4	91	0	
Lead	250	223	89	226	91	2	
Selenium	100	102	102	102	102	0	
Silver	25.0	24.5	98	24.3	97	1	



Date of Report: June 13, 2018
Samples Submitted: June 1, 2018
Laboratory Reference: 1806-010
Project: 4082-039-01

TOTAL MERCURY
EPA 7471B
MS/MSD QUALITY CONTROL

Date Extracted: 6-8-18

Date Analyzed: 6-8-18

Matrix: Sludge

Units: mg/kg (ppm)

Lab ID: 06-044-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Mercury	0.500	0.564	113	0.535	107	5	



Date of Report: June 13, 2018
Samples Submitted: June 1, 2018
Laboratory Reference: 1806-010
Project: 4082-039-01

% MOISTURE

Date Analyzed: 6-5-18

Client ID	Lab ID	% Moisture
FL252-Drilling Mud-Drum	06-010-03	56





Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B - The analyte indicated was also found in the blank sample.
- C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E - The value reported exceeds the quantitation range and is an estimate.
- F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I - Compound recovery is outside of the control limits.
- J - The value reported was below the practical quantitation limit. The value is an estimate.
- K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L - The RPD is outside of the control limits.
- M - Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
- N - Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 - Hydrocarbons in diesel range are impacting lube oil range results.
- O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P - The RPD of the detected concentrations between the two columns is greater than 40.
- Q - Surrogate recovery is outside of the control limits.
- S - Surrogate recovery data is not available due to the necessary dilution of the sample.
- T - The sample chromatogram is not similar to a typical _____.
- U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 - The practical quantitation limit is elevated due to interferences present in the sample.
- V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X - Sample extract treated with a mercury cleanup procedure.
- X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.
- Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
- Z -
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference





Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664

**Professional
Analytical
Services**

Jun 13 2018
On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister

Dear David Baumeister:

Enclosed please find the analytical data for your project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
FL252-MWB2-20180601	Water	18-A009324	CONV

Your sample was received on Monday, June 4, 2018. At the time of receipt, the sample was logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to contact me.

Sincerely,


Aaron W. Young
Laboratory Manager

Project #: 4082-039-01
PO Number: 06-010

BACT = Bacteriological
CONV = Conventional

MET = Metals
ORG = Organics

NUT=Nutrients
DEM=Demand

MIN=Minerals

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com



**Professional
Analytical
Services**

ANALYSIS REPORT

On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
Project #: 4082-039-01
PO Number: 06-010
All results reported on an as received basis.

Date Received: 06/04/18
Date Reported: 6/13/18

AMTEST Identification Number	18-A009324
Client Identification	FL252-MWB2-20180601
Sampling Date	06/01/18, 10:20

Conventional

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Cyanide	< 0.005	mg/l		0.005	EPA 335.4	AW	06/07/18


Aaron W. Young
Laboratory Manager

QC Summary for sample number: 18-A009324

MATRIX SPIKES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
18-A009295	Total Cyanide	mg/l	0.021	0.11	0.10	89.00 %
18-A009295	Total Cyanide	mg/l	0.021	0.11	0.10	89.00 %
18-A009324	Total Cyanide	mg/l	< 0.005	0.10	0.10	100.00 %
18-A009324	Total Cyanide	mg/l	< 0.005	0.11	0.10	110.00 %

MATRIX SPIKE DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE + SPK	MSD VALUE	RPD
Spike	Total Cyanide	mg/l	0.11	0.11	0.00
Spike	Total Cyanide	mg/l	0.10	0.11	9.5

STANDARD REFERENCE MATERIALS

ANALYTE	UNITS	TRUE VALUE	MEASURED VALUE	RECOVERY
Total Cyanide	mg/l	0.10	0.11	110. %
Total Cyanide	mg/l	0.10	0.097	97.0 %

BLANKS

ANALYTE	UNITS	RESULT
Total Cyanide	mg/l	< 0.005
Total Cyanide	mg/l	< 0.005



Laboratory Reference #: 06-010

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 4082-039-01

Project Name:

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analyses
FL252-MWB2-20180601	9374	6/1/18	10:20	Water	1	Cyanide
Signature _____		Company _____	Date _____	Time _____	Comments/Special Instructions _____	
Relinquished by:	[Signature]	Acute PC	6/4/18	9:30		
Received by:	[Signature]	AMTST T=3.7	6/4/18	9:30		
Relinquished by:						
Received by:						
Relinquished by:						
Received by:						



Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Chain of Custody

Page _____ of _____

[illegible]



14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

June 13, 2018

Marsi Beeson
GeoEngineers, Inc.
12000 NW Naito Prkway, Suite 180
Portland, OR 97209

Re: Analytical Data for Project 4082-039-01
Laboratory Reference No. 1805-245

Dear Marsi:

Enclosed are the analytical results and associated quality control data for samples submitted on May 23, 2018.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read 'DB', with a long horizontal stroke extending to the right.

David Baumeister
Project Manager

Enclosures



OnSite Environmental, Inc. 14648 NE 95th Street, Redmond, WA 98052 (425) 883-3881

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: June 13, 2018
Samples Submitted: May 23, 2018
Laboratory Reference: 1805-245
Project: 4082-039-01

Case Narrative

Samples were collected on May 22, 2018 and received by the laboratory on May 23, 2018. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.



Date of Report: June 13, 2018
Samples Submitted: May 23, 2018
Laboratory Reference: 1805-245
Project: 4082-039-01

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
FL252-B1-Drum-S	05-245-01	Soil	5-22-18	5-23-18	



Date of Report: June 13, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-245
 Project: 4082-039-01

NWTPH-Gx

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B1-Drum-S					
Laboratory ID:	05-245-01					
Gasoline	ND	6.1	NWTPH-Gx	5-30-18	5-30-18	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	80	57-129				



Date of Report: June 13, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-245
 Project: 4082-039-01

NWTPH-Dx

Matrix: Soil
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B1-Drum-S					
Laboratory ID:	05-245-01					
Diesel Range Organics	ND	28	NWTPH-Dx	5-25-18	5-29-18	
Lube Oil Range Organics	ND	56	NWTPH-Dx	5-25-18	5-29-18	
Surrogate:	Percent Recovery	Control Limits				
<i>o</i>-Terphenyl	101	50-150				



Date of Report: June 13, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-245
 Project: 4082-039-01

VOLATILES EPA 8260C
 page 1 of 2

Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:		FL252-B1-Drum-S				
Laboratory ID:		05-245-01				
Dichlorodifluoromethane	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Chloromethane	ND	0.0053	EPA 8260C	5-30-18	5-30-18	
Vinyl Chloride	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Bromomethane	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Chloroethane	ND	0.0053	EPA 8260C	5-30-18	5-30-18	
Trichlorofluoromethane	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
1,1-Dichloroethene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Acetone	ND	0.0053	EPA 8260C	5-30-18	5-30-18	
Iodomethane	ND	0.0053	EPA 8260C	5-30-18	5-30-18	
Carbon Disulfide	ND	0.0014	EPA 8260C	5-30-18	5-30-18	
Methylene Chloride	ND	0.0053	EPA 8260C	5-30-18	5-30-18	
(trans) 1,2-Dichloroethene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Methyl t-Butyl Ether	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
1,1-Dichloroethane	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Vinyl Acetate	ND	0.0053	EPA 8260C	5-30-18	5-30-18	
2,2-Dichloropropane	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
(cis) 1,2-Dichloroethene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
2-Butanone	ND	0.0053	EPA 8260C	5-30-18	5-30-18	
Bromochloromethane	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Chloroform	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
1,1,1-Trichloroethane	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Carbon Tetrachloride	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
1,1-Dichloropropene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Benzene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
1,2-Dichloroethane	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Trichloroethene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
1,2-Dichloropropane	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Dibromomethane	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Bromodichloromethane	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
2-Chloroethyl Vinyl Ether	ND	0.0053	EPA 8260C	5-30-18	5-30-18	
(cis) 1,3-Dichloropropene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Methyl Isobutyl Ketone	ND	0.0053	EPA 8260C	5-30-18	5-30-18	
Toluene	ND	0.0053	EPA 8260C	5-30-18	5-30-18	
(trans) 1,3-Dichloropropene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	



Date of Report: June 13, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-245
 Project: 4082-039-01

VOLATILES EPA 8260C
 page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:		FL252-B1-Drum-S				
Laboratory ID:		05-245-01				
1,1,2-Trichloroethane	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Tetrachloroethene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
1,3-Dichloropropane	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
2-Hexanone	ND	0.0053	EPA 8260C	5-30-18	5-30-18	
Dibromochloromethane	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
1,2-Dibromoethane	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Chlorobenzene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
1,1,1,2-Tetrachloroethane	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Ethylbenzene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
m,p-Xylene	ND	0.0021	EPA 8260C	5-30-18	5-30-18	
o-Xylene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Styrene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Bromoform	ND	0.0053	EPA 8260C	5-30-18	5-30-18	
Isopropylbenzene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Bromobenzene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
1,1,2,2-Tetrachloroethane	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
1,2,3-Trichloropropane	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
n-Propylbenzene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
2-Chlorotoluene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
4-Chlorotoluene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
1,3,5-Trimethylbenzene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
tert-Butylbenzene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
1,2,4-Trimethylbenzene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
sec-Butylbenzene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
1,3-Dichlorobenzene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
p-Isopropyltoluene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
1,4-Dichlorobenzene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
1,2-Dichlorobenzene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
n-Butylbenzene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
1,2-Dibromo-3-chloropropane	ND	0.0053	EPA 8260C	5-30-18	5-30-18	
1,2,4-Trichlorobenzene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Hexachlorobutadiene	ND	0.0053	EPA 8260C	5-30-18	5-30-18	
Naphthalene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
1,2,3-Trichlorobenzene	ND	0.0011	EPA 8260C	5-30-18	5-30-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	111	68-139				
Toluene-d8	125	79-128				
4-Bromofluorobenzene	122	71-132				



Date of Report: June 13, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-245
 Project: 4082-039-01

SEMIVOLATILES EPA 8270D/SIM
 page 1 of 2

Matrix: Soil
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	FL252-B1-Drum-S					
Laboratory ID:	05-245-01					
n-Nitrosodimethylamine	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Pyridine	ND	0.37	EPA 8270D	5-31-18	5-31-18	
Phenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Aniline	ND	0.18	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroethyl)ether	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2-Chlorophenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Benzyl alcohol	ND	0.18	EPA 8270D	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2-Methylphenol (o-Cresol)	ND	0.037	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroisopropyl)ether	ND	0.037	EPA 8270D	5-31-18	5-31-18	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.037	EPA 8270D	5-31-18	5-31-18	
n-Nitroso-di-n-propylamine	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Hexachloroethane	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Nitrobenzene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Isophorone	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2-Nitrophenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2,4-Dimethylphenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroethoxy)methane	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2,4-Dichlorophenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Naphthalene	ND	0.0074	EPA 8270D/SIM	5-31-18	6-1-18	
4-Chloroaniline	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
4-Chloro-3-methylphenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2-Methylnaphthalene	ND	0.0074	EPA 8270D/SIM	5-31-18	6-1-18	
1-Methylnaphthalene	ND	0.0074	EPA 8270D/SIM	5-31-18	6-1-18	
Hexachlorocyclopentadiene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2,4,6-Trichlorophenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2,3-Dichloroaniline	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2,4,5-Trichlorophenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2-Chloronaphthalene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2-Nitroaniline	ND	0.037	EPA 8270D	5-31-18	5-31-18	
1,4-Dinitrobenzene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Dimethylphthalate	ND	0.037	EPA 8270D	5-31-18	5-31-18	
1,3-Dinitrobenzene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2,6-Dinitrotoluene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
1,2-Dinitrobenzene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Acenaphthylene	ND	0.0074	EPA 8270D/SIM	5-31-18	6-1-18	
3-Nitroaniline	ND	0.037	EPA 8270D	5-31-18	5-31-18	



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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: FL252-B1-Drum-S						
Laboratory ID: 05-245-01						
2,4-Dinitrophenol	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Acenaphthene	ND	0.0074	EPA 8270D/SIM	5-31-18	6-1-18	
4-Nitrophenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2,4-Dinitrotoluene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Dibenzofuran	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2,3,5,6-Tetrachlorophenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
2,3,4,6-Tetrachlorophenol	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Diethylphthalate	ND	0.18	EPA 8270D	5-31-18	5-31-18	
4-Chlorophenyl-phenylether	ND	0.037	EPA 8270D	5-31-18	5-31-18	
4-Nitroaniline	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Fluorene	ND	0.0074	EPA 8270D/SIM	5-31-18	6-1-18	
4,6-Dinitro-2-methylphenol	ND	0.18	EPA 8270D	5-31-18	5-31-18	
n-Nitrosodiphenylamine	ND	0.037	EPA 8270D	5-31-18	5-31-18	
1,2-Diphenylhydrazine	ND	0.037	EPA 8270D	5-31-18	5-31-18	
4-Bromophenyl-phenylether	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Hexachlorobenzene	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Pentachlorophenol	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Phenanthrene	0.019	0.0074	EPA 8270D/SIM	5-31-18	6-1-18	
Anthracene	ND	0.0074	EPA 8270D/SIM	5-31-18	6-1-18	
Carbazole	ND	0.037	EPA 8270D	5-31-18	5-31-18	
Di-n-butylphthalate	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Fluoranthene	0.046	0.037	EPA 8270D	5-31-18	5-31-18	
Benzidine	ND	0.37	EPA 8270D	5-31-18	5-31-18	
Pyrene	0.041	0.037	EPA 8270D	5-31-18	5-31-18	
Butylbenzylphthalate	ND	0.18	EPA 8270D	5-31-18	5-31-18	
bis-2-Ethylhexyladipate	ND	0.18	EPA 8270D	5-31-18	5-31-18	
3,3'-Dichlorobenzidine	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Benzo[a]anthracene	0.021	0.0074	EPA 8270D/SIM	5-31-18	6-1-18	
Chrysene	0.024	0.0074	EPA 8270D/SIM	5-31-18	6-1-18	
bis(2-Ethylhexyl)phthalate	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Di-n-octylphthalate	ND	0.18	EPA 8270D	5-31-18	5-31-18	
Benzo[b]fluoranthene	0.026	0.0074	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo(j,k)fluoranthene	0.011	0.0074	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[a]pyrene	0.019	0.0074	EPA 8270D/SIM	5-31-18	6-1-18	
Indeno[1,2,3-cd]pyrene	0.014	0.0074	EPA 8270D/SIM	5-31-18	6-1-18	
Dibenz[a,h]anthracene	ND	0.0074	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[g,h,i]perylene	0.012	0.0074	EPA 8270D/SIM	5-31-18	6-1-18	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	75	19 - 103				
Phenol-d6	73	30 - 103				
Nitrobenzene-d5	69	27 - 105				
2-Fluorobiphenyl	74	36 - 102				
2,4,6-Tribromophenol	94	33 - 110				
Terphenyl-d14	78	38 - 108				



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**TOTAL METALS
 EPA 6010D/7471B**

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	05-245-01					
Client ID:	FL252-B1-Drum-S					
Arsenic	ND	11	6010D	5-29-18	5-29-18	
Barium	92	2.8	6010D	5-29-18	5-29-18	
Cadmium	ND	0.55	6010D	5-29-18	5-29-18	
Chromium	67	0.55	6010D	5-29-18	5-29-18	
Lead	ND	5.5	6010D	5-29-18	5-29-18	
Mercury	ND	0.28	7471B	6-1-18	6-1-18	
Selenium	ND	11	6010D	5-29-18	5-29-18	
Silver	ND	1.1	6010D	5-29-18	5-29-18	



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**NWTPH-Gx
 QUALITY CONTROL**

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0530S1					
Gasoline	ND	5.0	NWTPH-Gx	5-30-18	5-30-18	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	80	57-129				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	05-301-01							
	ORIG	DUP						
Gasoline	ND	ND	NA	NA	NA	NA	30	
Surrogate:								
Fluorobenzene				83	86	57-129		



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**NWTPH-Dx
QUALITY CONTROL**

Matrix: Soil
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0525S1					
Diesel Range Organics	ND	25	NWTPH-Dx	5-25-18	5-25-18	
Lube Oil Range Organics	ND	50	NWTPH-Dx	5-25-18	5-25-18	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	105	50-150				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	05-257-35									
	ORIG	DUP								
Diesel Range	ND	ND	NA	NA		NA	NA	NA	NA	
Lube Oil Range	ND	ND	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						83	88	50-150		



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VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
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Matrix: Soil
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID: MB0530S1						
Dichlorodifluoromethane	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Chloromethane	ND	0.0050	EPA 8260C	5-30-18	5-30-18	
Vinyl Chloride	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Bromomethane	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Chloroethane	ND	0.0050	EPA 8260C	5-30-18	5-30-18	
Trichlorofluoromethane	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
1,1-Dichloroethene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Acetone	ND	0.0050	EPA 8260C	5-30-18	5-30-18	
Iodomethane	ND	0.0050	EPA 8260C	5-30-18	5-30-18	
Carbon Disulfide	ND	0.0013	EPA 8260C	5-30-18	5-30-18	
Methylene Chloride	ND	0.0050	EPA 8260C	5-30-18	5-30-18	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
1,1-Dichloroethane	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Vinyl Acetate	ND	0.0050	EPA 8260C	5-30-18	5-30-18	
2,2-Dichloropropane	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
2-Butanone	ND	0.0050	EPA 8260C	5-30-18	5-30-18	
Bromochloromethane	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Chloroform	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Carbon Tetrachloride	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
1,1-Dichloropropene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Benzene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Trichloroethene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
1,2-Dichloropropane	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Dibromomethane	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Bromodichloromethane	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260C	5-30-18	5-30-18	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Methyl Isobutyl Ketone	ND	0.0050	EPA 8260C	5-30-18	5-30-18	
Toluene	ND	0.0050	EPA 8260C	5-30-18	5-30-18	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	



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VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID: MB0530S1						
1,1,2-Trichloroethane	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Tetrachloroethene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
1,3-Dichloropropane	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
2-Hexanone	ND	0.0050	EPA 8260C	5-30-18	5-30-18	
Dibromochloromethane	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Chlorobenzene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Ethylbenzene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
m,p-Xylene	ND	0.0020	EPA 8260C	5-30-18	5-30-18	
o-Xylene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Styrene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Bromoform	ND	0.0050	EPA 8260C	5-30-18	5-30-18	
Isopropylbenzene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Bromobenzene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
n-Propylbenzene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
2-Chlorotoluene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
4-Chlorotoluene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
1,3,5-Trimethylbenzene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
tert-Butylbenzene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
1,2,4-Trimethylbenzene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
sec-Butylbenzene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
p-Isopropyltoluene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
n-Butylbenzene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260C	5-30-18	5-30-18	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Hexachlorobutadiene	ND	0.0050	EPA 8260C	5-30-18	5-30-18	
Naphthalene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260C	5-30-18	5-30-18	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	104	68-139				
Toluene-d8	116	79-128				
4-Bromofluorobenzene	116	71-132				



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VOLATILES by EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
 Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery	RPD	RPD	Flags
					Recovery	Limits	Limit			
SPIKE BLANKS										
Laboratory ID:	SB0530S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	0.0470	0.0475	0.0500	0.0500	94	95	53-141	1	17	
Benzene	0.0478	0.0479	0.0500	0.0500	96	96	70-130	0	15	
Trichloroethene	0.0487	0.0488	0.0500	0.0500	97	98	74-122	0	16	
Toluene	0.0525	0.0512	0.0500	0.0500	105	102	76-130	3	15	
Chlorobenzene	0.0488	0.0467	0.0500	0.0500	98	93	75-120	4	14	
Surrogate:										
Dibromofluoromethane					104	87	68-139			
Toluene-d8					118	96	79-128			
4-Bromofluorobenzene					121	96	71-132			



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SEMIVOLATILES EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL
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Matrix: Soil
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0531S1					
n-Nitrosodimethylamine	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Pyridine	ND	0.33	EPA 8270D	5-31-18	5-31-18	
Phenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Aniline	ND	0.17	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroethyl)ether	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2-Chlorophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,3-Dichlorobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,4-Dichlorobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Benzyl alcohol	ND	0.17	EPA 8270D	5-31-18	5-31-18	
1,2-Dichlorobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2-Methylphenol (o-Cresol)	ND	0.033	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroisopropyl)ether	ND	0.033	EPA 8270D	5-31-18	5-31-18	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.033	EPA 8270D	5-31-18	5-31-18	
n-Nitroso-di-n-propylamine	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Hexachloroethane	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Nitrobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Isophorone	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2-Nitrophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,4-Dimethylphenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
bis(2-Chloroethoxy)methane	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,4-Dichlorophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,2,4-Trichlorobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Naphthalene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
4-Chloroaniline	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Hexachlorobutadiene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
4-Chloro-3-methylphenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2-Methylnaphthalene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
1-Methylnaphthalene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Hexachlorocyclopentadiene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,4,6-Trichlorophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,3-Dichloroaniline	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,4,5-Trichlorophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2-Chloronaphthalene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2-Nitroaniline	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,4-Dinitrobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Dimethylphthalate	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,3-Dinitrobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,6-Dinitrotoluene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,2-Dinitrobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Acenaphthylene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
3-Nitroaniline	ND	0.033	EPA 8270D	5-31-18	5-31-18	



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SEMIVOLATILES EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0531S1					
2,4-Dinitrophenol	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Acenaphthene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
4-Nitrophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,4-Dinitrotoluene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Dibenzofuran	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,3,5,6-Tetrachlorophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
2,3,4,6-Tetrachlorophenol	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Diethylphthalate	ND	0.17	EPA 8270D	5-31-18	5-31-18	
4-Chlorophenyl-phenylether	ND	0.033	EPA 8270D	5-31-18	5-31-18	
4-Nitroaniline	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Fluorene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
4,6-Dinitro-2-methylphenol	ND	0.17	EPA 8270D	5-31-18	5-31-18	
n-Nitrosodiphenylamine	ND	0.033	EPA 8270D	5-31-18	5-31-18	
1,2-Diphenylhydrazine	ND	0.033	EPA 8270D	5-31-18	5-31-18	
4-Bromophenyl-phenylether	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Hexachlorobenzene	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Pentachlorophenol	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Phenanthrene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Anthracene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Carbazole	ND	0.033	EPA 8270D	5-31-18	5-31-18	
Di-n-butylphthalate	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Fluoranthene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Benzidine	ND	0.33	EPA 8270D	5-31-18	5-31-18	
Pyrene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Butylbenzylphthalate	ND	0.17	EPA 8270D	5-31-18	5-31-18	
bis-2-Ethylhexyladipate	ND	0.17	EPA 8270D	5-31-18	5-31-18	
3,3'-Dichlorobenzidine	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Benzo[a]anthracene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Chrysene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
bis(2-Ethylhexyl)phthalate	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Di-n-octylphthalate	ND	0.17	EPA 8270D	5-31-18	5-31-18	
Benzo[b]fluoranthene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo(j,k)fluoranthene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[a]pyrene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Indeno[1,2,3-cd]pyrene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Dibenz[a,h]anthracene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Benzo[g,h,i]perylene	ND	0.0067	EPA 8270D/SIM	5-31-18	6-1-18	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	26	19 - 103				
Phenol-d6	34	30 - 103				
Nitrobenzene-d5	30	27 - 105				
2-Fluorobiphenyl	45	36 - 102				
2,4,6-Tribromophenol	79	33 - 110				
Terphenyl-d14	73	38 - 108				



Date of Report: June 13, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-245
 Project: 4082-039-01

**SEMIVOLATILES EPA 8270D/SIM
 MS/MSD QUALITY CONTROL**

Matrix: Soil
 Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES										
Laboratory ID:	05-259-06									
	MS	MSD	MS	MSD		MS	MSD			
Phenol	0.588	0.651	1.33	1.33	ND	44	49	37 - 94	10	27
2-Chlorophenol	0.548	0.602	1.33	1.33	ND	41	45	37 - 95	9	32
1,4-Dichlorobenzene	0.184	0.195	0.667	0.667	ND	28	29	23 - 97	6	37
n-Nitroso-di-n-propylamine	0.290	0.324	0.667	0.667	ND	43	49	40 - 91	11	28
1,2,4-Trichlorobenzene	0.334	0.372	0.667	0.667	ND	50	56	37 - 93	11	30
4-Chloro-3-methylphenol	0.679	0.726	1.33	1.33	ND	51	55	46 - 96	7	25
Acenaphthene	0.358	0.401	0.667	0.667	ND	54	60	43 - 90	11	25
4-Nitrophenol	0.494	0.569	1.33	1.33	ND	37	43	31 - 104	14	28
2,4-Dinitrotoluene	0.308	0.345	0.667	0.667	ND	46	52	31 - 96	11	32
Pentachlorophenol	0.740	0.933	1.33	1.33	ND	56	70	20 - 123	23	29
Pyrene	0.353	0.405	0.667	0.667	0.100	38	46	28 - 114	14	35
Surrogate:										
2-Fluorophenol						33	35	19 - 103		
Phenol-d6						39	43	30 - 103		
Nitrobenzene-d5						39	41	27 - 105		
2-Fluorobiphenyl						50	55	36 - 102		
2,4,6-Tribromophenol						50	61	33 - 110		
Terphenyl-d14						45	54	38 - 108		



Date of Report: June 13, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-245
 Project: 4082-039-01

**TOTAL METALS
 EPA 6010D/7471B
 METHOD BLANK QUALITY CONTROL**

Date Extracted: 5-29&6-1-18

Date Analyzed: 5-29&6-1-18

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: MB0529SM3&MB0601S1

Analyte	Method	Result	PQL
Arsenic	6010D	ND	10
Barium	6010D	ND	2.5
Cadmium	6010D	ND	0.50
Chromium	6010D	ND	0.50
Lead	6010D	ND	5.0
Mercury	7471B	ND	0.25
Selenium	6010D	ND	10
Silver	6010D	ND	1.0



Date of Report: June 13, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-245
 Project: 4082-039-01

**TOTAL METALS
 EPA 6010D/7471B
 DUPLICATE QUALITY CONTROL**

Date Extracted: 5-29&6-1-18
 Date Analyzed: 5-29&6-1-18

Matrix: Soil
 Units: mg/kg (ppm)

Lab ID: 05-245-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	ND	ND	NA	10	
Barium	82.7	94.1	13	2.5	
Cadmium	ND	ND	NA	0.50	
Chromium	60.3	49.5	20	0.50	
Lead	ND	5.40	NA	5.0	
Mercury	ND	ND	NA	0.25	
Selenium	ND	ND	NA	10	
Silver	ND	ND	NA	1.0	



Date of Report: June 13, 2018
 Samples Submitted: May 23, 2018
 Laboratory Reference: 1805-245
 Project: 4082-039-01

**TOTAL METALS
 EPA 6010D/7471B
 MS/MSD QUALITY CONTROL**

Date Extracted: 5-29&6-1-18

Date Analyzed: 5-29&6-1-18

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: 05-245-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	106	106	99.4	99	6	
Barium	100	196	113	194	111	1	
Cadmium	50.0	49.4	99	50.7	101	3	
Chromium	100	145	85	154	93	6	
Lead	250	242	97	245	98	2	
Mercury	0.500	0.536	107	0.520	104	3	
Selenium	100	92.0	92	94.1	94	2	
Silver	25.0	20.6	82	20.8	83	1	



Date of Report: June 13, 2018
Samples Submitted: May 23, 2018
Laboratory Reference: 1805-245
Project: 4082-039-01

% MOISTURE

Date Analyzed: 5-25-18

Client ID	Lab ID	% Moisture
FL252-B1-Drum-S	05-245-01	10





Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B - The analyte indicated was also found in the blank sample.
- C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E - The value reported exceeds the quantitation range and is an estimate.
- F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I - Compound recovery is outside of the control limits.
- J - The value reported was below the practical quantitation limit. The value is an estimate.
- K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L - The RPD is outside of the control limits.
- M - Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
- N - Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 - Hydrocarbons in diesel range are impacting lube oil range results.
- O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P - The RPD of the detected concentrations between the two columns is greater than 40.
- Q - Surrogate recovery is outside of the control limits.
- S - Surrogate recovery data is not available due to the necessary dilution of the sample.
- T - The sample chromatogram is not similar to a typical _____.
- U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 - The practical quantitation limit is elevated due to interferences present in the sample.
- V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X - Sample extract treated with a mercury cleanup procedure.
- X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.
- Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
- Z -
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference





Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664

**Professional
Analytical
Services**

Jun 13 2018
On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister

Dear David Baumeister:

Enclosed please find the analytical data for your SOUND TRANSIT project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
FL252 B1-DRUM-S	Soil	18-A009323	CN

Your sample was received on Monday, June 4, 2018. At the time of receipt, the sample was logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to contact me.

Sincerely,


Aaron W. Young
Laboratory Manager

Project #: 4082-039-01
PO Number: 05-245

BACT = Bacteriological
CONV = Conventional

MET = Metals
ORG = Organics

NUT=Nutrients
DEM=Demand

MIN=Minerals

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com



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ANALYSIS REPORT

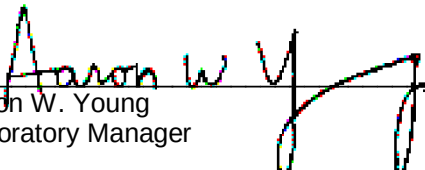
On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
Project Name: SOUND TRANSIT
Project #: 4082-039-01
PO Number: 05-245
All results reported on an as received basis.

Date Received: 06/04/18
Date Reported: 6/13/18

AMTEST Identification Number	18-A009323
Client Identification	FL252 B1-DRUM-S
Sampling Date	05/22/18, 15:35

Conventional

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Cyanide	< 0.05	ug/g		0.05	SW846 9012	JC	06/07/18


Aaron W. Young
Laboratory Manager

QC Summary for sample number: 18-A009323

MATRIX SPIKES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
18-A009323	Total Cyanide	ug/g	< 0.05	0.46	0.57	80.70 %
18-A009323	Total Cyanide	ug/g	< 0.05	0.49	0.57	85.96 %

MATRIX SPIKE DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE + SPK	MSD VALUE	RPD
Spike	Total Cyanide	ug/g	0.46	0.49	6.3

STANDARD REFERENCE MATERIALS

ANALYTE	UNITS	TRUE VALUE	MEASURED VALUE	RECOVERY
Total Cyanide	ug/g	1.0	0.97	97.0 %

BLANKS

ANALYTE	UNITS	RESULT
Total Cyanide	ug/g	< 0.05



Turnaround Request

1 Day 2 Day 3 Day

email: dbaumeister@onsite-env.com
Project Number: 4082-039-01

Other: _____

Project Name: Sound Transit

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analyses
1	FL252 B1-Drum-S 9323	5/22/18	15:35	S	1	Cyanide
Signature		Company	Date	Time	Comments/Special Instructions	
Relinquished by:		OCCTIVE PC	6/4/18	9:30		
Received by:		AMTEST	6/4/18	9:30		
Relinquished by:						
Received by:						
Relinquished by:						
Received by:						
Relinquished by:						



Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Chain of Custody

Page 1 of 1

[illegible]

APPENDIX C
EXCERPTS FROM ECOLOGY FILES

SITE INSPECTION REPORT FOR
WIDING TRANSPORTATION, INC.
KENT, WASHINGTON

TDD F10-8706-08
PAN FWA0523SCR

Report Prepared by: Ecology and Environment, Inc.
Date: July 1988

Submitted to: J.E. Osborn, Regional Project Officer
Field Operations and Technical Support Branch
U.S. Environmental Protection Agency
Region X
Seattle, Washington



ecology and environment, inc.

101 YESLER WAY, SEATTLE, WASHINGTON, 98104, TEL. 206/624-9537

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SITE INSPECTION REPORT
WIDING TRANSPORTATION, INC.
KENT, WASHINGTON
TDD F10-8706-08
PAN FWA0523SCR

Site Name/Address

Widing Transportation, Inc.
24300 Pacific Highway South
Kent, Washington 98031

Investigation Participants

Gloria Skinner, FIT, E&E, Seattle, WA, (206) 624-9537
Lynn Guilford, FIT, E&E, Seattle, WA, (206) 624-9537
William Wright, Project Manager, Washington Department of Ecology,
Olympia, WA, (206) 438-3058

Principal Site Contacts

Rodman Widing, Sr., Owner/Shareholder Representative
Peter J. Pedone, Environmental Regulatory Compliance Specialist

Dates of Investigations

July 13, 1987 1000-1230 hours

Dates of Sampling

April 11, 1988 Ground water samples and
 composite soil samples

May 3-4, 1988 Soil boring samples

DISCLAIMER

This report has been prepared by Ecology and Environment, Inc. under EPA Contract 68-01-7347 and reviewed and approved for public release by the U.S. Environmental Protection Agency (EPA). Mention of commercial products does not constitute endorsement by the U.S. Government. Editing and technical content of this report are the responsibility of Ecology and Environment, Inc., Seattle, Washington, and do not necessarily reflect the views or policies of the EPA.

ABSTRACT

Under Environmental Protection Agency (EPA) Technical Directive Document (TDD) F10-8706-08, a file review and site inspection was conducted on Widing Transportation, Inc., Kent (Midway), Washington to evaluate the facility's status within the Agency's Uncontrolled Hazardous Waste Site Program. As a result of this inspection, two ground water samples, five composite soil boring samples, six surface soil grab samples, and a background surface soil grab sample were collected to determine if contaminants that resulted from tank truck rinse-out activities remained on site or had migrated off site. The samples were analyzed for Target Compound List (TCL) inorganics, volatile organic compounds, semi-volatile organic compounds, pesticides, PCBs, and cyanide. Elevated levels of lead and copper were found in soil from the south drainage ditch on site. Acetone was detected in two soil boring samples at elevated concentrations (20 times higher than background). No other inorganic elements or organic compounds were detected in significant quantities in the remaining soil or water samples.

1.0 INTRODUCTION

Widing Transportation, Inc. (WTI) has been identified by the Region X Environmental Protection Agency (EPA) from preliminary assessment screening as requiring additional information to accurately profile past closure and excavation of tank-truck rinsate ponds and sludge waste. Information was also required to assess other disposal practices, including alleged off-site dumping and on-site burial of wastes. Ecology and Environment, Inc. (E&E), under Technical Directive Document (TDD) No. F10-8706-08, conducted a site inspection and sampling program at WTI between July 13, 1987 and May 4, 1988, in order to evaluate the site's status within the Agency's Uncontrolled Hazardous Waste Program. This report summarizes the results of E&E's site inspection. Information collected during the inspection also appears on EPA Form 2070-13 (Appendix A). A site inspection functions as a screening tool for EPA to use in assessing actual or potential environmental and public health risks as a basis for designing future studies.

2.0 OWNER/OPERATOR

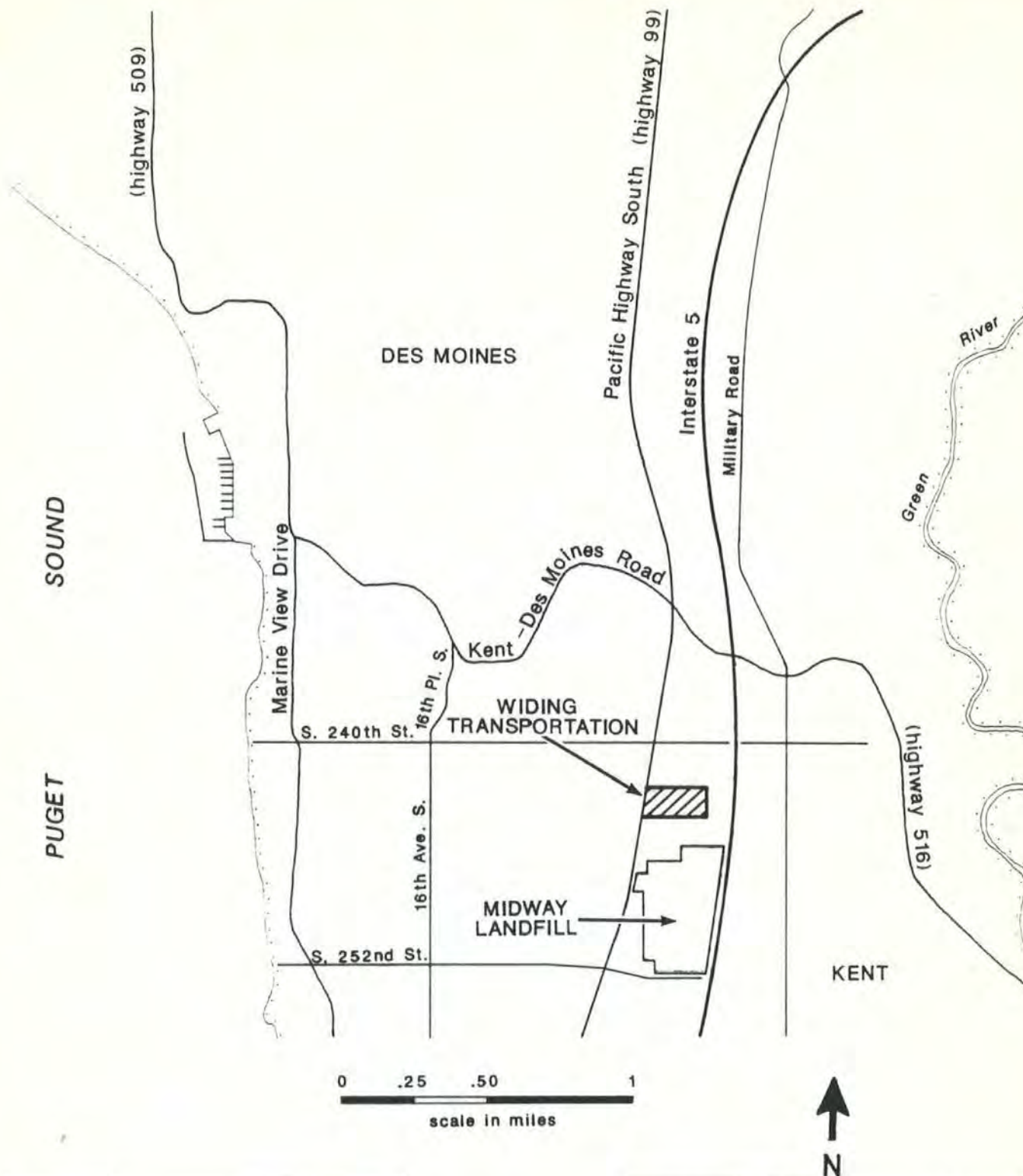
Widing Transportation, Inc. is a former trucking company which was based in Portland, Oregon, from 1958 to 1986 (1). Just prior to the death of owner Glenn Widing in 1986, the business was sold to Arrow Transportation and all assets of Widing Transportation, Inc. were turned over to the Widing shareholders (2). The shareholders are currently represented by Rodman Widing, Sr., brother of Glenn Widing. The site property is owned by the shareholders and is leased to several trucking and heavy equipment companies which currently operate on site. WTI formerly used the property for tank truck maintenance and rinse-out.

3.0 LOCATION

The site is located at 24300 Pacific Highway South, Kent, Washington (Township 22N, Range 4E, Section 21), in the community known as Midway (Figure 1). Latitude and longitude are equivalent to 47°23'06.0" and 122°13'42.0", respectively. These coordinates are based on the approximate geographic area encompassed by the site (see Figure 1).

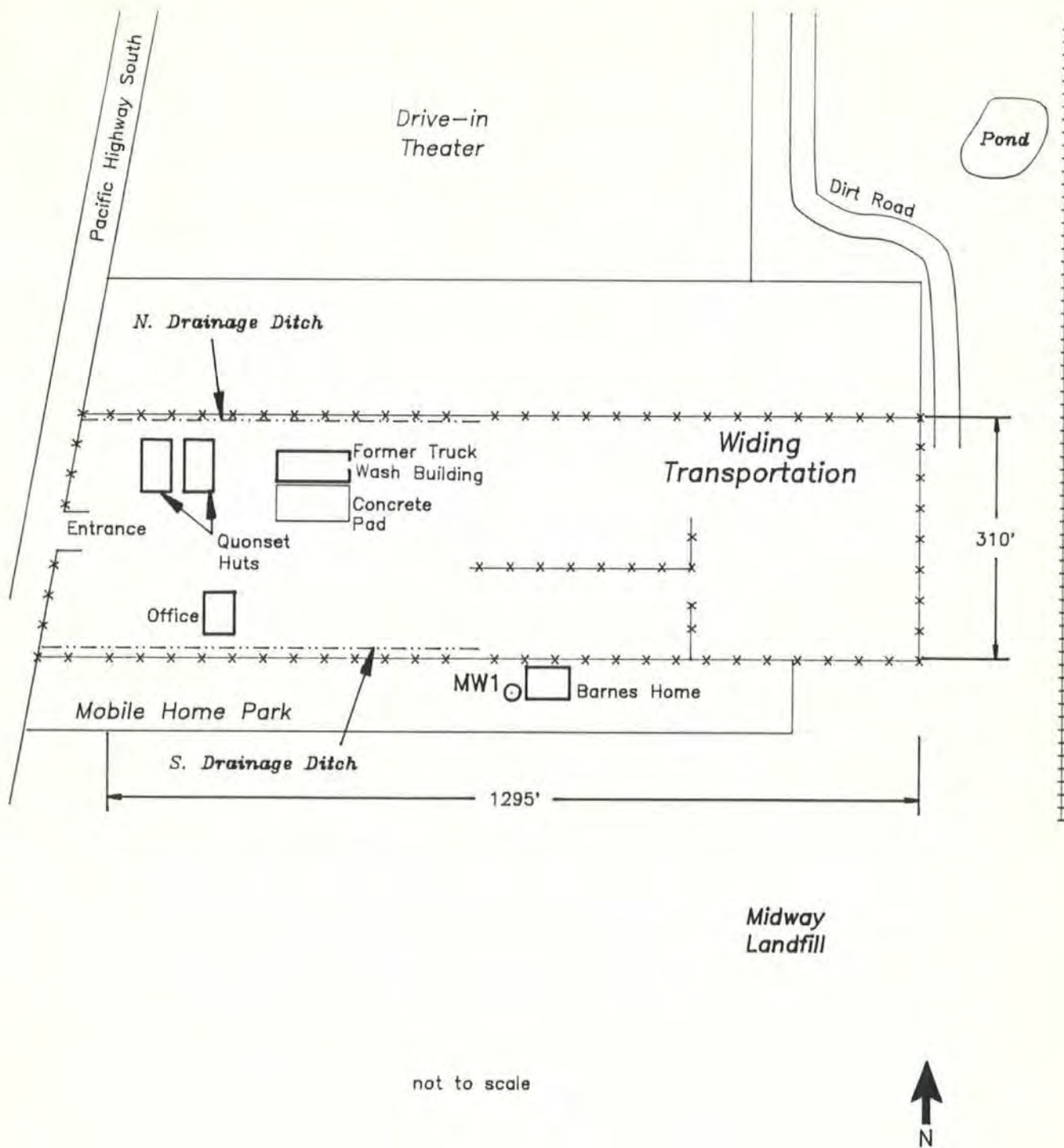
4.0 SITE DESCRIPTION AND SURROUNDING AREA

The site encompasses a 9.3-acre rectangular parcel of land, measuring approximately 1,295 feet on the northern and southern boundaries and 310 feet along the eastern and western borders (Figure 2) (4). The site entrance is situated on the western side, adjacent to Pacific Highway South (Highway 99). A chain link fence surrounds the site, on all but the western side, where a tall wooden fence has been constructed. Additionally, a wooden fence has been installed inside the chain link fence along a section of the southern site boundary which borders a residential area. A chain-link fence with a locked gate separates the eastern one-quarter of the property from the rest of the site. A permanent office building and a mobile home office exist on the southwestern part



ecology & environment, inc.	
Job: F10-8706-08	Waste Site: WA 0523
Drawn by: B.T.	Date: July 18, 1988

FIGURE 1
LOCATION MAP
WIDING TRANSPORTATION, INC.
Kent, WA



LEGEND

- x-x-x- Fence
- MW1 Monitoring well

ecology & environment, inc.	
Job: F10-8706-08	Waste Site: WA 0523
Drawn by: D. P.	Date: Aug. 1, 1988

FIGURE 2
SITE MAP CIRCA 1988
WIDING TRANSPORTATION, INC.
Kent, WA

of the site, near the entrance. Two quonset hut buildings exist at the northwestern end of the property and were the only on-site buildings in existence when Widing obtained the property in 1967 (5). The former truck wash building and an uncovered concrete pad joining it on the south are situated east of the quonset huts. At the time of sampling, several large trucks and trailers were parked on the concrete pad. The truck wash building is currently used for storage of two unoccupied mobile homes. East of the truck wash building, a wooden and chain link fence marks the approximate location of the southern boundary of the three former rinsate ponds (2). This fence intersects another chain link fence which separates the eastern end of the site from the remainder of the site (Figure 2).

A fleet of large trucks, several forklifts, cranes, and other pieces of heavy equipment were present on site during the FIT investigation. In addition to the heavy equipment, metal I-beams, culvert pipes, augers, miscellaneous scrap metal, and surplus items were also present on site. An open-air painting and machine shop situated under a covered patio was in operation by the company which leases the eastern portion of the site. Two sheds were located near this shop, at the southeastern corner of the property.

A vacant lot which extends east to Interstate 5 and north to South 240th Street is situated beyond the eastern site boundary. A drive-in theater and parking area are north of the site. Two permanent residences and a mobile home park consisting of approximately 40 units lie immediately south of the site. The northern border of the Midway Land-fill occurs one-quarter mile to the south of the Widing property.

The area surrounding the site is composed of mixed commercial/residential properties, with heavy business use occurring along Pacific Highway South, and homes and apartments situated to the north, south, and west. The population within one mile of the site is approximately 10,816 people. Approximately 56,000 people live within three miles of the site (6).

5.0 TOPOGRAPHY AND DRAINAGE

The Widing Transportation site is located in a region of Alderwood gravelly sandy loam, with a regional slope that ranges from 6% to 15% (7). Undisturbed soil of this series consists of a moderately acidic surface mixture of organic matter and minerals, underlain by 12 to 14 inches of reddish brown, gravelly, sandy loam with numerous iron and manganese pellets (7). The surface of the Widing site has been significantly altered from its native state by clearing, filling, and leveling activities over the years. As a result, the site is now elevated approximately six feet above the adjacent eastern and southern properties and is nearly flat. The fill material which has been used on site appears to be a mixture of the Alderwood series and or glacial till, which is also common in the area.

During the period of time the truck wash was in operation (1967 to 1986), the property was slightly elevated in the center and sloped gently to the east and west (8). Surface runoff exited at the northeast and southeast corners of the property and from two shallow ditches which flowed west to Pacific Highway South along the northern and southern site boundaries (8) (Figure 1). Prior to the ditch construction, runoff allegedly flowed in an uncontrolled fashion across the southern boundary of the site onto adjoining property (9). The south ditch was eventually extended to include the full length of the southern site boundary.

There are no major surface water bodies in the immediate vicinity of, or on the WTI property. A natural depression forms a swamp and small pond on the property to the northeast of the site. The terrain slopes gently from north to south to a low point (Midway Landfill) approximately 1/4 mile south of WTI. To the west, the land surface is almost level across Pacific Highway South, then drops steeply downward approximately 100 feet to the nearly flat Parkside Wetland (Figure 3). The Parkside Wetland is a peat bog of approximately ten acres which is drained by a ditch to a catch basin (10). It ultimately discharges to the North Fork of the Smith River, approximately 3/4 miles west of Widing. The Smith River flows through Salt Water State Park and discharges into Puget Sound (10). Elevations in the site area range from 400 feet above mean sea level (AMSL) just north of Widing, to sea level at Puget Sound, 1.5 miles to the west (3).

6.0 GEOLOGY/HYDROGEOLOGY

6.1 Regional Geology

The site is located within the Puget Sound Lowland, a broad, rolling, glacial drift plain of low relief which is bordered by the Olympic and Cascade Mountain ranges.

The physiographic features of the lowland are primarily the result of the Fraser Glaciation which occurred approximately 15,000 years ago. The sediments deposited during this period are collectively termed the Vashon Drift. The lowermost and oldest sedimentary unit is the Lawton Clay, which is composed of silts and clays. These sediments were deposited into a large proglacial lake that filled much of the region when the advancing glacier blocked the natural northward drainage of the Puget Lowland (11). Overlying the Lawton Clay is the Esperance Sand. The Esperance Sand consists of fine- to medium-grained fluvial and lacustrine sands which were deposited onto the plain after the lake had filled with silt and clay. The last two drift units consist of the Vashon Outwash and Vashon Till. Vashon Outwash is comprised of coarse-grained sand and gravel deposited by glacial melt-water streams, along with glacial advance and recessional outwash deposits. Vashon Till deposits were intercalated with outwash deposits and mantle much of the Puget Lowland. Till is a compact, unsorted, heterogeneous mixture of sand, silt, clay, and cobbles deposited directly from glacial ice. Vashon Drift was laid down on sediments deposited during the preceding interglacial and glacial periods, and onto bedrock. Bedrock is rarely

exposed in the lowland and consists of Tertiary volcanic and sedimentary rocks. Depth to bedrock is highly variable and can be as deep as 4,000 feet in places (12).

6.2 Site (Local) Geology

Local geologic and hydrogeologic conditions have been well established as a result of several geotechnical investigations performed at the Midway Landfill, located approximately 1/4 mile south of the Widing Site.

The surface deposits in the study area consist of several feet of fill material or recent alluvium. Underlying these deposits or exposed in some places, is a layer of Vashon Drift, consisting mostly of outwash sand or till, ranging from 10 to 60 feet in thickness. Two-hundred feet of gravel underlain by 80 to 180 feet of sand and silt occurs beneath the Drift. Both of these deposits have been attributed to a pre-Vashon glacial period (13). Underlying these deposits is a heterogeneous mixture of silty sand and gravel alternating with fine-grained silt and sand. This deposit is thought to be interglacial in origin and occurs at depths of approximately 300 feet below the study area (13).

6.3 Regional Hydrogeology

The Puget Lowland in the vicinity of the site contains extensive ground water resources. Productive aquifers occur in many sand and gravel deposits of both glacial or interglacial origin (14). The uppermost productive aquifers typically occur in Vashon advance outwash sands, however, perched zones of ground water may occur in younger deposits resting on the less permeable Vashon Till (14).

Productive aquifers in the older glacial deposits underlie the Vashon sand aquifers. These aquifers are typically confined and are commonly exploited by public supply wells. Regional discharge of the deeper aquifers is to Puget Sound to the west or the Duwamish Valley to the east (4).

6.4 Site Hydrogeology

The occurrence of ground water in the study area of the Midway Landfill is fairly complex as a result of the variable hydraulic conductivities of the interbedded glacial and interglacial deposits (13). Ground water is primarily encountered in perched zones within the fill, recent alluvium, or Vashon Drift. The Vashon Drift, which in other areas is a productive aquifer, does not exhibit enough saturated thickness to be considered an aquifer at this location. The most shallow productive aquifer occurs in outwash gravels originating from an earlier glaciation. Ground water in this aquifer is approximately 57 feet below the Widing site (Appendix B). Ground water flow beneath the site is thought to be toward the center of the Midway Landfill, where it then migrates through discontinuities in the underlying aquitards to recharge deeper aquifers (13).

7.0 CLIMATE

Widing Transportation, Inc. is located in King County, Washington, which exhibits a modified oceanic climate with mild winters, cool summers and heavy precipitation (7). The average annual precipitation recorded in the area is 40.74 inches (15), occurring largely during the fall and winter months as rain. The annual pan evaporation is equivalent to 23.5 inches which results in a net rainfall of 17.24 inches (15). The one year, 24-hour rainfall is approximately three inches. The average annual temperature in Seattle is 52.8°F, ranging from summer highs of 98°F to winter lows of 3°F (7).

8.0 GROUND WATER AND SURFACE WATER USE

Ground water within three miles of Widing Transportation, Inc. is used for public and private drinking water supplies. The population within three miles of the site is approximately 56,000 people, of which approximately 14,000 are residents of the City of Kent (6). The City of Kent obtains most of its drinking water from Clark and Kent springs, which are located approximately 14 miles east of the site (16). City of Kent residents in the far western regions of the city, including WTI, also obtain water from King County Water District #75 (16). Water District #75 serves approximately 45,000 people, most of whom live greater than three miles north of the site. Fifteen percent of the total water needs of District #75 are met by two wells which are between 400 and 500 feet deep, located approximately 2-1/2 miles north of Widing (16). The remaining 85% of the water supply comes from the City of Seattle water supply system. The City of Seattle does not utilize ground water for drinking.

To the northwest of Widing, Water District #54 supplies water to approximately 750 accounts in the Des Moines area (17). Many of the accounts represent multiple resident facilities such as nursing homes and apartment buildings. The water is obtained from two wells within two miles of Widing which are 244 feet deep and 328 feet deep, respectively (17). To the west and south of Widing, residents are served by either Water District #75 or the Federal Way Water District which has several wells located more than three miles south of the site (18).

Well logs were obtained for 16 private wells within three miles of WTI, 10 of which were identified for domestic use and six of which are used for irrigation, industrial, or other purposes such as heat pumps (Appendix B) (19). The City of Seattle Midway Landfill Study identified additional operating wells within one mile of the landfill, for which well logs were not found. One of these wells, the C.E. Kraft well at 4436 Reith Road, appears to be the closest domestic well to WTI, approximately 0.7 miles to the southeast (20). This well is 160 feet deep, with a static water level of 50 feet (20).

Surface water in the area is not abundant and has no known major uses. The swamp and pond area on the eastern property adjacent to Widing is the closest surface water to the site and appears to be unusable. Water rights data do not exist for the North Fork of the Smith

River or the Smith River itself, however, two water rights for recreation and beautification were located in Section 21 (Township 22N, Range 4E), the same section where WTI is located (21). Both rights were listed for unnamed streams that are tributaries of water leading to Puget Sound. The Parkside Wetland, west of Widing, is not secured and may be used for recreation by local residents or children who attend the nearby Parkside Elementary School. Water from the Smith River flowing through Saltwater State Park is used to promote plant life and wildlife for human enjoyment and ecological preservation.

9.0 OVERVIEW OF SITE OPERATIONS

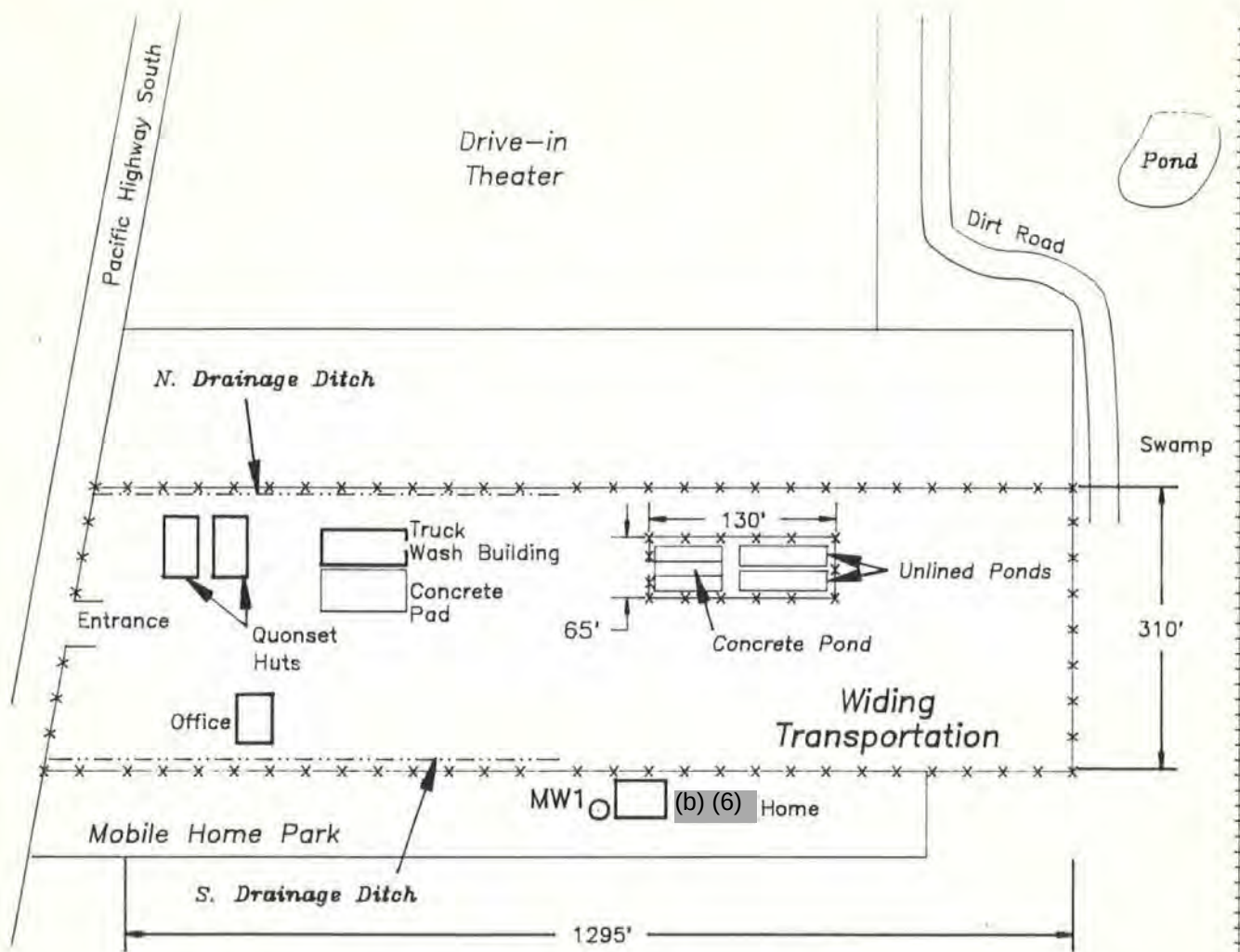
Widing Transportation History and Past Disposal Practices

Widing Transportation, Inc. was founded in 1958 by Mr. Glenn Widing in Portland, Oregon (1). The company was authorized by the Interstate Commerce Commission (ICC) Operating Authority (permit #CC-567) to haul chemicals, acids, petroleum products, paper products, and other substances in tank trucks (22). A large percentage of WTI's clients were from pulp and paper industries (2). Satellite terminals were established by Widing in Oregon, Washington, and California to facilitate tank truck maintenance and rinse-out between loads. According to Widing, the majority of their trucks were returned to the main facility in Portland for cleaning (2).

The property at the Midway location had previously been used as a golf driving range and had once been the site of a machine/auto salvage shop before it was acquired by Widing in 1967 (23). The original application for a Conditional Exception (CE) permit from the City of Kent indicated that the property was to be used as a truck terminal and storage establishment enclosed in a building (24). A public hearing was held on November 7, 1967, where those in attendance were informed that the proposed warehouse would contain parts only, and no chemicals or combustibles (25). The facility planned to service approximately 30 trucks per week. CE permit #72 was granted by the City of Kent for six months at that meeting.

In April of 1969, a truck rinse-out building was constructed on site, along with a series of three settling ponds to contain waste rinsate. One of the settling ponds was lined with concrete and was divided into three chambers. The other two ponds were unlined (Figure 4). By January of 1970, Widing had been authorized to store hazardous and flammable materials on site by the Kent Fire Department (26). At the same time, adjacent property owners had filed complaints with the City regarding excessive noise at all hours and uncontrolled surface water drainage onto adjoining property (27).

No records of site activities from 1971 to 1979 could be located. During that time, however, three off-site spills involving WTI trucks were noted: the dumping of wastewater containing phenolic resin in Aberdeen, Washington (May 1972); an oil spill at a Boeing facility



not to scale



LEGEND

- x-x-x- Fence
- MW1 Monitoring well

ecology & environment, inc.	
Job: F10-8706-08	Waste Site: WA 0523
Drawn by: D. P.	Date: Aug. 1, 1988

FIGURE 4
SITE MAP CIRCA 1984
WIDING TRANSPORTATION, INC.
Kent, WA

(December 1973); and an oil spill at a Time Oil facility (March 1976). The Washington State Department of Ecology (Ecology) levied fines against Widing of \$250.00 for each of the oil spills (28).

A site inspection by Ecology on September 25, 1979, indicated that the rinsate treatment system was inadequate, that there was evidence of past pond overflows, and that sludge had been dredged from the ponds and disposed of on the site surface. A subsequent Ecology memorandum and Recommendation for Enforcement Action found Widing in violation of Water Quality Regulatory Notice and Order RCW 90.48.120 and stated that as a result of the inadequate treatment system, surface water and ground water contamination were possible. To correct this situation, Glenn Widing indicated that a concrete slab with sides would be constructed to contain dredged sludge prior to final off-site disposal (29). No evidence was found to indicate that this slab was actually ever constructed.

During this same time period, the EPA received complaints of odors emanating from the site and of wastewater being dumped on the open ground at the site. On October 10, 1979, the Puget Sound Air Pollution Control Agency (PSAPCA) fined Widing \$250.00 under Civil Penalty #4497 for an uncontrolled release to the air (30). Widing attributed the incident to sodium sulfite which reacted with air and other chemicals in the cleaning facility. An identical air release occurred again a year later in December of 1980, and was possibly made more severe by a temperature inversion (30).

Various other complaints and violations were noted throughout 1980 and 1981, including a public hearing for citizen complaints (February 20, 1980) (31), more odor complaints, settling pond water being discharged to an adjacent swamp (Ecology, December 22, 1980), and trucks being cleaned and drained on the site surface (January 1, 1981) (32).

Beginning in January of 1981, unspecified improvements of the truck wash facility were allegedly made to alleviate the problem of discharge to the nearby swamp and to improve the condition of the settling ponds (33). In July 1981, it was noted that "heels," or residual, undiluted tank truck contents were being containerized and taken to Western Processing (a waste receiving company) every three to six months (34). According to Widing, approximately 490,000 gallons of excess truck rinsate and heels were transported to Western Processing between 1969 and 1983 (35). Some heels were allegedly drained into a large holding tank on site, which was transported to the Widing Portland facility when full (35). In September 1981, 10 dump truck loads of sludge, previously dredged from the ponds and stored on the site surface, were disposed of at Midway Landfill approximately one-quarter mile south of the site (36).

In August of 1982, the EPA RCRA (Resource Conservation and Recovery Act) Program Development Section withdrew Widing's Hazardous Waste Part A permit in response to Widing's claim that hazardous wastes were not treated, stored, or disposed of on site.

Two complaints were noted in 1983 and early 1984. In 1983, the owner of an adjacent parcel of land claimed that Widing was dumping chemicals into a trench leading onto her property (26). The other complaint involved an odor problem and was attributed to a broken steam hose in the truck wash facility (36).

In late 1984, Widing stopped using the settling ponds and began making arrangements to move the facility to a more suitable location with a METRO sewer connection. According to a Widing representative, rinsate generated between 1984 and 1985 was stored in a tank at the Midway site and was later disposed of at the company facility in Portland, Oregon (37). Many trucks were also allegedly re-routed to be rinsed at locations other than Midway (37).

The new site was also located in the City of Kent, and Widing was granted a six-month Use Permit by the City and a METRO Discharge Permit (#7501) during the summer of 1985. A holding tank with connections to the sewer lines was established, but actual use of this facility did not begin until November 1985 (38). The Kent Use Permit was extended to May 1, 1986.

To meet RCRA requirements, Widing installed at least part of a Great Lakes brand filter treatment system at the Midway Site in August of 1985 (39), to treat the estimated 325,000 gallons of rinsate remaining in the settling ponds (40). Treatment consisted of passing the rinsate across a filter cake of diatomaceous earth (41). The filtrate was then disposed of through the METRO sewer connection at the new Kent facility (42). Also during August, the Kent Highlands Landfill rejected a shipment of improperly dried sludge from Widing, which was later classified as a "dangerous waste" by Ecology (November 19, 1985). The rinsate filtering continued until the ponds were emptied in mid-March of 1986 and Ecology prepared to supervise the final closure of the ponds.

Also in mid-March of 1986, Widing made arrangements with the Kent Highlands Landfill staff to dispose of a sizable amount of accumulated sludge, claiming that the sludge had been approved for disposal the previous year (43). They began hauling the sludge to the landfill, which was brought to the attention of Ecology (probably by a citizen inquiry) and the Kent News Journal newspaper. Ecology and Seattle-King County Health officials determined that the sludge must be returned to Widing pending the outcome of laboratory analysis, but it was discovered that some of the sludge had been buried under 12 feet of refuse at the landfill (43). Ultimately, in May, the sludge was approved to remain in place at the landfill as solid waste, and the laboratory analysis reportedly revealed "no significant problem" from tests conducted for volatile organic hydrocarbons (44).

The last reported spill on site occurred on March 5, 1986, when a material claimed by Widing to be fish fertilizer flowed from the truck rinse facility and entered the north drainage ditch. The material was reportedly pumped out of the ditch and the ditch was flushed with clean water (45).

Widing discontinued their plans to develop the new Kent truck wash facility in the spring of 1986 (46). The temporary storage tank was removed and the facility closed by May 19, 1986. On May 31, 1986, Widing Transportation was sold to Arrow Trucking of Portland (47). Widing shareholders retained ownership of the Midway site property (2).

When Widing operations ceased at Midway in June 1986, Ecology required that all lagoons, ponds, holding tanks, and sludge be properly cleaned up (48). A laboratory analysis of material from the bottom of the ponds at the sludge-soil interface revealed phthalate levels in excess of 100 ppm (49), which caused this and previously excavated material, including sludge, to be classified as "dangerous waste" (48). Ecology required that all excavated material be removed from the site and taken to a hazardous materials disposal facility in Arlington, Oregon (48). Samples taken from 6, 12, and 18 inches below the pond bottoms indicated a rapid drop off in phthalate concentration with depth. Eventually, the north pond, which contained the highest levels of phthalates, was excavated to 30 inches below the original pond bottom, until an acceptable level of phthalates was achieved (50). A level of less than 100 ppm of phthalates was considered acceptable by Ecology (51). A total of 903.6 tons of soil and sludge was taken to Oregon for disposal (52). The concrete from the concrete lined pond was sand blasted on site to remove any contaminants and was disposed of at Coal Creek landfill in July 1986 (2). The residue from the sand blasting was collected and included with the waste removal to Arlington (47).

As part of the closure plan, Ecology intended to sample ground water near the site to assess the potential impact of the Widing operation on underlying aquifers. An attempt to sample ground water beneath the settling ponds was made in the fall of 1986 under the direction of Mr. Mike Ruef of Ecology. Two boreholes were drilled to a depth of 35 feet, but were sealed when water was not encountered at that depth (53). It was the decision of Mr. Ruef to discontinue drilling rather than penetrate the confining layer between the former ponds and the underlying aquifer (54).

The excavated area included all three settling ponds and the sludge storage area north of the ponds (35). Clean fill material was obtained from the Renton METRO project. According to the final site closure report submitted by Widing to Ecology in January 1987, the site was officially leveled and closed on December 10, 1986.

10.0 CHARACTERIZATION OF THE WASTE STREAM

Details of the precise quantity or composition of materials rinsed out of Widing's tank trucks into the rinsate ponds are not available. The ICC Operating Permit issued to Widing allowed them to legally haul a variety of substances, ranging from toxic or hazardous chemicals to foodstuffs (22). Three lists of products transported by Widing were obtained during this investigation. Table 1 provides a list of products from 1978 and the annual percentages of each, but this list may pertain only to the Portland, Oregon terminal (35). Table 2 lists products transported in 1985 as claimed by Widing in a permit application to the

Metro sewer system. Table 3 is an undated list of chemicals which, according to Widing, represents those substances rinsed at the Midway site. Some substances were transported in dedicated trucks which were not rinsed out between each load. WTI was unable to provide a comprehensive list of all substances transported during the history of their operation at the Midway location, or the quantities of each substance transported.

TABLE 1
PRODUCTS TRANSPORTED BY WIDING TRANSPORTATION, INC.
CIRCA 1978

Commodity Cleaned	% of Annual Total
1. Polyester and Alkyd Resins	3.4
2. Sulfur Lime	4.1
3. Polyvinyl Acetate	1.9
4. Latex	7.2
5. Defoamer	5.8
6. Paper Sizing	2.9
7. Lignin Liquor	5.3
8. Resins	21.7
9. Caustic	9.9
10. Formaldehyde	2.4
11. Soda of Silicate	1.1
12. Water Whites (organic solvent)	14.1
13. Phenol	3.1
14. Telone (pesticide)	0.4
15. Wood Preservatives	0.5
16. Acids	5.1
17. Tall Oil	2.4
18. Wax	7.9
19. Miscellaneous	0.8
TOTAL	100 %

TABLE 2

PRODUCTS TRANSPORTED BY WIDING TRANSPORTATION, INC.
 CIRCA 1985, OVER A FOUR-MONTH PERIOD
 (Reproduced from WTI document as received)

Mineral Spirits	Calcium Chloride
Nitric	Micro-sol
Turpentine	Perez 631 (Flocculant)
Sufonic	Tandemol (Rolling oil)
Caustic	Phenol
Alkyd Resin	Varnish
Phos Acid	Tallow
Chlorate	Aqua Ammonia
Sulfuric Acid	Silicate
Latex	Sanisizer
Phenolic Resin	Alum
Alcohol	Borol
Anti-freeze	Paracol
Water While	Formaldehyde
Acetone	Pamak
Butyl Acetate	Feed Supplement
Diacetone Alcohol	Defoamer
Diethylene Glycol	Poison B
Ethylene Glycol	Copper Sulfate
Ethylene Acetate	Rosin Size
Isopropyl Alcohol	Envelop Glue
Iso Butyl Acetate	Shellsol
Methyl Ethyl Ketone	Igepal (soap base)
Methanol	Magnafloc (flocculant)
Methylene Chloride	Vapam (soil fumigant)
Stylene	Lube Oil
Trichloroethylene	Wax (petroleum)
Xylene	Kerosene
Toluene	Fish Oil
Hampene (soap base)	Zinc Chloride
Aquapel	Neuphor

11.0 SITE INSPECTION BY E&E

The initial E&E site inspection of Widing Transportation took place on July 13, 1987, at 1000 hours. Those present during the inspection were Gloria Skinner and Lynn Guilford of E&E, William Wright of Ecology, and Peter J. Pedone representing Widing. Photographs from this visit are in Appendix C. Mr. Pedone presented a brief history of the Widing Transportation business operation at the Midway location, but provided few exact details at that time. Following the introduction, he led the group on a tour of the site where the truck rinse facility and settling ponds were formerly located. The meeting concluded at approximately 1115 hours.

TABLE 3*

PRODUCTS CLAIMED BY WIDING TO REPRESENT SUBSTANCES RINSED AT
MIDWAY TRUCK TERMINAL (Undated)

Trade Trade Name	Proper Shipping Name	Hazard Classification	UN or NA Hazard Identifier	Rinsed or Dedicated
Weak Acid	Sulphuric Acid (20-40%)	Corrosive Liquid	UN 1830	Rinsed
Alum	Liquid Aluminum Sulphate	ORM-B	UN 1760	Dedicated
Paper Resin (Phenolic)	Phenolic Resin Phenolic Resin	ORM-E ORM-E	NA 9188 NA 9188	Rinsed
Spent Solvent Waste (Re-run Solvent)	Petroleum Naptha Petroleum Naptha	Combustible Liquid Combustible Liquid	UN 1256 UN 1256	Dedicated
M-Grade, 50% Caustic (Soap) 50% Caustic	Sodium Hydroxide Sol. Sodium Hydroxide Sol. Sodium Hydroxide Sol.	Corrosive Liquid Corrosive Liquid Corrosive Liquid	UN 1824 UN 1824 UN 1824	Dedicated
Ru Silicate D. Silicate	Silicate Silicate	Non-Hazardous Non-Hazardous	None None	Rinsed
Caustic Potash	Potassium Potash	Corrosive Liquid	UN 1814	Rinsed
Sanisizer 7-11 Sanisizer	Plasticizer, Resin Platicizer, Resin	Non-Hazardous Non-Hazardous	None None	Rinsed
#6 Fuel Oil	Fuel Oil	Combustible Liquid	UN 1993	Rinsed
Thinner 450 Thinner 350-B	Naptha Solvent	Combustible Liquid	UN 1256	Evaporates/Dedicated
A/C De-Icer Aircraft De-Icer Glycol	Aircraft De-Icing Sol. Aircraft De-Icing Sol. Aircraft De-Icing Sol.	Non-Hazardous Non-Hazardous Non-Hazardous	None None None	Evaporates/Dedicated
Dry Urea Urea	Urea Urea	Non-Hazardous Non-Hazardous	None None	Dry Product Blown-out
MEK	Methyl Ethyl Ketone	Flammable Liquid	UN 1193	Evaporated/Dedicated

Other products on the Transportation Logs are identified by Proper Shipping Name.

* This table has been reproduced from WTI document as received.

12.0 SAMPLING PROGRAM

12.1 Previous Sampling

Previous sampling activities at the Widing property have been conducted by Ecology, private consultants, and Widing personnel during the pond closure activities. In addition, the City of Seattle has conducted extensive sampling of the immediate area near Widing as part of the Midway Landfill Closure project. Locations of pertinent previous sampling sites are shown in Figure 5.

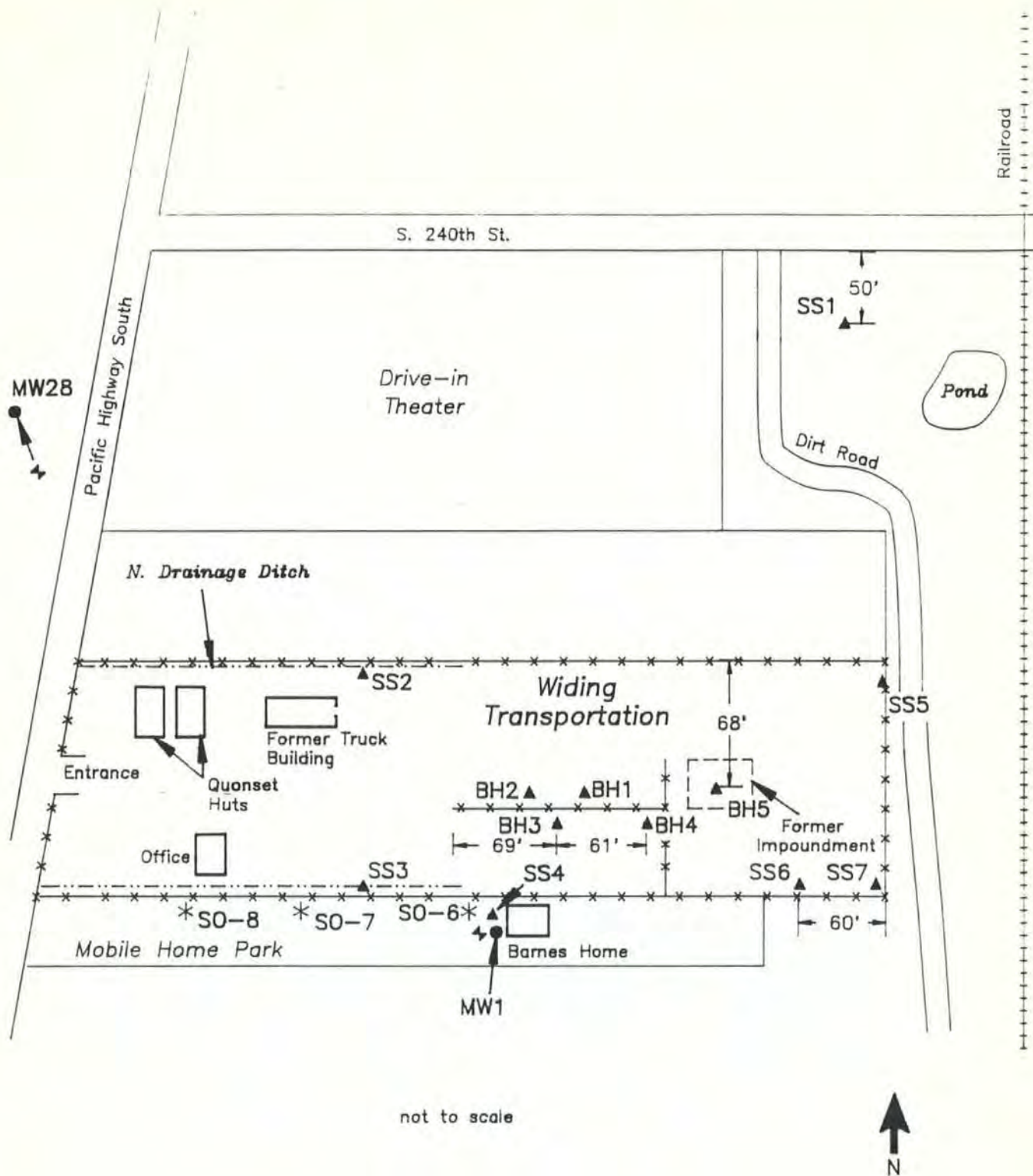
As a result of the Ecology settling pond closure and testing requirements for sludge prior to disposal, several chemical analysis reports representing dried sludge samples and sludge-soil interface samples were available. The E&E sampling effort did not duplicate previous on-site sampling matrices or locations, however, data from previous on-site sampling were considered valuable in establishing historical conditions at the site. Copies of original sample analysis reports are provided in Appendix D.

Because of the proximity of Widing Transportation to the Midway Landfill, portions of the City of Seattle Midway Landfill Closure Plan provided information helpful to this investigation. Two monitoring wells installed by the City were sampled by E&E. Previous sampling data for these wells are included in Appendix E. Well logs appear in Appendix B. Selected data have been included in data tables found in Section 14 of this report for comparison to E&E monitoring well sample analysis results. Soil samples were also collected by the City of Seattle during the Midway Landfill study. Three of these soil samples were taken from an area near the southern border of the Widing property. Copies of the original analytical data for these soil samples appear in Appendix E and are also included in data tables found in Section 14 of this report for comparison to E&E analytical results.

12.2 E&E Sampling Program

E&E's sampling program at WTI was intended to determine if contaminants from the rinsate ponds had migrated laterally through the soil beyond the pond closure excavation area or vertically to ground water, and to determine if alleged dumping of wastes had resulted in contamination of soil on or near the site. As a result, samples were taken from selected locations where contaminants from the truck rinse operation were suspected to exist, based on historical evidence and allegations (Figure 5). A sample summary is presented in Table 4. To accomplish sampling objectives, the following general field activities were conducted:

- o ground water samples were collected from two City of Seattle monitoring wells, one at a location upgradient from the site and the other at a downgradient location;
- o six shallow soil samples were taken from locations on and off site;



LEGEND

- x - x - x - Fence
- MW1 Monitoring well
- ▲ SS7 Soil sample
- ⚡ Water sample
- *SO-6 City of Seattle soil sample

ecology & environment, inc.	
Job: F10-8706-08	Waste Site: WA 0523
Drawn by: D. P.	Date: July 22, 1988

FIGURE 5
SAMPLE LOCATIONS MAP
WIDING TRANSPORTATION, INC.
Kent, WA

TABLE 4

SUMMARY OF SAMPLES FROM E&E INSPECTION APRIL 11, 1988,
WIDING TRANSPORTATION, INC., MIDWAY TERMINAL

E&E Sample Name	Sample Location	Date of Collection	Sample Matrix	Sample Type	Sample Depth
MW-1	Monitoring Well 1	04/11/88	Water	Grab	—
MW-28	Monitoring Well 28	04/11/88	Water	Grab	—
SS-1	Background	04/11/88	Soil	Grab	0 - 2 feet
SS-2	North Ditch	04/11/88	Soil	Grab	0 - 6 inches
SS-3	South Ditch	04/11/88	Soil	Grab	0 - 6 inches
SS-4	(b) (6) Yard	04/11/88	Soil	Grab	0 - 8 inches
SS-5	N.E. Corner	04/11/88	Soil	Grab	0 - 11 inches
SS-6	South Side	04/11/88	Soil	Grab	0 - 7 inches
SS-7	S.E. Corner	04/11/88	Soil	Grab	0 - 6 inches
BH-1	Random Borehole	05/04/88	Soil	Composite	~ 20 feet
BH-2	Random Borehole	05/04/88	Soil	Composite	~ 10.5 feet
BH-3	Random Borehole	05/04/88	Soil	Composite	~ 23 feet
BH-4	Random Borehole	05/04/88	Soil	Composite	~ 20 feet
BH-5	Borehole, Former Impoundment	05/03/88	Soil	Composite	~ 9 feet

- o five soil boring samples were collected on site;
- o a background soil sample was collected off site; and
- o all samples collected were analyzed for elements and compounds found on the EPA Target Compound List (TCL) (Appendix F).

Photos taken during sampling are found in Appendix C.

Ground Water Sampling

Two ground water samples were collected from City of Seattle monitoring wells MW-28 and MW-1 during the E&E PIT inspection on April 11, 1988. MW-28 is located northwest of Widing across Pacific Highway South. Previous studies by the City of Seattle indicate that this well is upgradient of the Widing site. MW-1 is located on the property of (b) (6) whose residence is approximately 50 feet from Widing's southern property boundary. This well is considered to be downgradient of Widing.

Prior to the collection of ground water samples, the static water level in each well was measured and recorded. Three well volumes were then purged using a submersible pump. Several samples were obtained during purging to determine stabilization of ground-water parameters (pH, conductivity, temperature) and the subsequent presence of formation water. Field measurements are illustrated in Table 5. A pH value was not obtained for MW-28 due to equipment failure in the field. Ground water samples were obtained using a clean, decontaminated Teflon bailer.

TABLE 5
FIELD MEASUREMENTS FOR GROUND WATER SAMPLES
WIDING TRANSPORTATION, INC.
April 11, 1988

Well	Static Water Level	Total Purge Time	(Stabilized Conditions)		
			pH	Temperature	Conductivity
MW-28	92.39 feet	18 minutes	---	17.8°C	45.8 umhos
MW-1	62.88 feet	3 hours	6.99	13.0°C	179 umhos

Ground water cyanide samples were field screened for the presence of sulfide using lead acetate and potassium iodide papers. Samples were preserved with sodium hydroxide and packed in ice immediately after collection.

Soil Sampling

Surface soil grab samples were collected on April 11, 1988 from the north drainage ditch on site (SS-2), the south drainage ditch (SS-3), the northeast and southeast site corners (SS-5, SS-7), the site southern boundary (SS-6) and the (b) (6) residence (SS-4) (Figure 5). These samples were obtained from an average of six inches below the ground surface (BGS) using a decontaminated hand auger. A background soil sample (SS-1) was obtained (from auger cuttings) north of the Widing site from approximately two feet BGS, using a Minute Man power auger.

Soil boring samples were obtained via a drilling subcontractor (refer to Section 13 of this report). On May 3, 1988, a composite soil boring sample was obtained from the location of the former impoundment east of the former rinsate ponds (BH-5), from a depth of nine feet. The following day, composite borehole samples were obtained from four locations south of the former rinsate ponds at depths between 20 and 25 feet (BH-1 through BH-4) (Figure 5). Composite samples were achieved by placing aliquots of soil from the full length of the split spoon sampler or from the lowest two feet of the auger flight into a clean stainless steel bowl. Samples for VOC analysis were collected by placing soil from several parts of the bowl into the sample container, using a clean stainless steel spoon. The remainder of the sample in the bowl was thoroughly homogenized by stirring with the spoon before aliquots of the sample were placed in the sample containers. These samples were obtained to determine if lateral migration of rinsate pond contaminants had occurred and to investigate allegations of buried sludge in the vicinity. Soil samples were collected and shipped in accordance with EPA-approved sampling methods.

13.0 DRILLING PROGRAM

In order to assess the potential lateral migration of contaminants in soils at the site, and the potential presence of buried wastes, a total of five boreholes were drilled with sampling and analysis occurring at the deepest depth attained. The borehole locations were selected in those on-site areas that involved alleged rinsate pond sludge burial (Figure 5). Table 6 lists the respective depth attained, specific sampling interval, and sample description (including MUNSELL color designation) for each borehole.

A KW-61 truck-mounted hollow-stem auger rig was utilized to negotiate each borehole to its respective depth. The maximum depth attained at each boring location was governed by refusal of the equipment to penetrate to a deeper layer due to the presence of large boulders or cobbles at depth. Five to ten-foot offset distances were used at those locations (BH-1) where the initial boring could not be advanced past five feet.

TABLE 6

BOREHOLE DEPTHS AND SAMPLING INTERVAL
WIDING TRANSPORTATION, INC., MIDWAY TERMINAL

Borehole #	Maximum Depth (feet)	Sampling Interval (feet)	Sample Description
BH-1	20.0	20.0 - 22.0	Dusky yellowish green (10 GY 3/2), silty clay
BH-2	10.5	10.5 - 12.5	Native soil, grayish green (10 GY 5/2), silty clay
BH-3	23.0	23.0 - 25.0	Dusky yellowish green (10 GY 3/2), silty clay
BH-4	20.0	20.0 - 22.0	Dusky yellowish green (10 GY 3/2), silty clay
BH-5	9	7.0 - 9.0	Native soil, grayish green (10 GY 5/2), silty clay

Borehole sampling for BH-5 involved the collection of a small recovery of soil via a two-inch split-spoon sampler. Additional soil was collected directly from the auger flights to provide adequate volume. Collection of soil from the auger was performed when the two-inch split-spoon sampler was repeatedly jammed by cobbles during drilling. Three- and six-inch split-spoon samplers were subsequently secured by the subcontractor for the remaining four boreholes. Sample collection methodologies for boreholes BH-1, BH-2, BH-3, and BH-4 entailed augering to the required deepest depth, inserting a respective stainless steel split-spoon sampler through the center of the hollow-stem auger, and negotiating the sampler through a two-foot interval (the split-spoon sampler length) with a 900 pound slide hammer. The split-spoon sample was collected from aliquots collected along the respective soil column. Soil was collected with a stainless steel spoon, homogenized in a stainless steel mixing bowl, and placed in labeled glass jars with Teflon-lined lids.

Decontamination was performed prior to the commencement of drilling and following the completion of each borehole. The drill rig and all associated drilling implements including bits, tools, drilling rod, and auger sections were decontaminated. The decontamination procedure involved an initial hot pressure/steam wash, analconox and tap water wash, tap water rinse, acetone rinse, methanol rinse, a deionized carbon-free water rinse, and a final steam wash. Sampling implements (gloves, split-spoon sampler, spoons, and bowls) were decontaminated using the same procedure, however, the deionized, carbon-free wash succeeded the steam wash. Equipment not used immediately after decontamination was wrapped in polyethylene plastic bags until needed.

Borehole abandonment was accomplished on each boring after sample collection. Drill cuttings were drummed and left on site pending sample analysis. A bentonite slurry was pumped into the borehole cavity via a tremie tube as the augers were simultaneously withdrawn. This procedure maintained borehole integrity and prevented bridging during the pumping. Twenty-four hours after the initial abandonment, bentonite was again pumped into any remaining borehole space (as a result of settling) to bring the bentonite level to ground surface.

14.0 SAMPLING RESULTS AND DISCUSSION

Complete data packages (with quality assurance memoranda) for this site inspection are located in Appendix G. Only those substances detected are included in the following data tables and discussion.

14.1 Ground Water Sampling Results

14.1.1 Inorganic Elements

Table 7 provides analytical data for detected inorganic elements in ground water samples. More than half of the 24 metals analyzed for (including cyanide) were not detected in MW-1 or MW-28. Of those metals detected, none occurred at levels which approached drinking water standards, where such standards were available. Two elements, manganese and sodium, were detected in the transfer blank as well as the samples. Water from MW-28 contained higher concentrations of all detected metals except vanadium, which was found at an estimated concentration of 7.1 ug/l in MW-1. These results are generally consistent with those obtained by the City of Seattle's testing of these wells in 1985, 1986, and 1987 (shown for comparison in Table 7).

14.1.2 Organic Compounds

Analytical results for volatile organic compounds (VOCs), semi-volatile compounds, and pesticides in ground water are illustrated in Table 8. An estimated value of 3 ug/l of the VOC methylene chloride was detected in MW-1. No other VOCs were detected in either MW-1 or MW-28. The semivolatile compound bis-2(ethylhexyl)phthalate was detected in both well samples at estimated values of 6 ug/l in MW-28 and 3 ug/l in MW-1 and was also detected in the blank at 4 ug/l. This data suggests that no obvious migration of this phthalate to ground water has taken place. A higher level of this compound (110 ug/l) was detected in MW-1 by the City of Seattle in 1986, which coincided with the Widing pond closure. This compound has been absent or detected at very low levels in samples taken before and after 1986 (55). Caprolactam, a tentatively-identified compound (TIC), was detected in MW-1 during the most recent sampling, at an estimated concentration of 7 ug/l. An unspecified TIC halogenated hydrocarbon was estimated at 26 ug/l in the blank but did not appear in either well sample. No pesticides were detected in MW-1 or MW-28 during this sampling effort or by the previous City of Seattle sampling effort. No VOCs or pesticides were detected in the transfer blank.

TABLE 7

**INORGANIC RESULTS FOR DETECTED ELEMENTS IN GROUND WATER
WIDING TRANSPORTATION, INC., MIDWAY TERMINAL
(ug/l)**

Elements	Date Collected:	MW-28 Background	MW-1 (b) (6) Home)	Transfer Blank	City of Seattle MW-1			City of Seattle MW-28	
		04/11/88	04/11/88	04/11/88	05/21/85	11/00/86	01/00/87	07/00/87	09/00/87
Aluminum		623 J	150 UJ	57.1 UJ	-	+	+	+	+
Arsenic		1.6 U	2.1 J	1.6 U	-	-	-	-	-
Barium		21.2 U	21.2 U	21.2 U	10	+	+	+	+
Cadmium		1.6 U	1.6 U	1.6 U	-	0.4	0.9	1.3	0.9
Calcium		44,800	14,800	27.3 U	+	17,600	16,900	55,400	40,600
Chromium		7.3 J	2.8 U	2.8 U	10	10	10	-	-
Copper		57.4	8.6 U	8.6 U	40	-	-	-	-
Iron		461	80.4 UJ	14.1 U	1,210	80	270	950	-
Lead		14.0 UJ	7.4 UJ	3.7 UJ	-	-	-	2	-
Magnesium		27,500 J	6,870 J	28.8 UJ	+	9,900	8,400	39,400	25,100
Manganese		483	4.3 J	1.2 J	5	20	30	470	390
Mercury		0.88	0.1 U	0.1 U	-	-	-	-	-
Nickel		8.3 U	11.5 J	8.3 U	-	20	-	-	10
Potassium		3,720 J	1,630 J	451 UJ	+	1,700	11,900	4,200	5,300
Sodium		14,500	7,710	608 J	+	7,700	7,600	20,500	15,500
Vanadium		4.9 J	7.1 J	4.4 U	+	+	+	+	+
Zinc		12.6 UJ	34.0 UJ	8.1 UJ	10	-	120	20	10

U - The material was analyzed for, but not detected. The associated numerical value is a contractual sample quantitation limit.

J - The associated numerical value is an estimated quantity because quality control criteria were not met or the reported value is less than the Contract Required Quantitation Limit (CRQL).

UJ - The material was analyzed for, but not detected. The associated numerical value is an estimated sample quantitation limit.

+

- Element not tested for.

- - Not detected.

TABLE 8

ORGANIC RESULTS FOR DETECTED
VOCs, SEMIVOLATILE COMPOUNDS AND PESTICIDES IN GROUND WATER
WIDING TRANSPORTATION, INC., MIDWAY TERMINAL
(ug/l)

Compounds	Date Collected:	MW-28		(b) (6)		Blank	City of Seattle MW-1			City of Seattle MW-28	
		Background		Home)		04/11/88	05/21/85	11/00/86	01/00/87	07/00/87	09/00/87
<u>VOCs</u>											
Methylene Chloride		9	U	3	J	8	U	+	-	-	-
Chloroform		5	U	5	U	5	U	+	1	-	-
Tetrachloroethene		5	U	5	U	5	U	+	3	3	-
Acetone		10	U	10	UJ	10	U	+	TR	-	14
<u>Semivolatile</u>											
bis(2-Ethyhexyl)phthalate		6	J	3	J	4	J	-	110	TR	-
Caprolactam (TIC)		-		7	J	-		+	+	+	+
Halogenated Hydrocarbon (TIC)		-		-		26	J	+	+	+	+
<u>Pesticides</u>											
None Detected											

- U - The material was analyzed for, but not detected. The associated numerical value is a contractual sample quantitation limit.
 J - The associated numerical value is an estimated quantity because quality control criteria were not met or the reported value is less than the Contract Required Quantitation Limit (CRQL).
 TR - Trace, quantity less than maximum quantifiable limits.
 UJ - The material was analyzed for, but not detected. The associated numerical value is an estimated sample quantitation limit.
 TIC - Tentatively-identified compound.
 + - Element not tested for.
 - - Not detected.

14.2 Soil Sampling Results

14.2.1 Inorganic Elements

Inorganic analytical results for soil samples are given in Table 9. Selenium, silver, and cyanide were not found in any of the samples obtained. Lead was detected in SS-3 at 72 mg/kg, more than 10 times the background level of 5.7 mg/kg. Copper also occurred at an elevated concentration (137 mg/kg) in this sample, eight times higher than the background level of 16.6 mg/kg. During the 1987 City of Seattle soil testing, similar levels of copper and lead were found in soil samples taken within several feet of SS-3 (Figure 5) (data is shown for comparison in Table 9). The source of copper in these soils is unknown. It is speculated that the lead may have originated with leaded gasoline, which may have been carried from the site surface into the ditch by surface water runoff. A noticeable decrease in aluminum and zinc concentrations occurred from the shallow soil samples to the deeper borehole samples (BH-1 through BH-4). The average aluminum concentration in the shallow soil samples was 18,412 mg/kg, compared with an average of 8,870 mg/kg in samples from approximately 25 feet below the ground surface. Zinc was detected at an average concentration of 58.7 mg/kg in shallow soils, compared to an average of 24 mg/kg in deeper soils. These results most likely reflect the differences in occurrence of the metal in native soils (boreholes) and fill (shallow soils). Mercury was detected in BH-5 (0.10 mg/kg) and BH-2 (0.09 mg/kg). The origin of mercury in these samples is not known.

14.2.2 Organic Compounds

Analytical results for VOCs, semivolatile compounds, and pesticides in soil samples appear in Table 10. Methylene chloride was detected in all shallow soil samples and the background sample, but was not found in any of the deep borehole samples. Acetone was detected in all but two samples, including the background sample. Two of the borehole samples, BH-1 and BH-3, contained between 10 and 20 times the background level of acetone. Both methylene chloride and acetone are common laboratory contaminants, but the high levels of acetone detected in two samples may indicate contamination from an on-site source.

Di-n-octylphthalate, a semivolatile compound, was estimated at 54 ug/kg in BH-1. Molecular sulfur (TIC) was in three of the borehole samples while 5-ethyl-2,2-dimethyl-1,3-dioxane (TIC) was identified in SS-5 at 1,300 ug/kg (J). Other semivolatile compounds listed in Table 10 were detected in the City of Seattle samples but were not detected in samples collected by E&E. A single pesticide residue (4,4-DDE) was detected in SS-4 ((b) (6) yard) at 19 ug/kg. Neither 4,4-DDE or any other pesticides were detected in the surface soil samples obtained on site or in the background soil sample. Pesticide data for BH-1 through BH-5 failed quality assurance criteria and were rejected.

TABLE 9

INORGANIC RESULTS FOR DETECTED ELEMENTS IN SOILS
WIDING TRANSPORTATION, INC., MIDWAY TERMINAL
(mg/kg)

Elements	Date Collected:	SS-1	SS-2	SS-3	SS-4 (b) (6)	SS-5	SS-6 South Side Boundary	SS-7	BH-5 Former Impoundment
		Background 04/11/88	N. Ditch 04/11/88	S. Ditch 04/11/88	Yard 04/11/88	NE Corner 04/11/88	04/11/88	SE Corner 04/11/88	05/03/88
Aluminum		22,700	16,200	17,300	24,100	21,300	11,400	16,600	17,700
Antimony		3.2 J	3.0 UJ	3.2 J	4.1 J	3.1 UJ	2.8 UJ	2.8 UJ	11.5 U
Arsenic		5.4	6.4	6.4	9.2	10.0	4.5	6.3	6.1
Barium		110	71.3	84.2	129	108	52.3	77.9	118
Beryllium		0.23J	0.23J	0.24J	0.38J	0.36J	0.13U	0.21J	0.74U
Cadmium		0.37U	1.0	0.64J	0.38U	0.38U	0.34U	0.35U	1.2 U
Calcium		2,380	4,570	3,300	2,550	2,530	3,980	3,040	4,600
Chromium		36.1 J	38.1 J	52.5 J	29.8 J	43.8 J	24.6 J	27.3 J	41.8
Cobalt		11.2	9.5 J	8.0 J	9.0 J	11.4	7.3 J	8.9 J	17.0
Copper		16.6	71.7	137	20.5	32.7	19.5	26.4	31.0
Iron		20,700	18,500	18,500	19,000	24,900	14,900	18,700	28,700
Lead		5.7	24.2	72.0	19.8	11.6	27.3	17.8	4.6
Magnesium		5,600	5,080	4,040	3,940	5,830	3,730	4,650	7,810
Manganese		253	305	240	483	311	227	256	576
Mercury		0.06U	0.06U	0.06U	0.06U	0.06U	0.05U	0.05U	0.10
Nickel		48.6	34.1	34.7	36.6	51.9	24.5	33.4	41.4
Potassium		623 J	244 J	534 J	215 J	430 J	362 J	403 J	746 J
Silver		1.1 U	1.0 U	1.1 U	1.1 U	1.1 U	0.97U	1.0 U	24.5 U
Sodium		52.8 U	378 J	180 J	54.0 U	54.3 U	160 J	101 J	358 U
Thallium		0.45J	0.39J	0.41U	0.40J	0.40U	0.36U	0.37U	13.2 UJ
Vanadium		52.7	54.2	52.8	47.9	60.5	42.1	48.6	63.4
Zinc		54.7	91.9	84.7	47.1	48.6	42.5	46.8	53.6

U - The material was analyzed for, but not detected. The associated numerical value is a contractual sample quantitation limit.

J - The associated numerical value is an estimated quantity because quality control criteria were not met or the reported value is less than the Contract Required Quantitation Limit (CRQL).

UJ - The material was analyzed for, but not detected. The associated numerical value is an estimated sample quantitation limit.

+ - Element not tested for.

- - Not detected.

TABLE 9 (CONT.)

INORGANIC RESULTS FOR DETECTED ELEMENTS IN SOILS
WIDING TRANSPORTATION, INC., MIDWAY TERMINAL
(mg/kg)

Elements	Date Collected:	City of Seattle						
		BH-1 05/04/88	BH-2 05/05/88	BH-3 05/04/88	BH-4 05/04/88	SO-6 06/00/87	SO-7 06/00/87	SO-8 06/00/87
Aluminum		8,810	9,310	8,830	8,530	+	+	+
Antimony		10.2 U	10.2 U	10.2 U	12.0	-	-	-
Arsenic		1.5 J	2.6	1.5 J	1.7 J	18.9	20.4	23.9
Barium		38.2 J	40.3	36.0 J	38.9 J	+	+	+
Beryllium		0.65U	0.65U	0.65U	0.64U	-	-	-
Cadmium		1.1 U	1.1 U	1.1 U	1.1 U	0.4	0.3	1.5
Calcium		3,490	3,590	3,350	4,340	+	+	+
Chromium		22.2	25.1	55.6	29.2	21.1	15.9	18.7
Cobalt		4.8 J	5.2 J	5.5 J	5.9 J	+	+	+
Copper		10.2	12.2	10.5	8.3	164	22.1	22.7
Iron		14,400	15,000	14,000	13,900	+	+	+
Lead		1.5	3.1	1.4	2.0	13.3	17.1	45.9
Magnesium		3,500	4,280	4,560	3,620	+	+	+
Manganese		230	231	234	258	+	+	+
Mercury		0.09U	0.09	0.08U	0.09U	-	-	-
Nickel		19.0	25.0	30.9	22.8	25.0 J	20.5 J	21.4 J
Potassium		475 J	510 J	284 J	514 J	+	+	+
Silver		21.6 U	10.9 U	21.6 U	21.5 U	-	-	-
Sodium		315 U	318 U	315 U	314	+	+	+
Thallium		1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	-	-	-
Vanadium		37.5	37.7	37.1	36.9	+	+	+
Zinc		23.0	27.8	23.2	22.0	128	142	161

U - The material was analyzed for, but not detected. The associated numerical value is a contractual sample quantitation limit.

J - The associated numerical value is an estimated quantity because quality control criteria were not met or the reported value is less than the Contract Required Quantitation Limit (CRQL).

UJ - The material was analyzed for, but not detected. The associated numerical value is an estimated sample quantitation limit.

+

- Not detected.

TABLE 10

ORGANIC RESULTS FOR DETECTED
VOCs, SEMIVOLATILE COMPOUNDS, AND PESTICIDES IN SOIL
WIDING TRANSPORTATION, INC., MIDWAY TERMINAL
(ug/kg)

Compounds	Date Collected:	SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	BH-5
		Background 04/11/88	N. Ditch 04/11/88	S. Ditch 04/11/88	(b) (6) Yard 04/11/88	NE Corner 04/11/88	South Side Boundary 04/11/88	SE Corner 04/11/88	Former Impoundment 05/03/88
<u>VOCs</u>									
Methylene Chloride		15 J	21 J	40 J	9 J	26 J	17 J	18 J	6 U
Acetone		15 J	18 J	49 J	18 J	12 UJ	10 J	25 J	15 J
Trichloroethene		6 UJ	6 UJ	4 J	6 UJ	6 UJ	5 UJ	5 UJ	6 U
Trichlorofluoromethane (TIC)		-	-	9 J	-	-	-	-	-
Tetrachloroethene		6 UJ	6 UJ	6 UJ	6 UJ	6 UJ	5 UJ	5 UJ	2 J
1,1,1-Trichloroethane		6 UJ	6 UJ	6 UJ	6 UJ	6 UJ	5 UJ	5 UJ	6 U
4-Methyl-2-pentanone (MIBK)		11 UJ	11 UJ	13 UJ	11 UJ	12 UJ	11 UJ	11 UJ	12 U
Benzene		6 UJ	6 UJ	6 UJ	6 UJ	6 UJ	5 UJ	5 UJ	6 U
Chlorobenzene		6 UJ	6 UJ	6 UJ	6 UJ	6 UJ	5 UJ	5 UJ	6 U
2-Butanone		11 UJ	11 UJ	13 UJ	11 UJ	12 UJ	11 UJ	11 UJ	11 UJ
<u>Semivolatiles</u>									
Carboxylic Acid (TIC)		-	370 J	-	-	-	-	-	-
Sulfur (TIC) (M01)		-	-	-	-	-	-	-	-
Di-n-Octylphthalate		370 U	740 U	2,100 U	760 U	390 U	690 U	730 U	470 UJ
Pentachlorophenol		1,900 U	3,700 U	10,000 U	3,800 U	2,000 U	3,500 U	3,600 U	2,400 UJ
Phenanthrene		370 U	740 U	2,100 U	760 U	390 U	690 U	730 U	470 UJ
Anthracene		370 U	740 U	2,100 U	760 U	390 U	690 U	730 U	470 UJ
Di-n-Butylphthalate		370 U	740 U	2,100 U	760 U	390 U	690 U	730 U	2,100 UJ
Fluoranthene		370 U	740 U	2,100 U	760 U	390 U	690 U	730 U	470 UJ
Pyrene		370 U	740 U	2,100 U	760 U	390 U	690 U	730 U	470 UJ
Benzo(a)Anthracene		370 U	740 U	2,100 U	760 U	390 U	690 U	730 U	470 UJ
Bis(2-Ethylhexyl)phthalate		370 U	590 UJ	2,100 U	760 U	440 UJ	690 U	730 U	100 UJ
Chrysene		370 U	740 U	2,100 U	760 U	390 U	690 U	730 U	470 UJ
Benzo(a)fluoranthenes (total)		370 U	740 U	2,100 U	760 U	390 U	690 U	730 U	470 UJ
Benzo(a)Pyrene		370 U	740 U	2,100 U	769 U	390 U	690 U	730 U	470 UJ
5-Ethyl-2,2-Dimethyl- 1,3-Dioxane (TIC)		-	-	-	-	1,300 J	-	-	-
<u>Pesticides</u>									
4,4-DDE		18 U	18 U	20 U	19	19 U	17 U	17 U	++

U - The material was analyzed for, but not detected. The associated numerical value is a contractual sample quantitation limit.

J - The associated numerical value is an estimated quantity because quality control criteria were not met or the reported value is less than the Contract Required Quantitation Limit (CRQL).

UJ - The material was analyzed for, but not detected. The associated numerical value is an estimated sample quantitation limit.

+ - Element not tested for.

++ - Pesticide data for this sample was rejected.

- - Not detected.

TABLE 10 (CONT.)

ORGANIC RESULTS FOR DETECTED
VOCs, SEMIVOLATILE COMPOUNDS, AND PESTICIDES IN SOIL
WIDING TRANSPORTATION, INC., MIDWAY TERMINAL
(ug/kg)

Compounds	Date Collected:	City of Seattle							
		BH-1 05/04/88	BH-2 05/04/88	BH-3 05/04/88	BH-4 05/04/88	SO-6 06/00/87	SO-7 06/00/87	SO-8 06/00/87	
<u>VOCs</u>									
Methylene Chloride		5 UJ	5 U	13 UJ	6 UJ	-	-	-	
Acetone		190 J	47 J	370 J	21 UJ	TR	TR	TR	
Trichloroethene		5 U	5 U	13 UJ	6 UJ	-	-	-	
Trichlorofluoromethane (TIC)		-	-	-	-	+	+	+	
Tetrachloroethene		5 UJ	5 U	13 UJ	6 UJ	-	90	90	
1,1,1-Trichloroethane		1 J	1 J	13 UJ	6 UJ	-	-	-	
4-Methyl-2-pentanone (MIBK)		8 J	11 U	26 UJ	12 UJ	-	-	-	
Benzene		5 UJ	5 U	13 UJ	6 UJ	-	90	-	
Chlorobenzene		5 UJ	5 U	13 UJ	6 UJ	200	300	900	
2-Butanone (MEK)		150 J	25 UJ	29 UJ	7 UJ	-	-	-	
<u>Semivolatiles</u>									
Carboxylic Acid (TIC)		-	-	-	-	+	+	+	
Sulfur (M01) (TIC)		400 J	2,000 J	600 J	-	+	+	+	
Di-N-Octylphthalate		54 J	360 UJ	360 UJ	360 UJ	400	-	-	
Pentachlorophenol		1,800 UJ	1,800 UJ	1,800 UJ	1,800 UJ	-	-	1,200	
Phenanthrene		360 UJ	360 UJ	360 UJ	360 UJ	-	-	TR	
Anthracene		360 UJ	360 UJ	360 UJ	360 UJ	-	-	TR	
Di-N-Butylphthalate		2,000 UJ	1,600 UJ	1,800 UJ	1,800 UJ	500	300	TR	
Fluoranthene		360 UJ	360 UJ	360 UJ	360 UJ	-	-	260	
Pyrene		360 UJ	360 UJ	360 UJ	360 UJ	-	-	TR	
Benzo(a)Anthracene		360 UJ	360 UJ	360 UJ	360 UJ	-	-	TR	
Bis(2-Ethylhexyl)phthalate		97 UJ	110 UJ	97 UJ	87 UJ	400	400	TR	
Chrysene		360 UJ	360 UJ	360 UJ	360 UJ	-	-	250	
Benzofluoranthenes (total)		360 UJ	360 UJ	360 UJ	360 UJ	-	-	350	
Benzo(a)Pyrene		360 UJ	360 UJ	360 UJ	360 UJ	-	-	200	
5-Ethyl-2,2-Dimethyl- 1,3-Dioxane (TIC)		-	-	-	-	+	+	+	
<u>Pesticides</u>									
4,4-DDE		++	++	++	++	-	-	-	

- U - The material was analyzed for, but not detected. The associated numerical value is a contractual sample quantitation limit.
- J - The associated numerical value is an estimated quantity because quality control criteria were not met or the reported value is less than the Contract Required Quantitation Limit (CRQL).
- TR - Trace, quantity less than minimum quantifiable limits.
- UJ - The material was analyzed for, but not detected. The associated numerical value is an estimated sample quantitation limit.
- +
- ++ - Pesticide data for this sample was rejected.
- - Not detected.

15.0 SUMMARY AND CONCLUSIONS

The sampling conducted during this investigation revealed significantly higher than background levels of lead and copper in soil from the south drainage ditch (SS-3) at the WTI Site. The lead may have originated from leaded gasoline used on site. The source of the copper is unknown. Acetone was detected at greater than 20 times the background level in BH-3 and greater than 10 times background in BH-1. The origin of this solvent may be the result of an on site activity. No other inorganic elements or organic compounds were detected in significant quantity in any soil or water sample.

As a result of the E&E FIT inspection at the WTI site, the following conclusions are presented:

- o No impact to ground water from the Widing Transportation truck rinse operation is evident.
- o Sufficient evidence was not found to indicate that rinsate lagoon contaminants migrated laterally into nearby on- or off-site soils.
- o Evidence of allegedly buried sludge was not found at the locations sampled.
- o Evidence of residual contamination from the alleged dumping of chemicals at the southwest corner of the site was not found.
- o The south drainage ditch on site may contain concentrations of lead and copper which are potentially hazardous to humans or the environment.
- o No evidence of pesticide contamination was found on site.

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APPENDIX A

SITE INSPECTION REPORT FORM
(EPA FORM 2070-13)

FOR
WIDING TRANSPORTATION, INC.

EPA SITE INSPECTION FORM 2070-13
FOR
WIDING TRANSPORTATION, INC.
SEATTLE, WASHINGTON

Date of Inspection: July 13, 1987

TDD Number: F10-8706-08

FIT Investigators: Gloria Skinner
Lynn Guilford

Report Prepared by: Gloria Skinner

Report Date: July 29, 1988

Submitted to: John Osborn, RPO
Field Operations and Technical Support Branch
U.S. Environmental Protection Agency
Region X
Seattle, WA

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT						I. IDENTIFICATION	
PART 1 - SITE LOCATION AND INSPECTION INFORMATION						01 STATE WA	02 SITE NUMBER D067156489
II. SITE NAME AND LOCATION							
01 SITE NAME (Legal, common, or descriptive name of site) Widing Transportation, Inc.				02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER 24300 Pacific Highway South			
03 CITY Kent		04 STATE WA	05 ZIP CODE 98031	06 COUNTY King		07 COUNTY CODE 033	08 CONG DIST 07
09 COORDINATES LATITUDE 47° 23' 06.0"		10 TYPE OF OWNERSHIP (Check one) ☒ A. PRIVATE ☐ B. FEDERAL ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER ☐ G. UNKNOWN					
III. INSPECTION INFORMATION							
01 DATE OF INSPECTION 07/13/87 MO/DAY/YR		02 SITE STATUS ☐ ACTIVE ☒ INACTIVE		03 YEARS OF OPERATION 1966 1986 UNKNOWN BEGINNING YEAR ENDING YEAR			
04 AGENCY PERFORMING INSPECTION (Check all that apply) ☒ A. EPA ☒ B. EPA CONTRACTOR Ecology & Environment, Inc. (E&E) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR (Name of firm) ☐ E. STATE ☐ F. STATE CONTRACTOR ☐ G. OTHER (Name of firm) (Specify)							
05 CHIEF INSPECTOR Gloria Skinner		06 TITLE Field Investigator		07 ORGANIZATION E&E, Inc. FIT		08 TELEPHONE NO. 206/624-9537	
09 OTHER INSPECTORS Lynn Guilford		10 TITLE Field Investigator		11 ORGANIZATION E&E, Inc. FIT		12 TELEPHONE NO. 206/624-9537	
William Wright		Project Manager		Ecology		206/438-3058	
13 SITE REPRESENTATIVES INTERVIEWED Peter J. Pedone, Sr.		14 TITLE Environmental Regulatory Compliance Specialist		15 ADDRESS 2598 Madrona Point Lane Steilacoom, WA 98388		16 TELEPHONE NO. 206/581-4623	
Rodman Widing, Sr.		Widing Shareholder Representative		P.O. Box 3446 Kent, WA 98032		206/824-3708	
17 ACCESS GAINED BY (Check one) ☒ PERMISSION ☐ WARRANT		18 TIME OF INSPECTION 07/13/87; 1000		19 WEATHER CONDITIONS Dry and clear			
IV. INFORMATION AVAILABLE FROM							
01 CONTACT William Glasser		02 OF (Agency/Organization) USEPA				03 TELEPHONE NO. 206/442-7215	
04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM Gloria Skinner		05 AGENCY E&E, Inc.	06 ORGANIZATION Seattle/FIT	07 TELEPHONE NO. 206/624-9537	08 DATE 07/21/88		

01 STATE WA	02 SITE NUMBER D067156489
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POTENTIAL HAZARDOUS WASTE SITE

SITE INSPECTION REPORT

I. IDENTIFICATION

01 STATE
WA02 SITE NUMBER
D067156489

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUND WATER CONTAMINATION	02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____	04 NARRATIVE DESCRIPTION
None reported, observed, or suspected.	
01 ☒ B. SURFACE WATER CONTAMINATION	02 ☒ OBSERVED (DATE: <u>12/22/80</u>) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: <u>0</u>	04 NARRATIVE DESCRIPTION
Widing allowed rinsate pond water to discharge to a nearby swamp.	
01 ☒ C. CONTAMINATION OF AIR	02 ☒ OBSERVED (DATE: <u>10/10/79</u> and <u>12/80</u>) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: <u>> 10,000</u>	04 NARRATIVE DESCRIPTION
Mixture of chemicals in rinsate ponds reacted to cause a release of noxious fumes to the atmosphere.	
01 ☐ D. FIRE/EXPLOSIVE CONDITIONS	02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____	04 NARRATIVE DESCRIPTION
None reported, observed, or suspected.	
01 ☐ E. DIRECT CONTACT	02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____	04 NARRATIVE DESCRIPTION
None reported, observed, or suspected.	
01 ☒ F. CONTAMINATION OF SOIL	02 ☒ OBSERVED (DATE: <u>6/86-5/88</u>) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: <u>9.2</u>	04 NARRATIVE DESCRIPTION
(Acres)	
Laboratory analysis prior to pond closure established presence of contamination in sludge and rinsate pond sediments. Contaminated material was excavated in 1986 (903 tons). Elevated levels of lead, copper, and acetone were found during 1988 site sampling at some locations.	
01 ☐ G. DRINKING WATER CONTAMINATION	02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____	04 NARRATIVE DESCRIPTION
None reported, observed, or suspected.	
01 ☐ H. WORKER EXPOSURE/INJURY	02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____	04 NARRATIVE DESCRIPTION
None reported, observed, or suspected.	
01 ☐ I. POPULATION EXPOSURE/INJURY	02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____	04 NARRATIVE DESCRIPTION
None reported, observed, or suspected.	

POTENTIAL HAZARDOUS WASTE SITE

EPA

SITE INSPECTION REPORT

I. IDENTIFICATION

01 STATE WA 02 SITE NUMBER D067156489

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

II. HAZARDOUS CONDITIONS AND INCIDENTS (CONTINUED)

01 J. DAMAGE TO FLORA 02 OBSERVED (DATE:) POTENTIAL ALLEGED

04 NARRATIVE DESCRIPTION

None reported, observed, or suspected.

01 K. DAMAGE TO FAUNA 02 OBSERVED (DATE:) POTENTIAL ALLEGED

04 NARRATIVE DESCRIPTION (Include name(s) of species)

None reported, observed, or suspected.

01 L. CONTAMINATION OF FOOD CHAIN 02 OBSERVED (DATE:) POTENTIAL ALLEGED

04 NARRATIVE DESCRIPTION

None reported, observed, or suspected.

01 X M. UNSTABLE CONTAINMENT OF WASTES 02 X OBSERVED (DATE: 9/79) POTENTIAL ALLEGED

(Spills/runoff/standing liquids/leaking drums)

03 POPULATION POTENTIALLY AFFECTED: ~ 30 04 NARRATIVE DESCRIPTION

Rinsate ponds overflowed. Also alleged dumping of liquids on site surface and burial of sludge on site. Ponds were unlined. Contaminants potentially remaining in site soils may pose a potential hazard to on-site workers.

01 X N. DAMAGE TO OFFSITE PROPERTY 02 OBSERVED (DATE:) POTENTIAL X ALLEGED

04 NARRATIVE DESCRIPTION

Neighbors to south and east allege dumping of chemicals on adjacent property and uncontrolled runoff from the site while the truck rinse facility was operational.

01 X O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 02 OBSERVED (DATE:) X POTENTIAL ALLEGED

04 NARRATIVE DESCRIPTION

Runoff from site and material spilled in drainage ditches was carried to storm drains on Pacific Highway south. Liquid from Midway site was discharged to the METRO sewer system at another Kent site owned by Widing.

01 X P. ILLEGAL/UNAUTHORIZED DUMPING 02 X OBSERVED (DATE: 5/72) POTENTIAL ALLEGED

04 NARRATIVE DESCRIPTION

Burial of sludge wastes on site has been alleged. Accused of dumping phenolic resin in Aberdeen, Washington by Ecology in 1972. See also Paragraph "N" above.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

Underground oil and gasoline tanks (believed to be in use at this time).

III. TOTAL POPULATION POTENTIALLY AFFECTED: > 10,000

IV. COMMENTS

Truck rinse operation ceased in late 1984. Site of rinsate ponds excavated and filled with clean fill material in 1986. Sludge and contaminated material removed to Arlington, Oregon.

V. SOURCES OF INFORMATION (Cite specific references. e.g., state files, sample analysis, reports)

1. Washington State Department of Ecology Site File.
2. Puget Sound Air Pollution Control Agency (PSAPCA) Site File.

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 4 - PERMIT AND DESCRIPTIVE INFORMATION				I. IDENTIFICATION	
EPA		01 STATE WA		02 SITE NUMBER D067156489	
II. PERMIT INFORMATION					
01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS	
☐ A. NPDES					
☐ B. UIC					
☐ C. AIR					
☐ D. RCRA					
☐ E. RCRA INTERIM STATUS					
☐ F. SPCC PLAN					
☒ G. LOCAL (Specify) Metro Sewer System	7501	06/04/85	?	Metro Discharge Permit	
☒ H. LOCAL (Specify) City of Kent	72	11/07/67	05/07/68	City of Kent Conditional Exception Permit (land use)	
☒ I. OTHER (Specify) ICC	CC-567	prior to 1970	---	Interstate Commerce Commission Operating Authority Permit	
☒ J. NONE City of Kent	---	1980	---	City of Kent approved ponds without a permit	
III. SITE DESCRIPTION					
01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE	04 TREATMENT (Check all that apply)	05 Other	
☒ A. SURFACE IMPOUNDMENT	> 325,000	gallons	☐ A. INCINERATION	☒ A. BUILDINGS ON SITE	
☒ B. PILES	> 250	cubic yards	☐ B. UNDERGROUND INJECTION	5	
☐ C. DRUMS, ABOVE GROUND	Capacity unknown	gallons	☐ C. CHEMICAL/PHYSICAL	06 AREA OF SITE	
☒ D. TANK, ABOVE GROUND			☐ D. BIOLOGICAL	9.3 (Acres)	
☐ E. TANK, BELOW GROUND			☐ E. WASTE OIL PROCESSING		
☐ F. LANDFILL			☐ F. SOLVENT RECOVERY		
☐ G. LANDFARM			☐ G. OTHER RECYCLING/RECOVERY		
☐ H. OPEN DUMP			☒ H. OTHER Rinsate Filtering (Specify)		
☐ I. OTHER (Specify)					
07 COMMENTS					
Over 903 tons of contaminated soil and sludge was removed from the site in 1986. E&E 1988 inspection detected elevated levels of lead and copper in the south ditch location and acetone in a soil boring sample.					
IV. CONTAINMENT					
01 CONTAINMENT OF WASTES (Check one)					
☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☐ C. INADEQUATE, POOR ☒ D. INSECURE, UNSOUND, DANGEROUS					
02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.					
Prior to 1986, three rinsate ponds (two unlined and one concrete lined) contained chemical tank truck rinsate. Sludge dredged from the ponds was disposed on the site surface. Ponds were allowed to overflow at times.					
V. ACCESSIBILITY					
01 WASTE EASILY ACCESSIBLE: ☐ YES ☒ NO					
02 COMMENTS					
Site is fenced. Access was restricted when truck rinse was operational. Waste is no longer present on site as sludge or liquid, although areas of contaminated soil may exist.					
VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)					
1. City of Kent Files. 2. Ecology Site File. 3. Widing Transportation, Inc.					

EPA		POTENTIAL HAZARDOUS WASTE SITE		I. IDENTIFICATION	
		SITE INSPECTION REPORT		01 STATE WA	02 SITE NUMBER D067156489
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA					
II. ENVIRONMENTAL INFORMATION					
01 PERMEABILITY OF UNSATURATED ZONE (Check one)					
☐ A. 10^{-6} - 10^{-8} cm/sec ☒ B. 10^{-4} - 10^{-6} cm/sec ☐ C. 10^{-4} - 10^{-3} cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec					
02 PERMEABILITY OF BEDROCK (Check one) - N/A					
☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE (10^{-4} - 10^{-6} cm/sec) ☐ C. RELATIVELY PERMEABLE (10^{-2} - 10^{-4} cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)					
03 DEPTH TO BEDROCK Unknown (ft)	04 DEPTH OF CONTAMINATED SOIL ZONE Unknown (ft)	05 SOIL pH Unknown (1)			
06 NET PRECIPITATION 17.24 (in)	07 ONE-YEAR 24-HOUR RAINFALL ~ 3.0 (in)	08 SLOPE SITE SLOPE 0 - 3 %	DIRECTION OF SITE SLOPE East and South	TERRAIN AVERAGE SLOPE 3 %	
09 FLOOD POTENTIAL SITE IS IN N/A YEAR FLOOD PLAN		10 SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY			
11 DISTANCE TO WETLANDS (5-acre minimum)		12 DISTANCE TO CRITICAL HABITAT (of endangered species)			
ESTUARINE A. (mi) OTHER B. 0.4 (mi)		> 3 (mi) ENDANGERED SPECIES:			
13 LAND USE IN VICINITY					
DISTANCE TO:					
COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	PRIME AG LAND	AG LAND		
A. < 1/4 (mi)	B. < 1/4 (mi)	C. > 3 (mi)	D. > 3 (mi)		
4 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY					
The site is nearly level, but is built up above surrounding land, most noticeably on the south and east where there is an approximate drop of six feet at the site boundary. West of the site, across Pacific Highway South, the land surface drops off sharply approximately 100 feet to the Parkside Wetland. There is a gentle slope to the south towards Midway Landfill, approximately 1/4 mile south of the site. Salt Water State Park boundaries are within one mile of the site to the southwest. The nearest residential area is a mobile home park of approximately 40 units between the site and Midway Landfill.					
VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)					
1. City of Seattle Midway Landfill Study. 2. USGS 7.5' Des Moines Quadrangle. 3. Climatic Atlas of the United States, U.S. Department of Commerce, 1979. 4. U.S. 1980 Census of the Population.					

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 6 - SAMPLE AND FIELD INFORMATION		I. IDENTIFICATION	
EPA		01 STATE WA	02 SITE NUMBER D067156489
II. SAMPLES TAKEN			
SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUND WATER	2	Keystone Environmental, Data Chem	06/29/88
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	12	Wilson Labs, Ecova, Spectrix, Data Chem	06/29/88
VEGETATION			
OTHER - Blank	1	Keystone Environmental, Data Chem	06/29/88
III. FIELD MEASUREMENTS TAKEN			
01 TYPE HNU	02 COMMENTS In use during soil sampling		
IV. PHOTOGRAPHS AND MAPS			
01 TYPE ☒ GROUND ☒ AERIAL		02 IN CUSTODY OF <u>Ecology and Environment, Inc.</u> (Name of organization or individual)	
03 MAPS ☒ YES ☐ NO	04 LOCATION OF MAPS <u>Ecology and Environment, Inc.</u>		
V. OTHER FIELD DATA COLLECTED (Provide narrative description)			
Two ground water samples, five composite soil boring samples, six surface soil grab samples, and a background surface soil grab sample were collected in 1988 and analyzed for the full range of EPA TCL compounds, including inorganics, volatile organic compounds, semivolatile organic compounds, and pesticides. Elevated levels of lead and copper were detected in a surface soil sample, an elevated acetone concentration was detected in one soil boring sample. No pesticides were detected in site samples. No impact to ground water from the truck rinse operation was detected. Sufficient evidence was not found to indicate that rinsate pond contaminants migrated laterally into nearby soils.			
VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)			
1. Sample Data Package. 2. E&E Site Inspection Records.			

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 7 - OWNER INFORMATION						I. IDENTIFICATION	
EPA						01 STATE WA	02 SITE NUMBER D067156489
II. CURRENT OWNER(S)						PARENT COMPANY (If applicable)	
01 NAME Widing Transportation Shareholders c/o Rodman Widing, Sr.			02 D+B NUMBER		08 NAME		09 D+B NUMBER
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.) P.O. Box 3446			04 SIC CODE		10 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		11 SIC CODE
05 CITY Kent		06 STATE WA	07 ZIP CODE 98032		12 CITY		13 STATE 14 ZIP CODE
01 NAME			02 D+B NUMBER		08 NAME		09 D+B NUMBER
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)			04 SIC CODE		10 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		11 SIC CODE
05 CITY		06 STATE	07 ZIP CODE		12 CITY		13 STATE 14 ZIP CODE
01 NAME			02 D+B NUMBER		08 NAME		09 D+B NUMBER
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)			04 SIC CODE		10 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		11 SIC CODE
05 CITY		06 STATE	07 ZIP CODE		12 CITY		13 STATE 14 ZIP CODE
01 NAME			02 D+B NUMBER		08 NAME		09 D+B NUMBER
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)			04 SIC CODE		10 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		11 SIC CODE
05 CITY		06 STATE	07 ZIP CODE		12 CITY		13 STATE 14 ZIP CODE
III. PREVIOUS OWNER(S) (List most recent first)						IV. REALTY OWNER(S) (If applicable; list most recent first)	
01 NAME			02 D+B NUMBER		01 NAME		02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)			04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE
05 CITY		06 STATE	07 ZIP CODE		05 CITY		06 STATE 07 ZIP CODE
01 NAME			02 D+B NUMBER		01 NAME		02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)			04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE
05 CITY		06 STATE	07 ZIP CODE		05 CITY		06 STATE 07 ZIP CODE
01 NAME			02 D+B NUMBER		01 NAME		02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)			04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE
05 CITY		06 STATE	07 ZIP CODE		05 CITY		06 STATE 07 ZIP CODE
01 NAME			02 D+B NUMBER		01 NAME		02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)			04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE
05 CITY		06 STATE	07 ZIP CODE		05 CITY		06 STATE 07 ZIP CODE
V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)							
1. E&E Site Investigation.							

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 8 - OPERATOR INFORMATION		I. IDENTIFICATION 01 STATE WA 02 SITE NUMBER D067156489	
II. CURRENT OPERATOR (Provide if different from owner)		OPERATOR'S PARENT COMPANY (If applicable)	
01 NAME None	02 D+B NUMBER	10 NAME	11 D+B NUMBER
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)	04 SIC CODE	12 STREET ADDRESS (P.O. BOX, RFD #, ETC.)	13 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	14 CITY	15 STATE 16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER		
III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)		PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)	
01 NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	14 CITY	15 STATE 16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD		
01 NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	14 CITY	15 STATE 16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD		
01 NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	14 CITY	15 STATE 16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD		
IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)			

EPA		POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT		I. IDENTIFICATION	
PART 9 - GENERATOR/TRANSPORTER INFORMATION				01 STATE WA	02 SITE NUMBER D067156489
II. ON-SITE GENERATOR					
01 NAME		02 D+B NUMBER			
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		04 SIC CODE			
05 CITY	06 STATE	07 ZIP CODE			
III. OFF-SITE GENERATOR(S)					
01 NAME		02 D+B NUMBER		01 NAME	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
05 CITY	06 STATE	07 ZIP CODE		05 CITY	06 STATE
01 NAME		02 D+B NUMBER		01 NAME	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
05 CITY	06 STATE	07 ZIP CODE		05 CITY	06 STATE
01 NAME		02 D+B NUMBER		01 NAME	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
05 CITY	06 STATE	07 ZIP CODE		05 CITY	06 STATE
IV. TRANSPORTER(S)					
01 NAME		02 D+B NUMBER		01 NAME	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
05 CITY	06 STATE	07 ZIP CODE		05 CITY	06 STATE
01 NAME		02 D+B NUMBER		01 NAME	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
05 CITY	06 STATE	07 ZIP CODE		05 CITY	06 STATE
V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)					

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 10 - PAST RESPONSE ACTIVITIES		I. IDENTIFICATION	
EPA		01 STATE WA	02 SITE NUMBER D067156489
II. PAST RESPONSE ACTIVITIES			
01 ☐ A. WATER SUPPLY CLOSED	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ C. PERMANENT WATER SUPPLY PROVIDED	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ D. SPILLED MATERIAL REMOVED	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☒ E. CONTAMINATED SOIL REMOVED	02 DATE <u>12/86</u>	03 AGENCY <u>Ecology</u>	
04 DESCRIPTION Three rinsate ponds excavated, > 900 tons of contaminated material and soil disposed of at Arlington, Oregon.			
01 ☐ F. WASTE REPACKAGED	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ G. WASTE DISPOSED ELSEWHERE	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ H. ON SITE BURIAL	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ I. IN SITU CHEMICAL TREATMENT	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ J. IN SITU BIOLOGICAL TREATMENT	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ K. IN SITU PHYSICAL TREATMENT	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ L. ENCAPSULATION	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ M. EMERGENCY WASTE TREATMENT	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ N. CUTOFF WALLS	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ P. CUTOFF TRENCHES/SUMP	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ Q. SUBSURFACE CUTOFF WALL	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 10 - PAST RESPONSE ACTIVITIES		I. IDENTIFICATION	
EPA	01 STATE WA 02 SITE NUMBER D067156489		
II. PAST RESPONSE ACTIVITIES (Continued)			
01 ☐ R. BARRIER WALLS CONSTRUCTED	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ S. CAPPING/COVERING	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ T. BULK TANKAGE REPAIRED	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ U. GROUT CURTAIN CONSTRUCTED	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ V. BOTTOM SEALED	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ W. GAS CONTROL	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ X. FIRE CONTROL	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ Y. LEACHATE TREATMENT	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ Z. AREA EVACUATED	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ 1. ACCESS TO SITE RESTRICTED	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ 2. POPULATION RELOCATED	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
01 ☐ 3. OTHER REMEDIAL ACTIVITIES	02 DATE _____	03 AGENCY _____	
04 DESCRIPTION _____			
V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)			
1. Ecology Site File.			

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION

01 STATE WA	02 SITE NUMBER D067156489
----------------	------------------------------

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☒ YES ☐ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

Ecology, 12/16/73, oil spill at Boeing, \$250 fine.
03/16/76, oil spill at Time Oil, \$250 fine.
09/25/79, treatment system declared inadequate, fined for overflows and on-site waste disposal.
04/13/86, supervised closure of rinsate ponds and excavation/removal of > 900 tons of contaminated soil.

PSAPCA (Puget Sound Air Pollution Control Agency), 10/10/79, fined for uncontrolled air emissions.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

APPENDIX B

WELL LOGS FOR MW-1, MW-28, AND LOCAL SUPPLY WELLS

RECORD OF BOREHOLE MW-1

Figure A-1

LOCATION See Figure

DATUM 375 ft. (approx.)

DATE 3-25-85

SAMPLER HAMMER WEIGHT 140 LB., DROP 30 IN.

BORING METHOD Air Rotary Drill

"SOIL PROFILE			SAMPLES		ELEVATION	STANDARD PENETRATION TEST ▲ "N" BLOWS PER FOOT		GROUNDWATER WELL INSTALLATION	
ELEVN DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE		BLOWS/FT	WATER CONTENT, PERCENT		
							Wp		Wn
375								Precast concrete flush fitting vault Cement grout 6" Steel locking casing 4" Flush coupled, threaded PVC casing	
0.0	Dark brown; sandy, Fine to coarse GRAVEL, trace silt.		1	AR					
370					370				
5.0	Medium to dark brown; silty, fine to medium SAND, trace gravel.		2	AR					
					365				
			3	AR					
360					360				
15.0	Medium to dark brown; Fine to coarse GRAVEL, to gravelly, fine to coarse SAND to sandy, fine to coarse GRAVEL, trace silt.		4	AR					
				355					
		5	AR						
				350					
		6	AR						
345				345					
30.0			7	AR					

REMARKS: AR - Air rotary drill

VERTICAL SCALE
1 IN. TO 5 FT.

Golder Associates

JOB # 853-1007

RECORD OF BOREHOLE MW-1

Figure A-1

LOCATION See Figure

DATUM 375 ft (approx.)

DATE 3-25-85

SAMPLER HAMMER WEIGHT 140 LB., DROP 30 IN.

BORING METHOD Air Rotary Drill

SOIL PROFILE			SAMPLES		ELEVATION	STANDARD PENETRATION TEST ▲ "N" BLOWS PER FOOT		GROUNDWATER WELL INSTALLATION	
ELEV DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE		WATER CONTENT, PERCENT			
						Wp	Wn	WL	
	Gray-brown to brown; Fine to coarse SAND, some gravel, trace silt.		7	AR	340				
			8	AR					
335 40.0	Gray-brown to brown; Fine to coarse SAND and Fine to coarse GRAVEL, some to trace silt.		9	AR	335				
				10	AR	330			
	50.0-55.0: Grades to Fine to coarse SAND, some gravel, some silt.			11	AR	325			
					320				
			12	AR					
315 50.0	Gray-brown to brown; silty, Fine to coarse SAND, some gravel.		13	AR	315				
310 65.0			14	AR	310				

4" Flush coupled, threaded PVC casing

Cement grout

Bentonite seal

Pea gravel

4" Flush
coupled,
threaded
PVC casing

Cement grout

Bentonite
seal

Pea gravel

REMARKS.

VERTICAL SCALE
1 IN TO 5 FT.

Golder Associates

JOB # 853-1007

RECORD OF BOREHOLE MW-1

Figure A-1

LOCATION See Figure

DATUM 375 Ft. (approx.)

DATE 3-25-85

SAMPLER HAMMER WEIGHT 140 LB., DROP 30 IN.

BORING METHOD Air Rotary Drill

SOIL PROFILE		SAMPLES			ELEVATION	STANDARD PENETRATION TEST ▲ "N" BLOWS PER FOOT		GROUNDWATER WELL INSTALLATION
ELEV N DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE		WATER CONTENT, PERCENT Wp Wn WL		
	Medium-brown; silty, Fine to coarse SAND and Fine to coarse GRAVEL.		14	AR	305			
			15	AR	300			
299 76.0	Gray-green to medium brown; fine to coarse GRAVEL and fine to coarse SAND, some to trace silt.		16	AR	295			
			17	AR	290			
	85.0-115.0 Local lenses of silt.		18	AR	285			
			19	AR	280			
			20	AR	275			
			21	AR				

4" Flush
coupled,
threaded
PVC casing

Pea gravel

0.020 Slotted
4" PVC Screen

REMARKS.

VERTICAL SCALE
1 IN. TO 5 FT.

Golder Associates

JOB # 853-1007

RECORD OF BOREHOLE MW-1

Figure A-1

LOCATION See Figure

DATUM 375 Ft (approx.)

DATE 3-25-85

SAMPLER HAMMER WEIGHT 140 LB., DROP 30 IN.

BORING METHOD Air Rotary Drill

SOIL PROFILE			SAMPLES			ELEVATION	STANDARD PENETRATION TEST ▲ "N" BLOWS PER FOOT	GROUNDWATER WELL INSTALLATION
ELEV DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	BLOWS/FT		WATER CONTENT, PERCENT Wp Wn WL	
	Gray-green to medium brown; fine to coarse GRAVEL and fine to coarse SAND, some to trace silt.					270		
						265		
						260		
						255		
250						250		
240	Dark gray; CLAY, some silt, trace sand, trace gravel.					245		
126.0	End of Hole at 126.0 Ft.							

0.020 Slotted
4" PVC screen

Pea gravel

Bentonite
seal

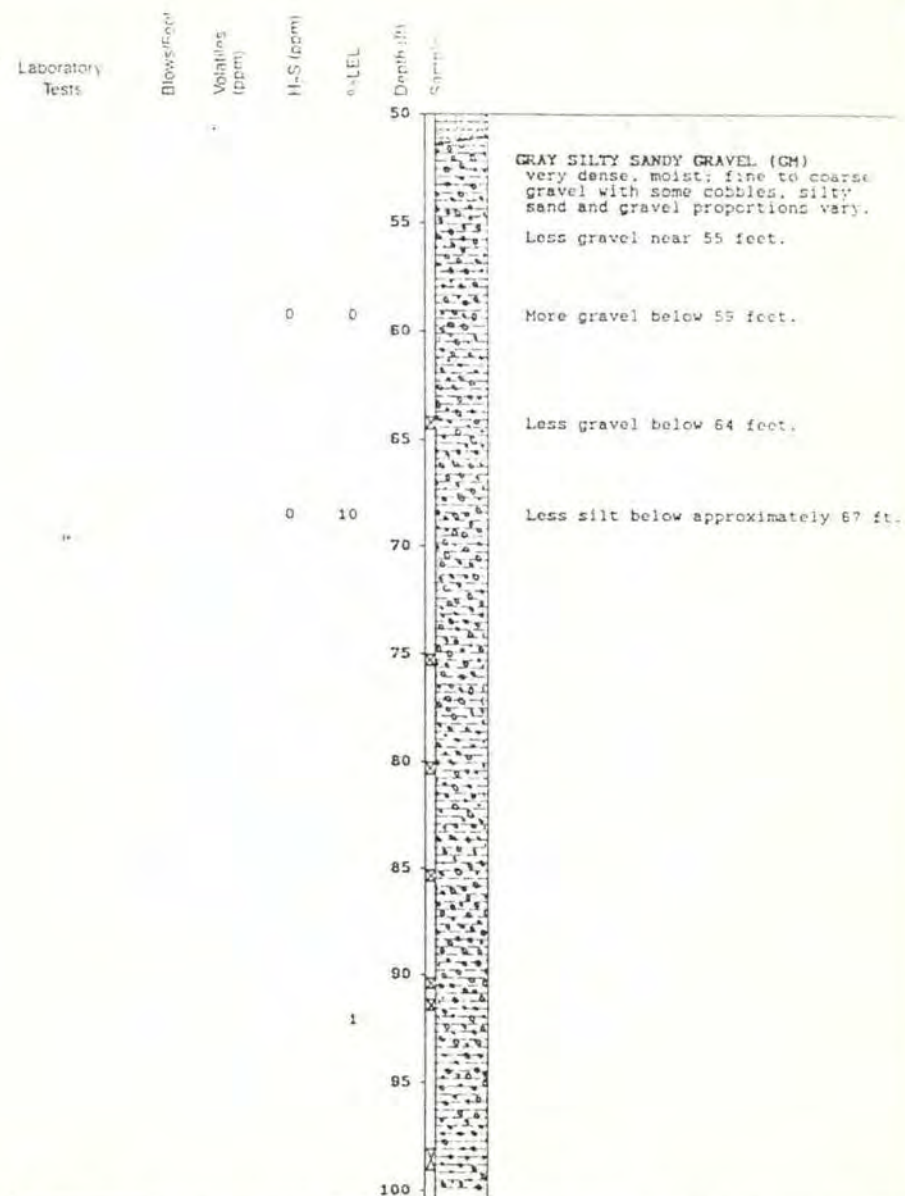
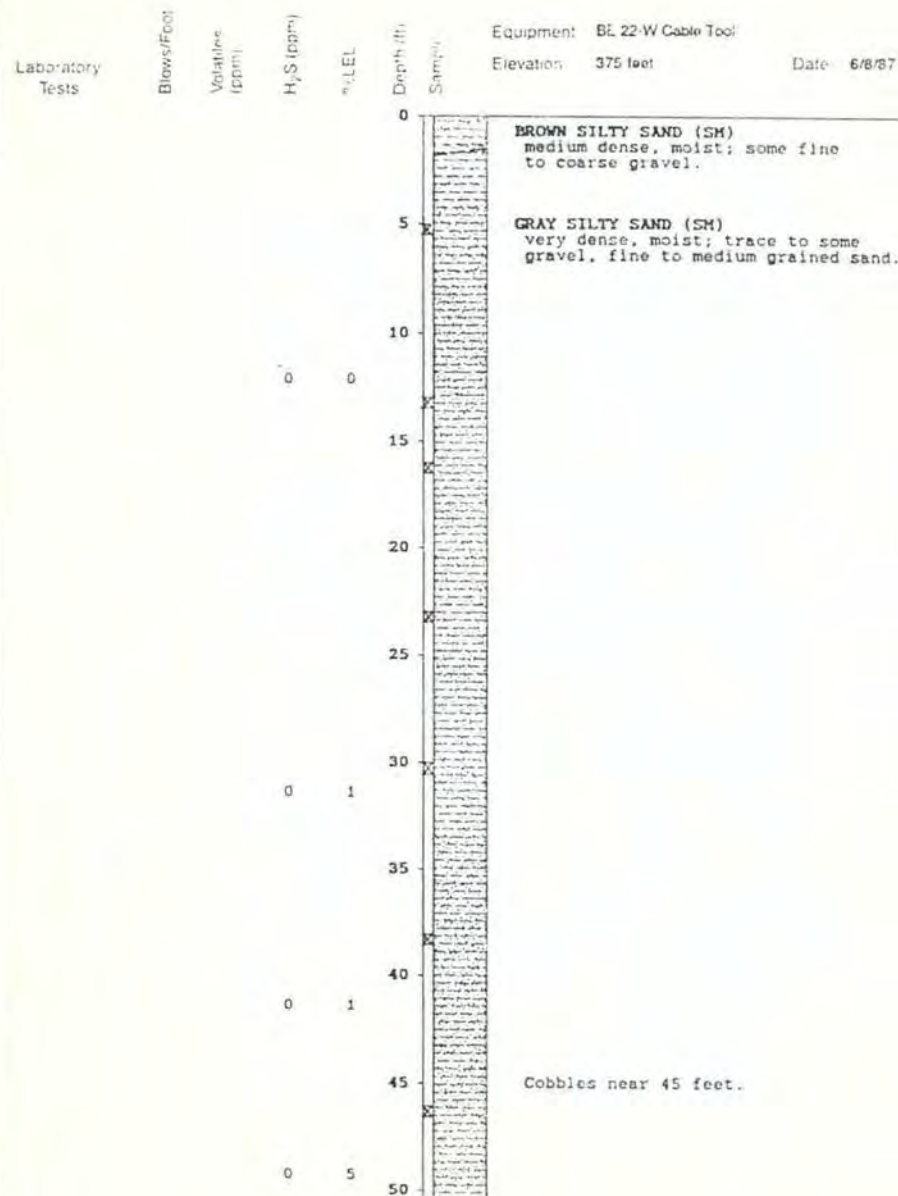
REMARKS:

VERTICAL SCALE

1 IN TO 5 FT.

Golder Associates

JOB # 853-1003



Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

Log of Boring MW-28

Midway Landfill
Kent, Washington

B50

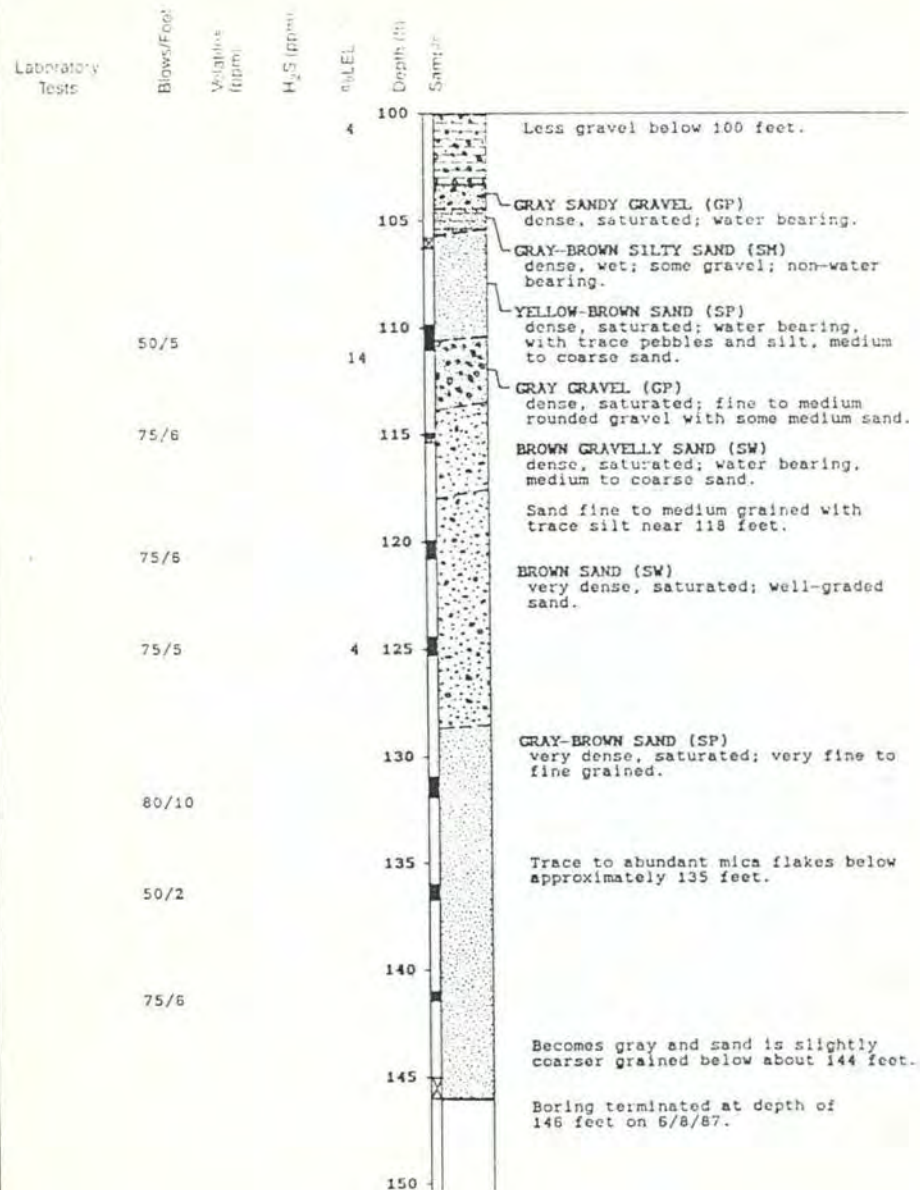
JOB NUMBER
14,169.102

GRAB
PS/TG

DATE
15 October 87

REVISION

DATE



Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

Log of Boring MW-28

Midway Landfill
Kent, Washington

B50

JOB NUMBER
14,169,102

DRAWN BY
PS/TG

APPROVED

DATE
15 October 87

(1) OWNER: Name Thora J. Birkeland Address 4512 So. 200th, Kent, Wash. 9803

(2) LOCATION OF WELL: County King - SE $\frac{1}{4}$ Sec. 03 T. 27 N. R. 04 W.M.

Bearing and distance from section or subdivision corner

(3) **PROPOSED USE:** Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well
(if more than one).....

New well	☒	Method: Dug	☐	Bored	☐
Deepened	☐	Cable	☒	Driven	☐
Reconditioned	☐	Rotary	☐	Jetted	☐

(5) **DIMENSIONS:** Diameter of well 6 inches.
 Drilled 35 ft. Depth of completed well 35 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from 0 ft. to 35 ft.
Threaded ☐ " Diam. from _____ ft. to _____ ft.
Welded ☒ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒

Type of perforator used.....

SIZE of perforations in. by in.

..... perforations from ft. to ft.

..... perforations from ft. to ft.

..... perforations from ft. to ft.

Screens: Yes ☐ No ☒

Manufacturer's Name.....

Type..... Model No.....

Diam. Slot size from ft. to ft.

Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft
Material used in seal Ben-ton-ite
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name SEARS
Type: JET HP 1/2

(8) **WATER LEVELS:** Land-surface elevation _____ ft.
above mean sea level...
Static level 14 ft. below top of well Date July 23
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☐ No ☐ If yes, by whom?

Yield: gal./min. with ft. drawdown after hrs

12	13	14	15
16	17	18	19

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

[illegible]

Date of test

Bailer test 8 gal/min. with 11 ft. drawdown after 2 hrs

Artesian flow g.p.m. Date

Temperature of water Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation

MATERIAL	FROM	TO
OVER Bardon	0	4'
glacial Till compact grey	4'	20'
impervious material		
Maepan - grey	20'	34'
water bearing sandy gravel	34'	35'

Work started....., 19..... Completed....., 19.....

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME EVERGREEN Dealing
(Person, firm, or corporation) (Type or print)

Address 15407 42 Ave So Seattle

[Signed] Robert J. Zuber
(Well Driller)

License No. 223-02-3719 Date July 25, 1972

WATER WELL REPORT

STATE OF WASHINGTON

22/04/10K
Application No
Permit No

(1) OWNER: Name John Green

Address 1718 So. 232nd Seattle, Wa. 98188

(2) LOCATION OF WELL: County King

NW 1/4 SE 1/4 Sec. 10 T 22 N. R 4E W 1/2

Bearing and distance from section or subdivision corner 216th & Frager Rd.

(3) PROPOSED USE: Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

Class 4

(4) TYPE OF WORK: Owner's number of well (if more than one) 1
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches
Drilled 65 ft. Depth of completed well 65 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6" Diam. from 0 ft. to 65 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☐ No ☒

Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☒ No ☐

Manufacturer's Name Johnson Well
Type Stainless steel Model No.
Diam. 6 Slot size 10 from 55 ft. to 65 ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name Red Jacket
Type 12GC H.P. 2

(8) WATER LEVELS: Land-surface elevation above mean sea level
Static level 20 ft. below top of well Date 12-13-85
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Driller
Yield: 33 gal./min. with 8'9" ft. drawdown after 4 hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
------	-------------	------	-------------	------	-------------

Date of test 1-15-86

Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation

MATERIAL	FROM	TO
Top soil	0	2
Sand & clay	2	18
Sand & seepage	18	23
Dirty sand & wood	23	36
Sand & clay	36	42
Seepage, sand, wood & peat	42	46
Sand & clay	46	54
Water & dirty sand	54	62
Water, coarse & fine sand	62	65

RECEIVED
FEB 13 1987

DEPARTMENT OF ECOLOGY
NORTHWEST REGION

Work started 12-13 1985 Completed 12-13 1985

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Richardson Well Drilling Co.
(Person, firm, or corporation) (Type or print)

Address P.O. Box 44427 Tacoma, Wa. 98444

[Signed] (Well Driller)

License No. 0419 Date 2-11 1986

Mehr

(USE ADDITIONAL SHEETS IF NECESSARY)

(1) OWNER: Name MES KING Address 21839 Frager Rd., Kent, VA 98031
(2) LOCATION OF WELL: County KING - S 1/4 NE 1/4 Sec. 10 T. 22 N., R. 4 W. M.
Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well
(if more than one).....

New well	☒	Method: Dug	☐	Bored	☐
Deepened	☐	Cable	☐	Driven	☐
Reconditioned	☐	Rotary	☒	Jetted	☐

(5) **DIMENSIONS:** Diameter of well 6 inches.
 Drilled 58 ft. Depth of completed well 58 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 Diam. from 0 ft. to 58 ft.
 Threaded ☐ " Diam. from ft. to ft.
 Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☐ No ☒

Type of perforator used.....

SIZE of perforations in. by in.

..... perforations from ft. to ft.

..... perforations from ft. to ft.

..... perforations from ft. to ft.

Screens: Yes ☒ No ☐

Manufacturer's Name Johnson
Type stainless Model No. _____
Diam. 6 Slot size .020 from 53 ft. to 58 ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal bentonite & cement
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
topsoil, brown, dry	0	2
sand, brown fine, dry	2	15
sand, brown, med., wet	15	23
silty sand, blue, dry to wet	23	54
water bearing sand	54	60

Work started 2/10/83, 1983 Completed 2/10/83, 1983

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME NORTHWEST PUMP & DRILLING CO.
(Person, firm, or corporation) (Type or print)

Address 3245 Auburn Way South, Auburn, WA 98002

[Signed] R.B. DeRone
(Well Driller)

License No. 0097 Date 2/178/83

(7) PUMP: Manufacturer's Name.....
Type: HP.....

(8) **WATER LEVELS:** Land-surface elevation above mean sea level... ft.
 Static level 12 ft. below top of well Date 2/10/83
 Artesian pressure _____ lbs. per square inch Date _____
 Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☐ No ☐ If yes, by whom?.....

Yield: gal./min. with ft. drawdown after hrs

11	11	11	11
11	11	11	11

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
.....					
.....					

Date of test

Bailer test 35 gal./min. with 9 ft. drawdown after 1 hrs

Artesian flow g.p.m. Date

Temperature of water Was a chemical analysis made? Yes ☐ No ☐



Permit No. _____

Bearing and distance from section or subdivision corner S 10° J Ptd Blk of Cont'd 1st Edition to Kent

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Brown Top soil	0	12
Gray silty sand	12	60
Gray clay	60	68
Gray water sand & gravel	68	78

ECY 050-1-20

WATER WELL REPORT

STATE OF WASHINGTON

22/04-242
Application No.
Permit No.

(1) OWNER: Name Invariant Bldg. Development Co. Address 534 S. Sixth, Kent, WA 98031
(2) LOCATION OF WELL: County King lot 56 - NE 1/4 SW 1/4 Sec 24 T 22 N. R 4E W.M.
Bearing and distance from section or subdivision corner Cross lot E line to Kent - Plat Book Vol. 4, Page 29

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☐
Heat pump Irrigation ☐ Test Well ☐ Other ☒

(4) TYPE OF WORK: Owner's number of well (if more than one) 2
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 78 ft. Depth of completed well 78 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from 0 ft. to 68 ft.
Threaded ☐ " Diam. from _____ ft. to _____ ft.
Welded ☒ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒
Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☒ No ☐ Johnson
Manufacturer's Name _____
Type Stainless Steel Model No. _____
Diam. 5 Slot size 15 from 68 ft. to 73 ft.
Diam. 5 Slot size 20 from 73 ft. to 78 ft.

Gravel packed: Yes ☐ No ☒ Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal puddling clay
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Brown Top soil	0	12
Dark gray silty sand	12	40
Gray clay	40	70
Gray water sand & gravel	70	78

Well #2

Work started 6/17 1981 Completed 6/19 1981

WELL DRILLER'S STATEMENT: 1981

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Johnson Drilling Co., Inc.
(Person, firm, or corporation) (Type or print)

Address 19415 108th Ave SE Renton 98051

[Signed] Bruce Johnson
(Well Driller)

License No. 0233 Date 6/19 1981

(9) WELL TESTS:

Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☐ No ☐ If yes, by whom? _____

Yield: gal./min. with _____ ft. drawdown after _____ hrs.

" " " " " "

" " " " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time Water Level Time Water Level Time Water Level

Date of test _____

Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? Yes ☐ No ☒

ECY 050-1-20

WATER WELL REPORT

STATE OF WASHINGTON

22/04-215
Application No. _____
Permit No. _____

(1) OWNER: Name Bill Sharick Address 10464 5th Ave. S., Seattle, WA
(2) LOCATION OF WELL: County King — NW 1/4 NE 1/4 Sec. 27 T. 22 N. R. 4 E W.M
Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) _____
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 137 ft. Depth of completed well 137 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from 0 ft. to 137 ft.
Threaded ☐ " Diam. from _____ ft. to _____ ft.
Welded ☒ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒
Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☐ No ☒
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ from _____ ft. to _____ ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☐ No ☒ Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☒ No ☐ To what depth? 13 ft.
Material used in seal bentonite & cement
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____
Type: _____ H.P.

(8) WATER LEVELS: Land-surface elevation _____ ft.
Static level 79 ft. below top of well Date 5/3/79
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom? _____
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
" " " " " "
" " " " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test 20 gal./min. with 22 ft. drawdown after 1 hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
brown sand & gravel	0	77
brown till	77	98
brown silty sand	98	113
brown till	113	134
water bearing sand & gravel	134	137

Work started 5/2/79, 19____ Completed 5/3/79, 19____

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Northwest Pump & Drilling Co.
(Person, firm, or corporation) (Type or print)

Address 3245 Auburn Way South, Auburn, WA

[Signed] R. B. DeKrom
(Well Driller)

License No. 0027 Date 5/4/79, 19____

ECY 050-1-20

WATER WELL REPORT

STATE OF WASHINGTON

Application No.

Permit No.

(1) OWNER: Name GLEN SALTER Address 24616 Lk. Fenwick Rd. So., Kent, WA
(2) LOCATION OF WELL: County KING — SE 1/4 NE 1/4 Sec 27 T.22 N., R.4E W.M.
Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) ...
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 39 ft. Depth of completed well 39 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6" Diam. from 0 ft. to 39 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☐ No ☒
Type of perforator used ...
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☐ No ☒
Manufacturer's Name ...
Type ... Model No ...
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel: ...
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal bentonite & cement
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? ... Depth of strata ...
Method of sealing strata off ...

(7) PUMP: Manufacturer's Name ...
Type: ... HP

(8) WATER LEVELS: Land-surface elevation above mean sea level ... ft.
Static level 17 ft. below top of well Date 6/9/83
Artesian pressure lbs. per square inch Date ...
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom? ...
Yield: gal./min. with ft. drawdown after hrs.
" " " " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test 25 8 1
Baller test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date ...
Temperature of water Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation

MATERIAL	FROM	TO
topsoil, brown, dry	0	2
sand & gravel, brown, dry	2	11
glacial till, brown, dry	11	34
water bearing sand & gravel	34	39

Work started 6/9/83, 19... Completed 6/9/83, 19...

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME NORTHWEST PUMP & DRILLING CO.
(Person, firm, or corporation) (Type or print)

Address 3245 Auburn Way South, Auburn, WA 9800

[Signed] R.B. DeLorme
(Well Driller)

License No. 0097 Date 6/13/83, 19...

WATER WELL REPORT

STATE OF WASHINGTON

Application No.

Permit No.

(1) OWNER: Name John Fisher

Address 130 S.W. 154th, Seattle, WA

(2) LOCATION OF WELL: County King — SE 1/4 SE 1/4 Sec 27 T. 22 N., R. 4 W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one)
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 45 ft. Depth of completed well 45 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from 0 ft. to 45 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☐ No ☒

Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☐ No ☒

Manufacturer's Name Model No.
Type
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal bentonite & cement
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 18 ft. below top of well Date 1/16/79
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " " " "
" " " " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Ballor test 30 gal./min. with 10 ft. drawdown after 1 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
brown cemented sand & gravel	0	7
brown sand & occ. gravel	7	24
brown till	24	39
water bearing sand & gravel	39	45

RECEIVED

NOV

DEPT OF ECOLOGY
REGIONAL OFFICE
EDMUNDS, WA 98022

Work started 1/16/79, 19 Completed 1/16/79, 19

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Northwest Pump & Drilling Co.
(Person, firm, or corporation) (Type or print)

Address 3245 Auburn Way South, Auburn, WA

[Signed] R.B. DeRemer
(Well Driller)

License No. 0097 Date 1/17/79, 19

WATER WELL REPORT

STATE OF WASHINGTON

Application No.

Permit No.

61-23861

(1) OWNER: Name NORTHWEST HOMES OF BELLEVUE Address 1420 Jones Ave NE., Renton, WA 98055
(2) LOCATION OF WELL: County KING - NE 1/4 SE 1/4 Sec 27 T 22 N. R 4E W.M.
Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one)
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 84 ft. Depth of completed well 84 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from 0 ft. to 84 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☐ No ☒

Type of perforator used
SIZE of perforations in. by in.
..... perforations from ft. to ft.
..... perforations from ft. to ft.
..... perforations from ft. to ft.

Screens: Yes ☒ No ☐

Manufacturer's Name JOHNSON
Type stainless Model No.
Diam. 6 Slot size .020 from 83 ft. to 75 ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:

Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.

Material used in seal bentonite & cement
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level.
Static level 43 ft. below top of well Date 4/22/81
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test 20 gal./min. with 12 ft. drawdown after 1 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
sand, brown, dry, silty, dry	0	23
sand & gravel, brown	23	41
sand, dry, brown	41	53
water bearing sand, occ. gravel	53	57
silty sand & clay, occ. gravel, blue	57	62
clay, brown, seams of sand	62	84

Work started 4/21/81 19..... Completed 4/22/81 19.....

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME NORTHWEST PUMP & DRILLING COMPANY

(Person, firm, or corporation) (Type or print)

Address 3245 Auburn Way South, Auburn, WA 9800

[Signed] R. B. DeG...
(Well Driller)

License No. 0097 Date 4/27/81 19.....

(USE ADDITIONAL SHEETS IF NECESSARY)

WATER WELL REPORT

STATE OF WASHINGTON

22/04/32J

Application No.

Permit No.

(1) OWNER: Name Vincent Foster

Address approx 12600 S 284th ST, Redon

(2) LOCATION OF WELL: County King

NE 1/4 SE 1/4 Sec 32 T 22 N, R 4 E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well
(if more than one)
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 168 ft. Depth of completed well 168 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6" Diam. from 0 ft. to 168 ft.
Threaded ☐ " Diam. from " ft. to " ft.
Welded ☒ " Diam. from " ft. to " ft.

Perforations: Yes ☐ No ☒
Type of perforator used
SIZE of perforations in. by in.
..... perforations from ft. to ft.
..... perforations from ft. to ft.
..... perforations from ft. to ft.

Screens: Yes ☒ No ☐
Manufacturer's Name Johnson 2' riser pipe
Type stainless steel Model No.
Diam. 5 Slot size 10 from 163 ft. to 168 ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal pudding clay
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: HP

(8) WATER LEVELS: Land-surface elevation
above mean sea level
Static level 147 ft. below top of well Date 9-22-86
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is
lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" 14 " 0 " 2 1/2 "
" " " Air Jet "

Recovery data (time taken as zero when pump turned off) (water level
measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and
show thickness of aquifers and the kind and nature of the material in each
stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Surface	0	2
Brown hardpan-clay	2	122
Brown clay	122	132
Brown hardpan	132	148
Brown sand & gravel-later	148	168

RECEIVED

DEPARTMENT OF ECOLOGY
NORTHWEST REGION

Work started 9-12, 1986 Completed 9-22, 1986

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is
true to the best of my knowledge and belief.

NAME Johnson Drilling Co., Inc.
(Person, firm, or corporation) (Type or print)

Address 19415 108th Ave SE Renton

[Signed] Brad Johnson
(Well Driller)

License No. 0233 Date 9-22, 1986

(1) OWNER: Name SMITH BROS. FARMS, INC. Address P.O. Box 778 KENT WA. 98031
 (2) LOCATION OF WELL: County KING - NE 1/4 Sec 35 T 22 N. R 4 E W 3
 Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☒ Municipal ☐
 Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) 2
 New well ☒ Method: Dug ☐ Bored ☐
 Deepened ☐ Cable ☒ Driven ☐
 Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 8 inches.
 Drilled 226 ft. Depth of completed well 226 ft.

(6) CONSTRUCTION DETAILS:
 Casing installed: 8 " Diam. from 0 ft. to 211 ft.
 Threaded ☐ " Diam. from _____ ft. to _____ ft.
 Welded ☒ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒
 Type of perforator used _____
 SIZE of perforations _____ in. by _____ in.
 _____ perforations from _____ ft. to _____ ft.
 _____ perforations from _____ ft. to _____ ft.
 _____ perforations from _____ ft. to _____ ft.

Screens: Yes ☒ No ☐
 Manufacturer's Name Johnson
 Type Telescoping Model No. _____
 Diam. 8 Slot size 0.40 from 216 ft. to 226 ft.
 Diam. 8 Slot size 0.30 from 211 ft. to 216 ft.

Gravel packed: Yes ☐ No ☒ Size of gravel: _____
 Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.
 Material used in seal Benatone
 Did any strata contain unusable water? Yes ☐ No ☒
 Type of water? _____ Depth of strata _____
 Method of sealing strata off _____

(7) PUMP: Manufacturer's Name STA-RITE
 Type: SUBMERSIBLE #90P6M-3 HP 15

(8) WATER LEVELS: Land-surface elevation above mean sea level 50 ft.
 Static level NONE ft. below top of well Date July 10-74
 Artesian pressure _____ lbs. per square inch Date _____
 Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
 Was a pump test made? Yes ☒ No ☐ If yes, by whom? Driller
 Yield: 140 gal./min. with 200 ft. drawdown after 6 hrs.
 " " " "
 " " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
8:30	200	8:33	55	8:36	35
8:31	110	8:34	45	8:37	30
8:32	70	8:35	40	8:38	27

Date of test July 9-74
 Bailor test 50 gal./min. with 45 ft. drawdown after 2 hrs.
 Artesian flow _____ g.p.m. Date _____
 Temperature of water _____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation

MATERIAL	FROM	TO
Black Heavy Top Soil	0	4
grey clay with binder	4	25
Black Sand	25	40
Fine Sand - water bearing	40	51
grey clay	51	80
grey till - compact	80	93
Very dirty - sand & gravel	93	100
Heavy Sand - Fine	100	120
grey clay	120	138
Fine Sand - dirty	138	161
grey clay	160	192
Dirty sand & gravel	192	202
clean coarse sand		
water bearing	205	226

Work started June 14, 1974 Completed July 10, 1974

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Evergreen Drilling
 (Person, firm, or corporation) (Type or print)

Address 25427-5 E 192 Maple Vlle

[Signed] Robert L. Luning
 (Well Driller)

License No. C139 Date July 11, 1974

WATER WELL REPORT

STATE OF WASHINGTON

File Original and First Copy with
the Division of Water Resources
Second Copy — Owner's Copy
Third Copy — Driller's Copy

Application No. 8089
Permit No. 7559

(1) OWNER:

Name King County Water District No. 54
Address P. O. Box 367
Des Moines, Washington 98016

(2) LOCATION OF WELL:

County _____ Owner's number, if any— #4
1/4 Section T. R. W.M.
Bearing and distance from section or subdivision corner
See attached drawing for legal description

(3) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(5) TYPE OF WELL:

Rotary ☐ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED:

Threaded ☐ Welded ☒

16" Diam. from 0 ft. to 30.5 ft. Gage _____
" Diam. from _____ ft. to _____ ft. Gage _____
" Diam. from _____ ft. to _____ ft. Gage _____

(7) PERFORATIONS:

Perforated? ☐ Yes ☒ No

Type of perforator used _____

SIZE of perforations	in.	by	in.
perforations from _____ ft. to _____ ft.			
perforations from _____ ft. to _____ ft.			
perforations from _____ ft. to _____ ft.			
perforations from _____ ft. to _____ ft.			
perforations from _____ ft. to _____ ft.			

(8) SCREENS:

Well screen installed ☐ Yes ☒ No

Manufacturer's Name Johnson Well Screen Co.
Type Stainless Steel Model No. _____
Diam. 1 1/2" Slot size 50 Set from 30.5 ft. to 32.5 ft.
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.

(9) CONSTRUCTION:

Was well gravel packed? ☐ Yes ☒ No Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.
Was a surface seal provided? ☐ Yes ☒ No To what depth? _____ ft.
Material used in seal—
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(10) WATER LEVELS:

Static level - 61 ft. below land surface Date 6-13-67
Artesian pressure _____ lbs. per square inch Date _____
Water is controlled by _____
(Cap, valve, etc.)

(11) WELL TESTS:

Drawdown is amount water level is lowered below static level

Was a pump test made? ☐ Yes ☒ No If yes, by whom?

Yield:	gal./min. with	ft. drawdown after	hrs.
300	110	5	
300	99	"	"
300	55	"	"

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level
2:15	109.7	2:25	107.5
2:17	107.5	2:27	105.6
2:43	104.6	3:00	104.3
2:49	104.3	3:10	

Date of test _____
Bailer test gal./min. with _____ ft. drawdown after _____ hrs.

Artesian flow g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? ☐ Yes ☒ No

(12) WELL LOG:

Diameter of well _____ inches.

Depth drilled 334 ft. Depth of completed well 328 ft.

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Top soil	0	2
Yellow clay, sand & gravel	2	5
Yellow clay	5	16
Blue clay	16	64
Blue clay, streaks sand & gravel	64	85
Fine & coarse sand & gravel	85	100
Cemented sand & gravel	100	120
Clay & gravel	120	130
Fine & coarse sand - water	130	133
Fine silty sand & clay	133	138
Fine & coarse sand & gravel -		
hard streaks of clay	138	146
Fine & coarse sand, clay & gravel	146	150
Cemented sand & gravel	150	162
Fine & coarse sand, clay & gravel	162	164
Fine & coarse sand, gravel & hard		
clay streaks	164	176
Cont. on attached sheet		

Work started April 20 1967. Completed June 22, 1967

(13) PUMP:

Manufacturer's Name JACUZZI
Type 10 MS7 H.P. 60

Well Driller's Statement:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Richardson Well Drilling Company
(Person, firm, or corporation) (Type or print)

Address 219 So. 115th St., Tacoma, Washington

[Signed] _____ (Well Driller)

License No. 223-02-5194 Date August 2, 1967

(USE ADDITIONAL SHEETS IF NECESSARY)

WATER WELL REPORT

STATE OF WASHINGTON

Application No. 91-238811
Permit No. 91-238811

(1) OWNER: Name KING County WATER DISTRICT #54 Address 922 South 219th STREET, Des Moines WA

(2) LOCATION OF WELL: County KING - NW 1/4 SE 1/4 Sec. 8 T. 22 N. R. 4 E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well 5
(if more than one) ...
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 12 inches.
Drilled 245 ft. Depth of completed well 247 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 12 " Diam. from +3 ft. to 212.5 ft.
Threaded ☐ " Diam. from _____ ft. to _____ ft.
Welded ☒ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒

Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☒ No ☐

Manufacturer's Name COOK
Type 304 STAINLESS Model No. _____
Diam. 10" Slot size #100 from 212.6 ft. to 218 ft.
Diam. 10" Slot size #100 from 223 ft. to 232.15 ft.

Gravel packed: Yes ☐ No ☐ Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.

Material used in seal BENTONITE
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name NA
Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation 175 ft.
Static level 46.3 ft. below top of well Date 5-6-82
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Moeller & R-N
Yield: 500 gal./min. with 55 ft. drawdown after 5 1/2 hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
10 min	74'				
30	69'				
90	61'				

Date of test 5-7-82
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water 50.4 Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
TOP SOIL	0	8
BLUE CLAY	8	70
GRAY SILTY SAND	70	90
SILTY BLACK AND GREEN SAND AND GRAVEL	90	117
GRAY SILTY SAND AND GRAVEL	117	128
BLACK AND GREEN SAND AND GRAVEL	128	135
GRAY SILTY SAND AND GRAVEL	135	156
BLACK AND GREEN SAND AND GRAVEL (WATER BEARING)	156	202
GRAY SAND WITH SOME GRAVEL	202	208
BLACK AND GREEN SAND AND GRAVEL (WATER BEARING)	208	236
DENSE BLUE-GREEN CLAY BOUND SAND AND GRAVEL WITH PEAT	236	
TOTAL DEPTH		245

RECEIVED
JUN - 8 1982

WILLIAMS, ROTH
& ASSOC., INC.

Work started 4/6, 1982 Completed 5/12, 1982

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Moeller Drilling
(Person, firm, or corporation) (Type or print)

Address 4020 S 170 SEATTLE

[Signed] W. J. Mueller
(Well Driller)

License No. 0930 Date 6-2, 1982

Permit No.

61-24212P

(1) OWNER: Name King County Water Dist.#75 Address P. O. Box 58100, Seattle, Wa. 9818

(2) LOCATION OF WELL: County King - 1/4 SE 1/4 Sec. 9 T 22 N. R. 4E W. M.

Bearing and distance from section or subdivision corner 20' South of previously abandoned well

(3) **PROPOSED USE:** Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of wells Angle Lake
(if more than one) ...
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rev Rotary ☒ Jetted ☐

(5) **DIMENSIONS:** Diameter of well 20-12 inches.
Drilled 496 ft. Depth of completed well 485 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 30" Diam. from 0 ft. to 115 ft.
 Threaded ☐ 20" Diam. from + 3 ft. to 415 ft.
 Welded ☒ 12" Diam. from See Note (2) ft.

Perforations: Yes ☐ No ☒

Type of perforator used.....	SIZE of perforations		in. by	in.
..... perforations from	ft. to	ft.		
..... perforations from	ft. to	ft.		
..... perforations from	ft. to	ft.		

Screens: Yes ☒ No ☐ UOP Johnson
 Manufacturer's Name _____
 Type Watermark SS Model No. -
 Diam. 12 PS Slot size See Note (2) to _____ ft.
 Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☒ No ☐ Size of gravel: $\frac{1}{2}$ xx 1/8
Gravel placed from See Note (3) ft.

Surface seal: Yes ☒ No ☐ To what depth? See Note
Material used in seal See Note (8)
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? - Depth of strata -
Method of sealing strata off.

(7) PUMP: Manufacturer's Name.....
Type: HP.....

(8) **WATER LEVELS:** Land-surface elevation above mean sea level... 332 ft.
 Static level 202 ft. below top of well Date 8/30/83
 Artesian pressure - lbs. per square inch Date -
 Artesian water is controlled by - (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☒ No ☐ If yes, by whom? SEI

Yield: 2955 gal./min. with 166 ft. drawdown after 284 hrs

note: Static" @ start of test - 224 ft.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
2	328 $\frac{1}{2}$	15	311 $\frac{1}{2}$	60	297
5	321 $\frac{1}{2}$	20	308 $\frac{1}{2}$	90	293
10	315	30	304	120	290

Date of test 8/2-3/83
 Bailer test - gal/min. with - ft. drawdown after - hrs
 Artesian flow - g.p.m. Date -
 Temperature of water - Was a chemical analysis made? Yes ☒ No ☐
 by Owner

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Well log on attached sheet		

Well log on attached sheet

RECEIVED
OCT 03 1983

DEPARTMENT OF ECOLOGY
NORTHWEST REGION

Work started 5/27 1983 Completed 9/15 1983

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Schneider Equipment, Inc.
(Person, firm, or corporation) (Type or print)

Address 21881 River Rd NE, St. Paul, Or.

[Signed] Stephen J. Schneider
(Well Driller)

License No. 643 Date 9/28 19 81

WATER WELL REPORT

STATE OF WASHINGTON

Application No. 7-11

Permit No.

OWNER: Name King County Water Dist. #75 Address P. O. Box 68100, Seattle, Wa 98188

(2) LOCATION OF WELL: County King - SE 1/4 Sec 9 T. 22 N. R. 4E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) Angle Lake
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rev Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well Abandoned inches.
Drilled 500 ft. Depth of completed well 0 ft.

(6) CONSTRUCTION DETAILS: See details notes

Casing installed: 30 " Diam. from 1 ft. to 36 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☒ No ☐ In drill pipe
Type of perforator used Mills knife
SIZE of perforations 3/8 in. by 2 in.
456 perforations from 179 ft. to 293 ft.
308 perforations from 77 ft. to 154 ft.
 perforations from ft. to ft.

Screens: Yes ☐ No ☒
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☒ No ☐ Size of gravel: pea
Gravel placed from 311 ft. to 500 ft.

Surface seal: Yes ☒ No ☐ To what depth? 4-36 ft.
Material used in seal neat cement grout
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: HP

(8) WATER LEVELS: Land-surface elevation ~332 ft.
Static level 183 ft. below top of well Date 4-28-83
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☒ If yes, by whom? SEI
Yield: 465 gal./min. with 105 ft. drawdown after 3 1/2 hrs.
" See Notes " " " "

Recovery data (time taken as zero when pump turned off). (water level measured from well top to water level) Time in minutes

Time	Water Level	Time	Water Level	Time	Water Level
0	288	10	208		
1	211	15	207		
5	209	20	206		

Date of test 4-28-83
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☒ No ☐
by owner

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Well log on attached sheet and Notes		

(Details) Notes:

- (1) Well was drilled 38" diameter to 36 ft., 30" casing installed from -1' to 36' and 7' to 7 1/2 yds neat cement grout pumped between the 38" bore and 30" casing from 36' to 4'.
- (2) Well was then drilled 18" diameter from 36 ft to 400'; a temporary 8" casing was installed to test the quantity and quality of the lower aquifer and the annular space back filled with pea gravel to 285 ft. then with native clay and bentonite from 285' to approximately 250 ft.
- (3) The lower aquifer was then test pumped and water samples taken (see items 8 & 9) while the annular space above the clay/bentonite plug was kept full of water.
- (4) After test pumping, the 8" casing removed and the hole was reamed to 26" diameter to 302 ft.; whereupon the hole caved in around the drill tools. The bottom of the bit was raised to 300 ft. before the rig was unable to move it further.
- (5) Numerous attempts were made to remove the caved material from the annulus but the hole continued to slough and it was decided to abandon the well

(cont'd attached sheet)

Work started 3-30, 19 83 Completed 6-30, 19 83

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Schneider Equipment, Inc.
(Person, firm, or corporation) (Type or print)

Address 21881 River Rd NE, St. Paul, Or.
97137

[Signed] Stephen J. Schneider
(Well Driller)

License No. 643 Date 7-16, 19 83

KING COUNTY WATER DISTRICT NO. 75
Angle Lake Abandoned Well

(10) WELL LOG:

<u>Material</u>	<u>From</u>	<u>To</u>
Gravel, cobbles & clay (fill)	0	4
Peat	4	14
Hardpan clay, grey	14	16
Gravel, 6" minus	16	19
Gravel, cobbles, boulders w/ some grey clay	19	31
Clay, grey w/ occasional gravel	31	57
Gravel, 8" minus & clay, grey	57	76
Gravel, 5" minus	76	78
Clay, grey w/ brown streaks	78	81
Sand, coarse w/ some gravel	81	85
Gravel, 1½ minus w/ sand, coarse	85	90
Sand, med-fine	90	97
Gravel & sand, 3" minus, cemented	97	144
Gravel & sand, 3" minus	144	184
Clay, brown	184	187
Clay, blue-grey	187	217
Clay, grey, sandy	217	218
Gravel, 3" minus w/ some grey clay	218	219
Gravel, 3/4 minus & fine sand w/ layers of clay, grey	219	223
Sand, medium w/ some gravel, ½" minus	223	224
Clay, grey w/ some gravel	224	225
Sand, med-fine, black	225	226
Sand, medium, w/ some coarse sand & gravel	226	228
Sand, medium, w/ trace of gravel	228	230
Sand, coarse w/ some gravel 3/4 minus	230	231
Gravel, 2" minus w/ sand, coarse-fine	231	232
Gravel, 3" minus w/ sand, coarse-medium	232	240
Gravel, 4" minus w/ sand, coarse-fine	240	255
Gravel, 3" minus w/ sand, coarse & some clay, grey	255	257
Clay, grey	257	367
Clay, grey w/ occasional gravel	367	405
Gravel, coarse sand, & green clay	405	410

RECEIVED
JUL 20 1983
DEPARTMENT OF ECOLOGY
NORTHWEST REGION

KING COUNTY WATER DISTRICT NO. 75

Angle Lake Abandoned Well

Pag 2 of 2

<u>Material</u>	<u>From</u>	<u>To</u>
Clay, grey w/ gravel	410	413
Gravel, 1" minus w/ clay, grey	413	415
Gravel, 2" minus & coarse sand w.b. v. slight cemented	415	434
Gravel, 1" minus w/ clay, fine sandy	434	440
Gravel, 2" minus & coarse sand w.b. v. slight cemented	440	454
Gravel, 2" minus w/ clay	454	458
Gravel, 2" minus w/ coarse sand	458	459
Gravel, 1" minus w/ clay	459	466
Clay, grey w/ gravel & cobbles	466	468
Gravel, 2" minus w/ coarse sand w.b.	468	482
Sand, coarse & gravel w/ clay	482	484
Clay, grey, sandy	484	487
Clay, grey, soft	487	500

(Details) Notes Continued

(6) The hole below the bit was first cleared of material to 311 ft. The drill pipe was perforated and then cut off at 179 ft. Neat cement grout was then pumped from inside the drill pipe from 311 to 170 ft. The drill pipe was then pulled up to approximately 156 ft. when it locked up. The drill pipe was then perforated up to 77 ft. and cut off again. Neat cement grout was then pumped from 170 ft. to the top of the 30" casing as the upper part of the drill pipe was removed. The balance of the hole was covered with native fill.

(7) Tools left in the hole and their locations are:

18" pilot bit	298'-300'
26" hole opener	293'-298'
24" stabilizer	275'-293'
6" flanged drill pipe	179'-275'
6" flanged drill pipe	77'-156'

(8) Construction of a new well was started approximately 20 ft. South of this abandoned hole.

JUL 20 1933

 DEPARTMENT OF ECOLOGY
 NORTHWEST REGION

WATER WELL REPORT

STATE OF WASHINGTON

Application No.

Permit No.

61-24214

(1) OWNER: Name King County Water Dist. #75 Address PO Box 68100, Seattle, Wa. 98188

(2) LOCATION OF WELL: County King NE 1/4 Sec. 8 T. 22 N. R. 4E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) Des Moines Well
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rev Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 24 - 18 inches.
Drilled 383 ft. Depth of completed well 362 ft.

(6) CONSTRUCTION DETAILS: casing is all 375 wall
Casing installed: 24 " Diam. from 4 ft. to 314 ft.
Threaded ☐ 18 " Diam. from 292 ft. to 312 ft.
Welded ☒ 18 " Diam. from 358 ft. to 363 ft.
Lead slip packer installed @ top of upper
Perforations: Yes ☐ No ☒ 18 " pipe

Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☒ No ☐
Manufacturer's Name UOP Johnson
Type Watermark SS Model No. _____
Diam. 18 " Slot size 150 from 312 ft. to 358 ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☒ No ☐ Size of gravel: 1/2 x 1/8
Gravel placed from See Note 3 to 383 ft.

Surface seal: Yes ☒ No ☐ To what depth? +1 to 30 ft.
Material used in seal neat cement grout
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____
Type: _____ HP _____

(8) WATER LEVELS: Land surface elevation 188 ft.
Static level 72 ft. below top of well Date 7-6-83
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____
(Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? SEI
Yield: 3200 gal./min. with 213 ft. drawdown after 24 hrs.
Note: Static level @ start of test on "4-11-83 was 80 ft.. "

Recovery data (time taken as zero when pump turned off). (water level measured from well top to water level) Time in minutes

Time	Water Level	Time	Water Level	Time	Water Level
0	293	60	168	300	145
30	183	75	165	450	138
45	170	95	162	1320	130

Date of test 4/11 to 13/83
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes ☒ No ☐
by owner

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Well log on attached sheet		

Notes:

(1) The ground level immediately around the well has been raised. The depths casing locations are referenced from original ground level which was approximately one foot lower than that existing at time of well completion.

(2) The well was drilled 38" diameter to 30 ft.; 32" diameter to 372 ft.; and 18" diameter to 383 ft.

(3) Gravel was placed up to 294 ft. between the 18" screen section casing and the 24" casing and up to 250 ft. between the 24" casing and the bore hole.

(4) Bentonite pellets were placed from 250 ft. to 247 ft.

(5) Mason Sand was placed from 247 ft. to 245 ft.

(6) Sand cement grout was placed from 245 ft. to 30 ft.

Work started 2-22, 19 83. Completed 7-6, 19 83

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Schneider Equipment, Inc.
(Person, firm, or corporation) (Type or print)

Address 21881 River Road N.E., St. Paul, O:
971

[Signed] Stephen J. Schneider
(Well Driller)

License No. 643 Date 7-13, 19 83

King County Water District #75

Des Moines Well

NE $\frac{1}{4}$, Sec. 8, T22N, R4E, WM

<u>Material</u>	<u>From</u>	<u>To</u>
Sand, brown, med. w/ some gravel	0	9
Sand, brown, coarse-fine	9	21
Gravel, 2" minus	21	23
Clay, gritty, brown & grey	23	28
Clay, grey, gritty, occasional gravel	28	31
Gravel, 4" minus	31	36
Clay, grey	36	59
Clay, grey w/ some gravel	59	61
Clay, grey	61	106
Sand, very coarse, & gravel (3" minus)	106	115
Clay, grey, silty	115	132
Sand, med-fine & gravel, 2" minus	132	139
Gravel, 2" minus	139	142
Clay, grey	142	147
Gravel, 1 $\frac{1}{2}$ " minus	147	151
Sand, grey, med-coarse, some gravel	151	156
Sand & gravel, grey, coarse & 1" minus	156	166
Gravel & sand, 1" minus & grey coarse	166	182
Gravel, 3" minus & some grey coarse sand	182	199
Clay, grey	199	201
Gravel, 6" minus & some coarse grey sand	201	210
Clay, multi-colored & multi-textured w/ gravel	210	250
Clay, grey w/ gravel	250	258
Cobbles, boulders, gravel & clay, grey	258	263
Gravel & cobbles w/ clay, grey	263	270

DEPARTMENT OF GEOLOGY
SOUTHWEST REGION

(10) WELL LOG: (cont'd)

King County Water District #75

Des Moines Well

NE $\frac{1}{4}$, Sec. 8, T22N, R4E, WM

<u>Material</u>	<u>From</u>	<u>To</u>
Clay, grey w/ gravel and occasional cobbles	270	303
Clay, blue-grey w/ gravel, soft	303	312
Gravel, 3" minus w/ some blue clay	312	314
Gravel, 3/4" minus w/ some coarse multi-colored sand	314	322
Gravel, 3/4" minus w/ some med-coarse sand	322	334
Gravel, 1 1/2" minus w/ some coarse sand	334	353
Gravel, 3/4-1" minus w/ sand, coarse	353	360
Gravel, 2" minus & fine-coarse grey sand	360	371
Clay, silty, grey	371	383

JUL 20 1960

DEPARTMENT OF GEOLOGY
NORTHWEST REGION

APPENDIX D

PREVIOUS ANALYTICAL RESULTS FOR
WIDING TRANSPORTATION, INC.

Laucks

Testing Laboratories, Inc.

940 South Harney Street, Seattle, Washington 98108 (206) 767-5060



Certificate

Chemistry, Microbiology, and Technical Services

CLIENT Widing Transportation
P. O. Box 3446
Midway, WA 98032
ATTN: Rod Widing

LABORATORY NO. 81738

DATE August 12, 1983

REPORT ON WASTE SLUDGE

SAMPLE
IDENTIFICATION

Submitted 7/27/83 and marked as shown below:

TESTS PERFORMED
AND RESULTS:

- 1) North Side of Pond
- 2) East Side of Pond (darker color)

This material was analyzed in accordance with 40 CFR 261.24 for EP Toxicity, with results as follow:

	<u>parts per million (mg/L)</u>		
	<u>1</u>	<u>2</u>	<u>MCL</u>
Arsenic	L/0.2	L/0.2	5.0
Barium	L/0.5	L/0.5	100.
Cadmium	L/0.02	L/0.02	1.0
Chromium	1.2	L/0.1	5.0
Lead	0.2	L/0.2	5.0
Mercury	L/0.005	L/0.005	0.2
Selenium	L/0.2	L/0.2	1.0
Silver	L/0.1	L/0.1	5.0

	<u>parts per million (mg/kg)</u>		
Halogenated Hydrocarbons	19.	45.	100.

	<u>% by weight, as received basis</u>		
Total PNAs*	L/1.	L/1.	1.

*In accordance with Washington State Department of Ecology, WAC 173-303, for 4,5,6 membered rings.



This report is submitted for the exclusive use of the person, partnership, or corporation to whom it is addressed. Subsequent use of the name of this company or any member of its staff in connection with the advertising or sale of any product or process will be granted only on contract. This company accepts no responsibility except for the due performance of inspection and/or analysis in good faith and according to the rules of the trade and of science.

Laucks

Testing Laboratories, Inc.

940 South Harney Street, Seattle, Washington 98108 (206)767-5060

Chemistry, Microbiology, and Technical Services



Certificate

Widing Transportation

PAGE NO. 2

LABORATORY NO. 81738

	<u>1</u>	<u>2</u>	<u>MCL</u>
pH, 1:1 deionized water slurry	2.3	4.3	**

**Must fall between 2.0 and 12.5 to pass.

Key

L/ indicates "less than"

MCL = Maximum Contamination Level allowed

Respectfully submitted,

Laucks Testing Laboratories, Inc.

Mike Nelson

MN: bg



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in confidence and is not to be
reproduced or used in any way
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Laucks Testing Laboratories, Inc.

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and/or analysis in good faith and according to the rules of the trade and of science



COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

July 5, 1985
Log #A850430-K

Widing Transportation
P.O. Box 03159
Portland, Oregon 97203

Analysis Requested: Polynuclear Aromatic Hydrocarbons

Sample ID: #1	Dried Pond Sludge (2 years old) Sampled 4/26/85 North Side	#3	Dried Pond Sludge (2 years old) Sampled 4/26/85 East Side
#2	Dried Pond Sludge (2 years old) Sampled 4/26/85 North Side	#4	Dried Pond Sludge (2 years old) Sampled 4/26/85 East Side

ANALYSIS	#1	#2	#3	#4
-----	----	----	----	----
Naphthalene	20.25	20.25	23.63	27
Phenanthrene	30.73	21.29	14.54	18.38
Anthracene	3.99	2.74	1.00	1.00
Fluoranthene	83.93	66.74	59.66	60.67
Pyrene	135.22	96.75	104.91	136.39
Chrysene	14.84	13.62	14.11	21.65
Benzo(B)fluoranthene	4.77	4.05	3.12	5.30
Benzo(K)fluoranthene	5.18	5.18	5.18	3.11
Benzo(a) Pyrene	4.56	3.99	3.42	4.56

Results given in mg/kg

THIS REPORT CONTINUES



COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

Widing Transportation
Page Two

July 5, 1985
Log #A950430-K

Analysis Requested: Halogenated Hydrocarbons

Sample ID: #1 and #2 - Dried Pond Sludge (2 years old) Sampled 4-26-85
North Side

#3 and #4 - Dried Pond Sludge (2 years old) Sampled 4-26-85
East Side

ANALYSIS	#1	#2	#3	#4
-----	-----	-----	-----	-----
1,2 Dichlorobenzene	0.47	0.68	0.73	1.5
1,4 Dichlorobenzene	< 1	1.1	1.1	< 1
1,2,3,5 Tetrachlorobenzene	18	26	7.5	3.7
1,2,3,4 Tetrachlorobenzene	1.1	2.4	2.8	1.9
Hexachlorobenzene	0.33	0.65	1.0	< 0.3
2 Chloronaphthalene	20	54.8	13.9	26.4
Hexachloroethane	< 0.3	0.35	< 0.3	< 0.3

Results given in mg/Kg

THIS REPORT CONTINUES



COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

July 5, 1985
Log #A850430-K

Widing Transportation
P. O. Box 03159
Portland, Oregon 97203

Attention: Fred Beam

Subject: E P Toxicity Test.

Sample ID: #1 and #2 - Dried Pond Sludge (2 years old) Sampled 4-26-85
North Side

#3 and #4 - Dried Pond Sludge (2 years old) Sampled 4-26-85
East Side

Method of Analysis: Federal Register/Vol.45, No.98/Monday,
May 19, 1980/ Rules and Regulations; Appendix II, Page 33127

Field Data: Samples were collected and delivered by the Client

ANALYSIS	#1	#2	#3	#4	Limit
-----	-----	-----	-----	-----	-----
Arsenic	< 0.05	< 0.05	0.30	< 0.05	5.0
Barium	< 0.05	< 0.05	< 0.05	0.06	100.0
Cadmium	< 0.05	< 0.05	< 0.05	< 0.05	1.0
Chromium	< 0.05	< 0.05	0.35	0.12	5.0
Lead	< 0.05	< 0.05	0.68	0.48	5.0
Mercury	< 0.05	< 0.05	< 0.05	< 0.05	0.2
Selenium	< 0.05	< 0.05	< 0.05	< 0.05	1.0
Silver	< 0.05	< 0.05	< 0.05	< 0.05	5.0

< denotes "less than"

Results expressed in mg/liter

Sincerely,

Susan M. Coffey
President

SMC/db



am test inc.

4900 9TH AVENUE N.W., • SEATTLE, WASHINGTON 98107-3697 • 206/783-4700

ANALYSIS REPORT

CLIENT: Widing Transportation

DATE RECEIVED: 4/8/86

REPORT TO: Rod Widing
P.O. Box 3446
Midway, WA 98032

DATE REPORTED: 5/15/86

DATE REVISED: 5/27/86

Laboratory Sample Number

104705

Client Identification

Sediment

Arsenic (ug/g)

13.2
13.7]

Cadmium (ug/g)

<0.30
<0.30]

Chromium (ug/g)

50.
53.]

Lead (ug/g)

19.
21.]

Mercury (ug/g)

0.06
0.05]

Silver (ug/g)

0.157
0.118]

Selenium (ug/g)

<0.20
<0.20]

Nickel (ug/g)

14.
8.]

Beryllium (ug/g)

<0.30
<0.30]

Zinc (ug/g)

23.6
22.9]

Antimony (ug/g)

<0.20
<0.20]

Continued



CLIENT: Widing Transportation

DATE RECEIVED: 4/8/86

REPORT TO: Rod Widing

DATE REPORTED: 5/15/86

DATE REVISED: 5/27/86

Laboratory Sample Number

104705

Client Identification

Sediment

Thallium (ug/g)	2.09 2.02]
Copper (ug/g)	30. 31.]
Total Solids (%)	88.00
Phenol (ug/g)	2.29
Cyanide (ug/g)	<0.60

*All values reported on a dry weight basis.

Continued



CLIENT: Widing Transportation

DATE RECEIVED: 4/8/86

REPORT TO: Rod Widing

DATE REPORTED: 5/15/86

DATE REVISED: 5/27/86

Laboratory Sample Number

104705

Detection

Client Identification

Sediment

Limit
(ug/g)

PESTICIDES & PCB'S

Aldrin (ug/g)	ND	0.004
Dieldrin	ND	0.006
p,p'-DDT	ND	0.016
p,p'-DDE	ND	0.006
p,p'-DDD	ND	0.012
Endosulfan I	ND	0.005
Endosulfan II	ND	0.01
Endosulfan Sulfate	ND	0.03
Endrin	ND	0.009
Endrin Aldehyde	ND	0.023
Heptachlor	ND	0.002
Heptachlorepoxyde	ND	0.004
a-BHC	ND	0.002
b-BHC	ND	0.004
g-BHC	ND	0.004
d-BHC	ND	0.004
Toxaphene	ND	0.40
Chlordane	ND	0.04
PCB (1242, 1254, 1260)	ND	0.05

ND - Nothing Detected.

Continued



CLIENT: Widing Transportation

DATE RECEIVED: 4/8/86

REPORT TO: Rod Widing

DATE REPORTED: 5/15/86

DATE REVISED: 5/27/86

Laboratory Sample Number

104705

Detection

Client Identification

Sediment

Limit

(ug/g)

BASE/NEUTRAL FRACTION GC/MS

Acenaphthene	ND	0.1
Acenaphthylene	ND	0.18
Anthracene	ND	0.1
Bis (2-chloroethoxy) methane	ND	0.27
Bis (2-chloroethyl) ether	ND	0.29
Bis (2-Chloroisopropyl) ether	ND	0.29
Bis (2-ethylhexyl) phthalate	439. 390.1	0.13
Benzidine	ND	2.2
Benzo (a) anthracene	ND	0.10
Benzo (a) pyrene	ND	0.13
Benzo (b) fluoranthene	ND	0.24
Benzo (ghi) perylene	ND	0.21
Benzo (k) fluoranthene	ND	0.13
Butyl benzylphthalate	ND	0.13
Chrysene	ND	0.13
Di-n-butylphthalate	53.6	0.10
Di-n-octylphthalate	ND	0.10
Dibenzo (ah) anthracene	ND	0.13

Continued



CLIENT: Widing Transportation

DATE RECEIVED: 4/8/86

REPORT TO: Rod Widing

DATE REPORTED: 5/15/86

DATE REVISED: 5/27/86

Laboratory Sample Number

104705

Detection

Client Identification

Sediment

Limit
(ug/g)

Diethylphthalate	ND	1.1
Dimethylphthalate	ND	0.08
Fluoranthene	ND	0.11
Fluorene	ND	0.1
Hexachlorobenzene	ND	0.1
Hexachlorobutadiene	ND	0.05
Hexachlorocyclopentadiene	ND	-
Hexachloroethane	ND	0.08
Indeno (1,2,3-cd) pyrene	ND	0.19
Isophorone	ND	0.11
N-nitrosodi-n-propylamine	ND	-
N-nitrosodimethylamine	ND	-
N-nitrosodiphenylamine	ND	0.1
Naphthalene	0.37	0.08
N-nitrosodiphenylamine	ND	0.1
Naphthalene	0.37	0.08
Nitrobenzene	ND	0.1
Phenanthrene	ND	0.27
Pyrene	ND	0.1

Continued



CLIENT: Widing Transportation

DATE RECEIVED: 4/8/86

REPORT TO: Rod Widing

DATE REPORTED: 5/15/86

DATE REVISED: 5/27/86

Laboratory Sample Number	104705	Detection
Client Identification	Sediment	Limit (ug/g)
1,2,4-Trichlorobenzene	ND	0.1
1,2-Dichlorobenzene	ND	0.1
1,2-Diphenylhydrazine	ND	-
1,3-Dichlorobenzene	ND	0.1
1,4-Dichlorobenzene	ND	0.22
2,4-Dinitrotoluene	ND	0.29
2,6-Dinitrotoluene	ND	0.1
2-Chloronaphthalene	ND	0.1
3,3'-Dichlorobenzidine	ND	0.83
4-Bromophenyl phenyl ether	ND	0.1
4-Chlorophenyl phenyl ether	ND	0.21

ND - Nothing Detected.

Continued



CLIENT: Widing Transportation

DATE RECEIVED: 4/8/86

REPORT TO: Rod Widing

DATE REPORTED: 5/15/86

DATE REVISED: 5/27/86

Laboratory Sample Number

104705

Detection

Client Identification

Sediment

Limit
(ug/g)

ACID FRACTION GC/MS

p-Chloro-m-cresol	ND	0.15
2-Chlorophenol	ND	0.17
2,4-Dichlorophenol	ND	0.14
2,4-Dimethylphenol	ND	0.14
4,6-Dinitro-o-cresol	ND	1.2
2,4-Dinitrophenol	ND	2.1
2-Nitrophenol	ND	0.18
4-Nitrophenol	ND	0.12
Pentachlorophenol	19.8	0.18
Phenol	0.70	0.08
2,4,6-Trichlorophenol	0.87	0.14

ND - Nothing Detected.

Continued

AT

CLIENT: Widing Transportation

DATE RECEIVED: 4/8/86

REPORT TO: Rod Widing

DATE REPORTED: 5/15/86

DATE REVISED: 5/27/86

Laboratory Sample Number

104705

Detection
Limit

Client Identification

Sediment

(ug/g)

PURGEABLE GC/MS

Benzene	ND	0.09
Bromodichloromethane	ND	0.04
Bromoform	ND	0.09
Bromomethane	ND	-
Carbon Tetrachloride	ND	0.06
Chlorobenzene	ND	0.12
Chloroethane	ND	-
2-Chloroethylvinyl ether	ND	-
Chloroform	0.040	0.030
Chloromethane	ND	-
Dibromochloromethane	ND	0.06
Dichlorodifluoromethane	ND	0.08
1,1-Dichloroethane	ND	0.09
1,2-Dichloroethane	ND	0.06
1,1-Dichloroethylene	ND	0.06
Trans-1,2-dichloroethylene	ND	0.03
1,2-Dichloropropane	ND	0.12
Cis-1,3-dichloropropene	ND	0.10

Continued



CLIENT: Widing Transportation

DATE RECEIVED: 4/8/86

REPORT TO: Rod Widing

DATE REPORTED: 5/15/86

DATE REVISED: 5/27/86

Laboratory Sample Number

104705

Detection
Limit
(ug/g)

Client Identification

Sediment

Trans-1,3-dichloropropene

ND

0.10

1,2-Dichloropropylene

ND

0.12

Ethylbenzene

ND

0.14

Methylene chloride

0.178

0.06

1,1,2,2-Tetrachloroethane

ND

0.14

1,1,2,2-Tetrachloroethene

0.438

0.08

Toluene

0.127

0.12

Xylenes (total)

0.259

0.14

1,1,1-Trichloroethane

0.117

0.08

1,1,2-Trichloroethane

ND

0.10

Trichloroethylene

ND

0.04

Trichlorofluoromethane

ND

0.04

Vinyl chloride

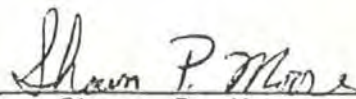
ND

0.04

ND - Nothing Detected.

] - Duplicate analysis.

REPORTED BY


Shawn P. Moore

SPM:vb



Widing Transportation, Inc.
Hauling bulk commodities
over North America

October 15, 1986

RECEIVED

Mr. Ronald C. Devitt
District Inspector, Environmental Quality
Department of Ecology
4350 - 150th Avenue NE
Redmond, WA 98502-5301

JAN 16 1986

DEPT. OF ECOLOGY

Re: Closure of Midway Site

Dear Mr. Devitt:

This letter is in follow-up to my letter of September 15, 1986, and your reply, dated September 19, 1986.

Based on the results of analyses numbers 600408 and 600409, the North Pond was further excavated down to the 30-inch level, and the excavated material transported to the Arlington Pollution Control Center for disposal. Laboratory Sample Numbers 602444, 602445 and 602446 (enclosed) all indicate levels considerably below the State minimum threshold and indicate a good declining trend. Accordingly, we will act on your verbal permission to fill the North Pond with the same high quality fill from the METRO Renton Transfer Pipe.

I have also enclosed, for your additional information, a letter from Rittenhouse-Zeman & Associates, Inc., describing their procedure for sample removal from the ~~SEA~~ North Pond. I also have on hand, which I will provide you in our final report, RZA's report on measurements (depths and locations) of samples taken from the Concrete and North Ponds. Their report also indicates measurements verifying removal of additional soil from the North Pond down to the 30-inch reading.

As soon as the North Pond is filled and the adjacent areas leveled, we will contact you regarding the water quality samples.

Sincerely,

Peter J. Pedone Sr.
Consultant to WIDING TRANSPORTATION, INC.

PJP:ns

Enclosures

cc: Mr. John Conroy
Mr. Wally Swofford

ENCLOSURE #7



am test inc.

14603 N.E. 87th • REDMOND, WASHINGTON 98053 • 206/885-1664

ANALYSIS REPORT

CLIENT: Widing Transportation

DATE RECEIVED: 9/3/86 (600408-41)
9/25/86 (602444-4)

REPORT TO: Pete Pedone
P.O. Box 3446
Midway, WA 98032

DATE REPORTED: 9/30/86

Laboratory Sample Number	600408	600409	600410	600411	Detection Limit
Client Identification	N-1 18"	N-2 24"	Conc. 1 12"	Conc. 2 18"	(µg/g)
bis-2-ethylhexylphthalate (µg/g)	143.	228.	1.2	1.8	0.13
butylbenzylphthalate (µg/g)	0.3	0.3	ND	ND	0.10
Di-n-butylphthalate (µg/g)	4.1	7.8	0.2	0.2	0.10
Di-n-octylphthalate (µg/g)	ND	ND	ND	ND	0.10
Di-ethylphthalate (µg/g)	ND	ND	ND	ND	0.10
Di-methylphthalate (µg/g)	ND	ND	ND	ND	0.08
Moisture (%)	7.3	7.5	6.3	6.0	-

Continued



CLIENT: Widing Transportation

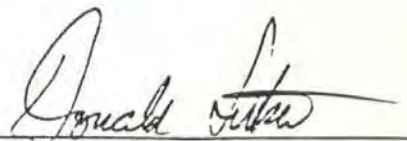
DATE RECEIVED: 9/3/86 (600408-411)
9/25/86 (602444-446)

REPORT TO: Pete Pedone

DATE REPORTED: 9/30/86

Laboratory Sample Number	602444	602445	602446	Detection Limit ($\mu\text{g/g}$)
Client Identification	N-30" 9/23/86 1555	N-36" 9/23/86 1603	N-42" 9/23/86 1610	
<i>ppm</i>				
bis-2-ethylhexylphthalate ($\mu\text{g/g}$)	5.94	0.85	0.48	0.13
butylbenzylphthalate ($\mu\text{g/g}$)	ND	ND	ND	0.10
Di-n-butylphthalate ($\mu\text{g/g}$)	ND	ND	ND	0.10
Di-n-octylphthalate ($\mu\text{g/g}$)	ND	ND	ND	0.10
Di-ethylphthalate ($\mu\text{g/g}$)	ND	ND	ND	0.10
Di-methylphthalate ($\mu\text{g/g}$)	ND	ND	ND	0.08
Moisture (%)	7.4	6.8	8.5	-

REPORTED BY


Donald Sitkei

DS:vb

TABLE 1
Sample Point Collection Data

Sample Identification	Date Sampled	Time Sampled	Depth	Elevation ²
			Below Ground Surface (inches)	
CON-1	9/3/86	1320	12	86.0
CON-2	9/3/86	1340	18	85.5
N-1	9/3/86	1230	18	79.5
N-2	9/3/86	1255	24	79.0
N-6	*1	*1	6	80.8
N-12	*1	*1	12	80.3
N-30	9/23/86	1555	30	78.8
N-36	9/23/86	1603	36	78.3
N-42	9/23/86	1610	42	77.8
N-48	9/23/86	1615	48	77.3
N-54	9/23/86	1622	54	76.8
N-60	9/23/86	1633	60	76.3

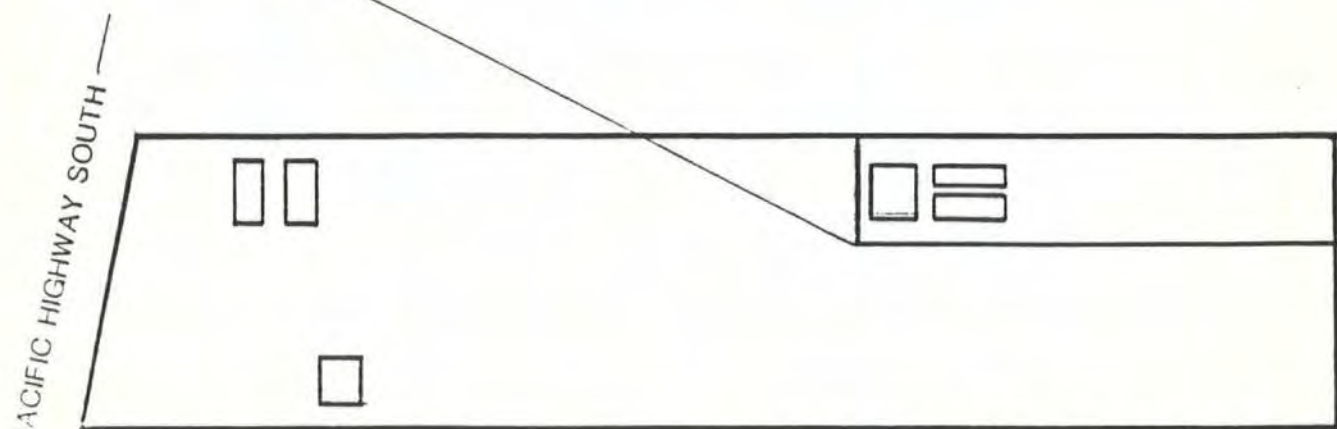
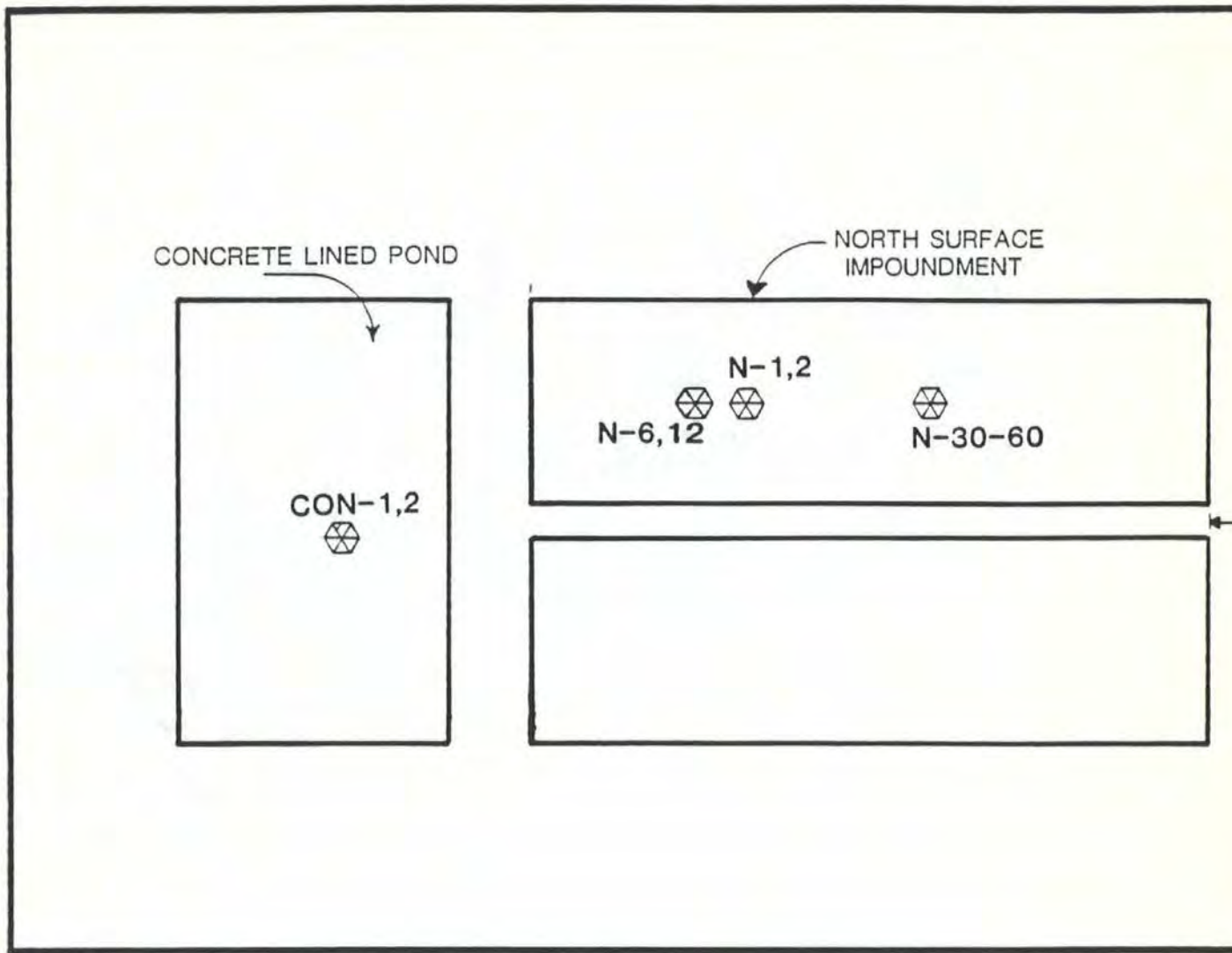
*1 - Samples collected by Widing Transportation Company

2 - Based on arbitrary datum (see text)

Con-2 - Sample obtained from concrete lined pond

N-60 - Sample obtained from north surface impoundment

For horizontal locations, refer to Figure 1



PROJECT LOCATION MAP





STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office, 3190 - 160th Ave S.E. • Bellevue, Washington 98008-5452 • (425) 649-7000

December 2, 1998

Mr. Robert Abendroth
Widing Transportation Terminals
322 West Highland Drive
Seattle, Washington 98119

Dear Mr. Abendroth

Re: Independent Remedial Action
Gresham Transfer Facility 24300 Pacific Highway South, Kent, Washington

Thank you for submitting the results of your independent remedial action(s) for review by the State of Washington Department of Ecology (Ecology). Ecology appreciates your initiative in pursuing this administrative option under the Model Toxics Control Act (MTCA).

Ecology's Toxics Cleanup Program has reviewed the following information regarding the Gresham Transfer Facility located at 24300 Pacific Highway South, Kent, Washington:

1. Limited Phase II Environmental Site Assessment Gresham Transfer Facility, September 11, 1998
2. Remedial Overexcavation Report Widing Terminals, Inc. 24300 Pacific Highway S. Kent, Washington, November 6, 1998

The report(s) listed above will be kept in the Central Files of the Northwest Regional Office (NWRO) of Ecology for review by appointment only. Appointments can be made by calling Sally Perkins at the NWRO at (425) 649-7190.

Based upon the information in the reports listed above, Ecology has determined that, at this time, the release of petroleum hydrocarbons into the soil no longer poses a threat to human health or the environment.

Therefore, Ecology is issuing this determination that no further remedial action is necessary at this site under MTCA, chapter 70.105D RCW. However, please note that because your actions were not conducted under a consent decree with Ecology, this letter is written pursuant to RCW 70.105D.030(1)(i) and does not constitute a settlement by the state under RCW 70.105D.040(4) and is not binding on Ecology.

Ecology's no further action determination is made only with respect to the release identified in the report(s) listed above. This no further action determination applies only to the area of the



Gresham Transfer Facility

December 2, 1998

Page 2

property affected by the release identified in the report at 24300 Pacific Highway South, Kent, Washington. It does not apply to any other release or potential release at the property, any other areas on the property, nor any other properties owned or operated by Widing Transportation.

Ecology will update its Leaking Underground Storage Tank database to reflect this "No Further Action" determination. Your site will not appear in future publications of the LUST database.

The state, Ecology, and its officers and employees are immune from all liability and no cause of action of any nature may arise from any act or omission in providing this determination.

If you have any questions, please contact John Lillie at 425-649-4446.

Sincerely,

A handwritten signature in cursive script, appearing to read "John T. Lillie".

John T. Lillie
Toxics Cleanup Program

JTL: jtl

RECEIVED
NOV 09 1998
DEPT. OF ECOLOGY

**REMEDIAL OVEREXCAVATION REPORT
WIDING TERMINALS, INC.
24300 PACIFIC HIGHWAY S.
KENT, WASHINGTON**

Submitted to:

Widing Terminals, Inc.
322 W. Highland Drive
Seattle, Washington 98119

Submitted by:

AGRA Earth & Environmental, Inc.
11335 N.E. 122nd Way, Suite 100
Kirkland, Washington 98034-6918

November 6, 1998

8-91M-12506-A



AGRA Earth & Environmental
ENGINEERING GLOBAL SOLUTIONS

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8-91M-12506-A

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Table 5	— TPH Interim Policy Worksheet: BT-21

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Appendix B	— Soil Analytical Test Certificates: TPH Interim Policy Methods
Appendix C	— Soil Disposal Certificates
Appendix D	— Limited Phase II Environmental Site Assessment

REMEDIAL OVEREXCAVATION REPORT
WIDING TERMINALS, INC.
24300 PACIFIC HIGHWAY S.
KENT, WASHINGTON

1.0 SUMMARY

The following report presents the results of AGRA Earth & Environmental, Inc.'s (AGRA) remedial overexcavation efforts at the above referenced subject site. The complete contents of this report should be referenced for specific details regarding this project; however, a brief summary of the significant findings is presented below.

- A 5,000 gallon leaded gasoline underground storage tank (UST), a 20,000 gallon diesel UST, and a pump island were removed from the site in the early 1990s. No records of an environmental site assessment documenting the UST removals are known to exist but reportedly O'Sullivan Construction had performed limited overexcavation of an unknown quantity of petroleum contaminated soil. This is based both on anecdotal information provided by Widing Transportation and on the limited information in Ecology's File No. 010192.
- In September 1998, AGRA performed a *Phase II Environmental Site Assessment* (Phase II ESA) in the vicinity of the former UST system. The results of this assessment indicated that petroleum hydrocarbon contamination existed in the vicinity of the former pump island complex. No apparent evidence of petroleum hydrocarbon contamination was identified in the vicinity of the former USTs.
- Based on the results of the Phase II ESA, AGRA initiated remedial overexcavation activities in the vicinity of the former pump island on September 30, 1998. Approximately 2,801 tons of petroleum impacted soil was removed from the subject site and transported to TPS Technologies, Inc. of Tacoma, Washington. Petroleum impacted soil was excavated to a depth ranging from 15 to 20 feet below the existing site grade. The approximate dimensions of the excavation were approximately 80 feet (north to south) by 55 feet (east to west).
- AGRA excavated test pits in the base of the excavation in the areas where field screening readings indicated the highest concentrations of petroleum hydrocarbons persisted. Based on the results of the four test pit excavations, residual petroleum hydrocarbon contamination exceeding the MTCA Method A cleanup criteria was found to vary from 10 to 35 feet below the existing grade at various points of the base of the excavation. AGRA collected soil samples of both the contaminated soils and clean materials at the vertical extent of contamination. A layer of residual petroleum hydrocarbon contamination was also present on the northern portion of the east sidewall. Soil samples were collected from within the layer and above the layer.

- No evidence of groundwater was observed to the maximum depth of exploration of 35 feet below the existing site grade. Based on AGRA's project experience in the vicinity of the subject site, a contiguous water bearing unit may not exist to depths of 40 to 50 feet below grade.
- Confirmatory soil samples were collected from the lateral and vertical limits of the excavation to assess the soil for residual concentrations of petroleum hydrocarbons. The samples were submitted for analysis of gasoline- and diesel-range hydrocarbons by Ecology Method WTPH-G/BTEX and WTPH-D. Soil samples of the confirmed residual petroleum hydrocarbon contamination at the base of the excavation and along the northern portion of the east sidewall were collected and submitted for analysis by the TPH Interim Policy Methods.
- The soil analytical results indicate that the north, south, west, and southeast limits of the excavation, and portions of the base, contain petroleum hydrocarbon concentrations below the MTCA Method A cleanup criteria. The analytical results also indicate that soil containing petroleum hydrocarbon concentrations exceeding the MTCA Method A cleanup criteria are present at select locations of the base of the excavation and within a 1- to 2-foot-thick layer of soil that begins at an approximate depth of 14 feet below grade within the northern portion of the east sidewall. The analytical results from the soil samples collected at the vertical limits of the four test pits excavated at the base of the excavation indicate that concentrations of petroleum hydrocarbons are below MTCA Method A cleanup criteria.
- The TPH Interim Policy analyses and calculations derived from soil samples containing residual petroleum hydrocarbon concentrations indicated that the concentrations present are within acceptable ranges of tolerance for protection of human health and groundwater.
- Based on the results of the assessment, the excavation was backfilled using imported clean fill and approximately 750 cubic yards of Class I and II soil.
- The results of this assessment indicate that a "No Further Action" status should be achievable under the current MTCA regulations and *Interim Interpretive and Policy Statement*. In order to request this status, Ecology will require that a copy of this report and the previous *Limited Phase II Environmental Site Assessment Report* be submitted to their *Voluntary Cleanup Program* (VCP). A copy of these reports must be submitted to Ecology within ninety days of completion of the remedial action (January 1999) by the current site owner regardless.

2.0 SITE BACKGROUND

2.1 Site Description and Project History

The subject site is located at 24300 Pacific Highway S., in Kent, Washington (Figure 1). The owner of the subject site is Widing Transportation, Inc. The current tenant is Gresham Transfer, Inc., a local trucking company. According to the information provided to AGRA, the subject property had included a UST system comprised of a 20,000 gallon diesel UST, a 5,000 gallon leaded gasoline UST, and one pump island. The approximate locations of the UST components are depicted on Figure 2. The UST system and an unknown quantity of petroleum impacted soil were reportedly removed by a UST removal contractor in the early 1990s. The UST removal contractor has since gone out of business. No evidence of a UST Site Check/Site Assessment performed in accordance with the requirements of Ecology's *Guidance for Site Checks and Site Assessments for Underground Storage Tanks* (February 1991) is known to exist. The site is listed as site number 010192 in the *Washington State Listing of Underground Storage Tanks*. According to the listing, the UST system received a closure status, indicating the system is no longer in use.

Due to the pending sale of the property, and the absence of records regarding the sites environmental conditions at the time of UST system closure, AGRA was subcontracted to perform an environmental assessment at the subject site. The site assessment activities were limited to the vicinity of the former UST system.

The scope of work for the site assessment involved advancing fifteen soil boring explorations at the reported former locations of the USTs and pump island (Figure 2) to document existing environmental conditions of the soil. The results of the assessment indicated the presence of petroleum impacted soil above MTCA Method A cleanup criteria in the vicinity of the former pump island beginning at depths of 5 to 7 feet below grade. Only one soil boring was able to be advanced to a depth below a depth of 9 feet due to the soil density. Therefore, the vertical extent of contamination was estimated to be between 11 to 12 feet below grade, as based on the analytical results of a soil sample collected at a depth of approximately 12 to 13 feet below grade. The two boring explorations were advanced in the former UST excavation, to depths up to 15 feet below grade, did not contain detectable concentrations of petroleum hydrocarbons. Based on the results of the assessment, a remedial action was performed at the subject site. AGRA's *Limited Phase II Environmental Site Assessment Report* dated September 11, 1998 should be consulted for more specific details regarding the assessment results.

2.2 Project Description

AGRA initiated the remedial overexcavation portion of this project on September 30, 1998. The scope of work for this remedial effort included:

- Removal of approximately 4 to 5 feet of clean overburden designated as Class I soil. Class I soils include soil that contains no detectable concentrations of petroleum

hydrocarbons and may be used for any purpose that does not threaten human health and the environment;

- Segregation, stockpiling, and analytical testing of potential Class II soil. Class II soils include soils that contain detectable concentrations of petroleum hydrocarbons that are below the MTCA Method A cleanup levels. These materials may be used as backfill on the original site, fill in commercial or industrial areas, as cover, or fill in a permitted landfill, or as a road, or parking lot construction material. If the stockpiled soil was confirmed to be Class II, it would be designated as backfill at the site;
- Excavate Class III and Class IV petroleum impacted soil from the vicinity of the former pump island. Class III and IV soils include those materials containing concentrations of petroleum hydrocarbons above the MTCA Method A cleanup criteria. Class III and IV soil requires treatment and generally, off-site disposal. The Class III and IV materials were immediately removed from the subject site and transported to TPS Technologies, Inc. of Tacoma, Washington for treatment by thermal desorption;
- Collection and analysis of soil samples collected from the lateral and vertical limits of the remedial excavation. The soil samples would be submitted to Transglobal Environmental Geosciences Northwest, Inc.'s (TEG) on-site mobile laboratory for analysis of gasoline and diesel range petroleum hydrocarbons and BTEX (benzene, toluene, ethylbenzene, and total xylenes);
- Collection of soil samples at and below a depth of approximately 15 feet below the existing site grade. These included soil samples representative of the residual concentrations of petroleum hydrocarbons above the MTCA Method A cleanup criteria and soils from the vertical limits of contamination. Both sets of samples were submitted to TEG's mobile laboratory for analysis by the Ecology WTPH series methods and to North Creek Analytical, Inc. of Bothell, Washington for analysis by Ecology's Interim TPH Policy methods. The *Interim TPH Policy* results were used to evaluate the risk associated with leaving the residual petroleum impacted soils in-place;
- Due to the absence of detectable concentrations of petroleum hydrocarbons in the first set of soil samples, a second set of soil samples representative of the residual petroleum hydrocarbons at the base of the excavation and within the layer of contamination along the east sidewall were collected on October 22, 1998. These samples were also submitted to North Creek Analytical, Inc. for analysis by Ecology's Interim TPH Policy methods.
- Backfill the excavation with the Class I and Class II soil, and imported structural fill; and

- Complete *Remedial Overexcavation Report*. Submit report, along with AGRA's *Limited Phase II Environmental Site Assessment Report*, to Ecology's *Voluntary Cleanup Program* (VCP) for request for "No Further Action".

3.0 REMEDIAL OVEREXCAVATION

3.1 Excavation Activities

On September 30, 1998, AGRA arrived at the subject site to initiate overexcavation activities in the vicinity of the former pump island (Figure 2). Based on AGRA's previous site assessment, the limits of the excavation were predicted to be approximately 80 feet (north to south) by 30 feet (east to west) and up to a depth of approximately 13 feet below site grade. All excavation and soil transportation activities were performed by Custom Backhoe and Dumptruck Service, Inc. of Bellevue, Washington, under subcontract to AGRA.

Based on the soil analytical data from AGRA's previous site assessment, the soil comprising the upper 4 to 5 feet was assessed to contain no petroleum hydrocarbon concentrations, consistent with Ecology's classification as Class I soils. However in order to confirm that the upper 4 to 5 feet of overburden was Class 1 soil, the excavated soils were field screened for the presence of petroleum hydrocarbons using an organic vapor meter (OVM). The OVM is a type of photoionization detector (PID) capable of providing semiquantitative data with respect to the presence of volatile organic compounds typically associated with petroleum hydrocarbons. Based on the results of the field screening readings, and AGRA's observations, the upper layer of Class I soil across the proposed excavation area was removed. The Class I soils comprised an approximate volume of 400 cubic yards of soil. These soils were stockpiled for use as backfill material following completion of the remedial activities.

The soils between 4 to 5 feet below grade began to exhibit some indications of petroleum hydrocarbon impact. The soil from approximately 4 to 6 feet below grade was stockpiled on Visqueen plastic and covered. Six discrete soil samples (1S-1 through 1S-6) were collected from the soil stockpile as the materials were excavated. The soil samples were submitted to TEG's on-site mobile laboratory for analysis of:

- Gasoline range petroleum hydrocarbons by Ecology Method WTPH-G;
- Diesel range petroleum hydrocarbons by Ecology Method WTPH-D; and
- BTEX compounds by EPA Method 8020.

Soil sample 1S-2 contained a diesel range petroleum hydrocarbon concentration of 350 parts per million (ppm). This concentration exceeds the MTCA Method A cleanup criteria of 200 ppm. AGRA removed approximately 50 cubic yards of soil from the segment of the stockpile that comprised the area represented by sample 1S-2. The remaining soils comprised an approximate

volume of 350 cubic yards and were classified as Class II soil based on the analytical data from the stockpile samples. These materials were used as backfill material following completion of the remedial activities.

AGRA began establishing the approximate lateral extent of petroleum impact by excavating exploratory test pits along the perimeter of the existing excavation limits. The excavation limits were increased accordingly based on the results of field screening using the OVM. Overexcavation of the petroleum impacted soils was initiated at the northern extent of contamination and proceeded to the south. Discrete soil samples were collected from the sidewalls and base of the excavation once clean limits could be established. The excavation was extended to depths ranging between 15 to 18 feet below the existing site grade. Petroleum-impacted soil was found to persist below a depth of 15 feet in some areas of the excavation. AGRA excavated four test pits in the base of the excavation in areas where the field screening PID readings indicated the highest concentrations of residual petroleum hydrocarbon contamination may be present (Figure 4). This was accomplished to establish the vertical extent of petroleum impact. Based on AGRA's observations and analytical data, petroleum contamination exceeding MTCA Method A cleanup criteria extended to depths ranging from 20 to 35 feet below the existing grade. Soil samples of the residual petroleum contamination and of the clean materials immediately below the impacted soil were collected from each of the test pits. The approximate locations of the soil samples collected from the lateral and vertical limits of the excavation are depicted on Figure 4. A detailed discussion of the analytical data is presented in Section 3.4 and is summarized in Tables 1 and 2.

No apparent evidence of groundwater was observed to the maximum depth of exploration (35 feet). This includes evidence of seeps and perched groundwater. This indicates that the petroleum release has not affected groundwater beneath the subject site.

A layer of petroleum-impacted soil was identified within the northern portion of the east sidewall of the excavation. This layer consists of a one to 2-foot thickness of glacial till that was encountered at an approximate depth of 12 to 13 feet below grade and extends to the base of the excavation. The materials above this layer of soil exhibited no apparent indications of petroleum hydrocarbon contamination. AGRA believes the origin of this layer was due to lateral spreading of the release associated with pump island rather than the USTs. This is based on the absence of detectable petroleum hydrocarbons within the fill or native materials encountered in AGRA's soil probe borings located in the former tankfield.

AGRA initiated limited overexcavation to the east following receipt of the analytical results from soil sample ESW1-14 but due to the quantity of clean overburden that would require removal, and the depth of the layer, AGRA did not continue excavation of this layer to the east. Discrete soil samples were collected from the contaminated soil layer (ESW1-14, ESW2-17, ESW4-15, and ESW-15). Discrete soil samples were also collected from soils representative of conditions above the contaminated soil layer (ESW3-14, ESW5-10, and ESW6-10). One representative soil sample

(ESW-15) collected from the contaminated soil layer was submitted for analysis of petroleum compounds by the *TPH Interim Policy* methods to ascertain whether these materials could be left in place without the need for further action.

3.2 Subsurface Conditions

The soils encountered during excavation activities consisted of approximately 5 to 6 feet of fill and weathered glacial till. These materials included medium-dense, moist, brown fine to medium sand and gravel with some silt. Very dense glacial till underlies the near-surface materials and extends to the maximum depth of exploration of approximately 35 feet below the existing site grade. The glacial till consists of damp to moist, grey, fine to medium-grained sand and gravel with some silt. Based on AGRA's observations, soil conditions were relatively homogenous. Lenses of sand, silt, and gravel were observed but were not extensive, or continuous, within the limits of excavation.

No apparent evidence of groundwater, perched or otherwise, was observed to the maximum depth of exploration of 35 feet below the existing site grade. The absence of contiguous water-bearing soils within glacial till materials is not uncommon. Typically, isolated perched zones of groundwater are more characteristic of glacial till materials. Based on AGRA's project experience in this area, a contiguous water bearing unit may be as shallow as 40 feet below the ground subsurface; however, perched groundwater may occur as shallow as 6 feet below the ground surface. Seepage was observed during periods of increased precipitation through the less dense soils comprising the upper 5 to 6 feet of material overlying the glacial till.

3.3 Soil Disposal

Based on the results of AGRA's *Limited Phase II Environmental Site Assessment* (September 1998), field screening readings, and analytical results provided by TEG's on-site mobile laboratory, all materials below approximately 6 feet below grade were identified as Class III or Class IV soils. These materials were removed to TPS Technologies, Inc. of Tacoma, Washington. TPS Technologies, Inc. is licensed for the treatment of petroleum contaminated soil by thermal desorption. A total of 2,801 tons of petroleum impacted soil was transported to TPS Technologies, Inc. between October 2 and October 9, 1998. The soil disposal certificates are presented in Appendix C.

3.4 Soil Analytical Results

Representative, discrete soil samples were collected from the lateral and vertical limits of excavation and the Class II stockpile. The sample locations were based on AGRA's observations and field screening readings. The locations and depths of the soil samples collected were approximated by taping and measuring techniques. The approximate locations of the soil samples are depicted on Figure 4. A total of 41 soil samples collected were submitted to TEG's on-site mobile laboratory for analysis of:

- Gasoline range petroleum hydrocarbons by Ecology Method WTPH-G;

- Diesel range petroleum hydrocarbons by Ecology Method WTPH-D; and
- BTEX compounds by EPA Method 8020.

In addition to the laboratory analysis noted above, seven discrete soil samples were submitted to North Creek Analytical, Inc. of Bothell, Washington for analysis of:

- Diesel range petroleum hydrocarbons by Ecology Method WTPH-D; and
- Volatile petroleum hydrocarbons (VPH), extractable petroleum hydrocarbons (EPH), BTEX, methyl tert-butyl ether (MTBE), naphthalene, and polynuclear aromatic hydrocarbons (PAHs) by the modified Ecology Interim TPH Policy Methods.

The analytical data is summarized in Tables 1 and 2. The analytical laboratory test certificates are presented in Appendices A and B.

TABLE 1 SUMMARY OF SOIL ANALYTICAL RESULTS								
Sample ID	Location	Depth (feet)	WTPH-D (ppm)	WTPH-G (ppm)	B (ppm)	T (ppm)	E (ppm)	X (ppm)
1S-1	Class II Stockpile	NA	50	<10	<0.05	<0.05	<0.05	<0.05
1S-2	Class II Stockpile	NA	350	<10	<0.05	<0.05	<0.05	<0.05
1S-3	Class II Stockpile	NA	<20	<10	<0.05	<0.05	<0.05	<0.05
1S-4	Class II Stockpile	NA	<20	<10	<0.05	<0.05	<0.05	<0.05
1S-5	Class II Stockpile	NA	<20	<10	<0.05	<0.05	<0.05	<0.05
1S-6	Class II Stockpile	NA	<20	<10	<0.05	<0.05	<0.05	<0.05
ESW1-14	East Sidewall (pre-secondary excavation)	14	4,600	820	<0.05	2.8	13	67
ESW2-17	East Sidewall (residual)	17	690	<10	<0.05	<0.05	<0.05	<0.05
ESW3-14	East Sidewall (above residual layer)	14	<20	<10	<0.05	<0.05	<0.05	<0.05
ESW4-15	East Sidewall (residual)	15	830	<10	<0.05	0.07	0.09	<0.05
ESW5-10	East Sidewall	10	<20	<10	<0.05	<0.05	<0.05	<0.05
ESW6-12	East Sidewall	12	<20	<10	<0.05	<0.05	<0.05	<0.05
ESW-15	East Sidewall (residual)	15	2,300	NT	NT	NT	NT	NT
WSW1-9	West Sidewall	9	<20	<10	<0.05	<0.05	<0.05	<0.05
WSW2-11	West Sidewall	11	<20	<10	<0.05	<0.05	<0.05	<0.05
WSW3-14	West Sidewall	14	<20	<10	<0.05	<0.05	<0.05	<0.05
WSW4-12	West Sidewall	12	<20	<10	<0.05	<0.05	<0.05	<0.05
WSW5-11	West Sidewall	11	<20	<10	<0.05	<0.05	<0.05	<0.05

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS

Sample ID	Location	Depth (feet)	WTPH-D (ppm)	WTPH-G (ppm)	B (ppm)	T (ppm)	E (ppm)	X (ppm)
WSW6-9	West Sidewall	9	<20	<10	<0.05	<0.05	<0.05	<0.05
NSW1-11	North Sidewall	11	<20	<10	<0.05	<0.05	<0.05	<0.05
NSW2-11	North Sidewall	11	<20	<10	<0.05	<0.05	<0.05	<0.05
NSW3-9	North Sidewall	9	<20	<10	<0.05	<0.05	<0.05	<0.05
SSW1-12	South Sidewall	12	<20	<10	<0.05	<0.05	<0.05	<0.05
SSW2-11	South Sidewall	11	<20	<10	<0.05	<0.05	<0.05	<0.05
SSW3-9	South Sidewall	9	<20	<10	<0.05	<0.05	<0.05	<0.05
BT1-15	Northeast Bottom	15	<20	<10	<0.05	<0.05	<0.05	<0.05
BT2-10	Northwest Bottom	10	<20	<10	<0.05	<0.05	<0.05	<0.05
BT3-17	North Center Bottom	17	<20	<10	<0.05	<0.05	<0.05	<0.05
BT4-20	West Center Bottom	20	<20	<10	<0.05	<0.05	<0.05	<0.05
BT5-18	North Center Bottom	18	<20	<10	<0.05	<0.05	<0.05	<0.05
BT6-17	East Center Bottom	17	<20	<10	<0.05	<0.05	<0.05	<0.05
BT7-15	SE Bottom	15	<20	<10	<0.05	<0.05	<0.05	<0.05
BT8-16	SW Bottom	16	310	<10	<0.05	<0.05	<0.05	<0.05
BT9-15	South Center Bottom	15	600	<10	<0.05	<0.05	<0.05	0.99
BT10-16	East Center Bottom	16	1,200	230	0.12	1.1	3.5	23
BT11-15	West Center Bottom	15	24	<10	<0.05	<0.05	<0.05	<0.05
Bottom Test 1-22	Residual, Northeast Bottom	22	2,300	910	1.0	10	14	89
Bottom Test 2-17	Residual, Northwest Bottom	17	2,200	260	0.18	1.0	3.2	21
Bottom Test 3-18	Residual, SW Bottom	18	920	85	<0.05	0.09	0.53	1.8
BT-18	Residual, Center	18	314	NT	NT	NT	NT	NT
BT-17	Residual, South Center	17	140	NT	NT	NT	NT	NT
BT-21	Residual, Northeast corner	21	234	NT	NT	NT	NT	NT
NE Test Pit-35	Vertical Extent, Northeast corner	35	<20	<10	<0.05	<0.05	<0.05	<0.05
Northwest Test Pit-21	Vertical Extent, Northwest corner	21	<20	<10	<0.05	<0.05	<0.05	<0.05
SW Test Pit-20	Vertical Extent, SW corner	20	<20	<10	<0.05	<0.05	<0.05	<0.05
SE Test Pit-16	Vertical Extent, SE corner	16	NT	NT	NT	NT	NT	NT
MTCA Method A Cleanup Levels			200	100	0.5	40	20	20

TABLE 1 SUMMARY OF SOIL ANALYTICAL RESULTS								
Sample ID	Location	Depth (feet)	WTPH-D (ppm)	WTPH-G (ppm)	B (ppm)	T (ppm)	E (ppm)	X (ppm)
Notes: NT = Not tested NA = Not applicable ppm = Parts per million concentration units Depth refers to feet below existing site grade MTCA = Model Toxics Control Act								

The analytical results above indicate that concentrations of residual petroleum hydrocarbons above the MTCA Method A cleanup levels exist along portions of the bottom, and east sidewall of the excavation. The analytical data indicates that the diesel range petroleum hydrocarbons are the primary constituent of the residual contamination. Some evidence of gasoline range petroleum hydrocarbons is evident; however the analytical data indicates that the majority of the BTEX components are no longer present. Sample Bottom Test 1-22, consisting of the residual petroleum contamination in the base of excavation, contained a benzene concentration of 1.0 ppm, slightly exceeding the MTCA Method A cleanup criteria of 0.5 ppm. This was the only sample collected that contained a benzene concentration exceeding the MTCA Method A cleanup criteria. Soil samples BT10-16, ESW1-14, Bottom Test 1-22, and Bottom Test 2-17 were the only other samples that contained a BTEX compound (xylenes only) which exceeded the respective MTCA Method A cleanup levels.

Select soil samples from the base of the excavation were submitted for analysis of petroleum compounds by the TPH Interim Policy Methods. Two sets of samples were submitted. The first set of samples was collected from the four test pits in the base of the excavation; however, these samples were collected too close to the vertical limits of the residual petroleum contamination. As a result, the laboratory analysis indicated that most of the target compounds were below the laboratory detection limits. AGRA returned to the subject site on October 22, 1998 and re-sampled the residual petroleum impacted soil from areas where OVM readings suggested the highest concentrations of residual petroleum hydrocarbons were present. These samples were screened for diesel content by Ecology Method WTPH-D prior to performing analysis by the TPH Interim Policy Methods. The analytical results from both sets of samples are presented in Table 2.

TABLE 2 SUMMARY OF INTERIM TPH POLICY SOIL ANALYTICAL RESULTS	
Sample ESW-15 Collected October 22, 1998	OVM Reading = 1,233 ppm
C5 - C6 Aliphatics	<50.0
C6 - C8 Aliphatics	<50.0
C8 - C 10 Aliphatics	<50.0
C10- C12 Aliphatics	27.0
C12 - C16 Aliphatics	233
C16 - C21 Aliphatics	405
C21 - C34 Aliphatics	81.9
Total Aliphatics	746.9
C8 - C10 Aromatics	78.6
C10 - C12 Aromatics	115
C12 - C16 Aromatics	109
C16 - C21 Aromatics	46.9
C21 - C34 Aromatics	11.7
Total Aromatics	361.2
MTBE	<1.00
Benzene	<0.100
Toluene	<0.100
Ethylbenzene	2.74
m,p-Xylene	11.3
o-Xylene	6.32
Total Aromatic + B-E-X	340.84
PAHs	
Acenaphthene (non-carcinogenic)	0.126
Fluorene (non-carcinogenic)	0.350
2-Methylnaphthalene (non-carcinogenic)	5.22
Naphthalene (non-carcinogenic)	1.87
Phenanthrene (non-carcinogenic)	0.871
Total PAHs	8.44

TABLE 2 SUMMARY OF INTERIM TPH POLICY SOIL ANALYTICAL RESULTS	
Sample BT-21 Collected October 22, 1998	
OVM Reading = 866 ppm	
C5 - C6 Aliphatics	<10.0
C6 - C8 Aliphatics	<10.0
C8 - C 10 Aliphatics	<10.0
C10- C12 Aliphatics	<5.00
C12 - C16 Aliphatics	25.8
C16 - C21 Aliphatics	54.7
C21 - C34 Aliphatics	16.9
Total Aliphatics	97.4
C8 - C10 Aromatics	11.3
C10 - C12 Aromatics	25.0
C12 - C16 Aromatics	20.2
C16 - C21 Aromatics	10.5
C21 - C34 Aromatics	<5.00
Total Aromatics	67.0
MTBE	<1.00
Benzene	<0.100
Toluene	<0.100
Ethylbenzene	1.03
m,p-Xylene	5.79
O-Xylene	3.68
Total Aromatic + B-E-X	56.5
PAHs	
Acenaphthene (non-carcinogenic)	0.014
Fluorene (non-carcinogenic)	0.0383
2-Methylnaphthalene (non-carcinogenic)	0.572
Naphthalene (non-carcinogenic)	4.13
Phenanthrene (non-carcinogenic)	0.104
Total PAHs	4.86

TABLE 2 SUMMARY OF INTERIM TPH POLICY SOIL ANALYTICAL RESULTS	
Sample BT-18 Collected October 22, 1998	
OVM Reading = 764 ppm	
C5 - C6 Aliphatics	<20.0
C6 - C8 Aliphatics	<20.0
C8 - C 10 Aliphatics	<5.00
C10- C12 Aliphatics	<5.00
C12 - C16 Aliphatics	64.7
C16 - C21 Aliphatics	138
C21 - C34 Aliphatics	31.1
Total Aliphatics	233.8
C8 - C10 Aromatics	<20.0
C10 - C12 Aromatics	42.7
C12 - C16 Aromatics	37.0
C16 - C21 Aromatics	20.4
C21 - C34 Aromatics	5.50
Total Aromatics	105.6
MTBE	<1.00
Benzene	<0.100
Toluene	0.204
Ethylbenzene	0.475
m,p-Xylene	2.10
o-Xylene	2.31
Total Aromatic + B-E-X	100.72
PAHs	
Acenaphthene (non-carcinogenic)	0.0324
Fluorene (non-carcinogenic)	0.0920
2-Methylnaphthalene (non-carcinogenic)	0.715
Naphthalene (non-carcinogenic)	0.834
Phenanthrene (non-carcinogenic)	0.201
Acenaphthylene (non-carcinogenic)	0.0121
Pyrene (non-carcinogenic)	0.0136
Total PAHs	1.90
Notes: All concentrations are presented in parts per million (ppm) concentrations	

The data for soil samples NW Test Pit-21, NE Test Pit-35, SW Test Pit-20, and SE Test Pit-16 are not presented in Table 2 due to the absence of detectable petroleum hydrocarbons and related compounds. The results from these samples and those presented in Table 2 are included in Appendix B. The analytical results from ESW-15, BT-18, and BT-21 were utilized in the evaluation of human health risk (direct contact), and the soil-to-groundwater pathway. This data is presented in Tables 3 through 5.

The results of the risk evaluation indicated that the residual petroleum concentrations are acceptable for the residential, commercial, and industrial soil scenarios. In all three cases, the individual compound and sum of the calculated hazard quotients were below Ecology's limit of 1.0. The hazard quotient sums for ESW-15, BT-18, and BT-21 were 0.30, 0.09, and 0.04 respectively for the residential soil scenario. This scenario is considered the most stringent for the protection of human health. The subject site is located in a commercial/industrial zone therefore the residual petroleum concentrations are well within acceptable limits. The level of risk associated with benzene and carcinogenic PAHs were 0.00 for all three samples due to the absence of detectable concentrations of either of these substances. Ecology's level of acceptable risk is "one in a million (0.000001)" for an individual compound and "one in a thousand (0.00001)" for the total of all compounds. The level of risk calculated for the three samples is within acceptable limits.

The soil to groundwater pathway was evaluated to determine the hypothetical concentrations of petroleum hydrocarbons that could be in a groundwater sample collected from a monitoring well based on the residual petroleum concentrations left in place. The concentrations of individual compounds and/or the sum of all the compounds must not exceed 1.0 milligrams/Liter (mg/L, = ppm) for protection of drinking water. The predicted groundwater concentrations for the sum of all compounds detected were 0.640 mg/L, 0.352 mg/L, and 0.726 mg/L for ESW-15, BT-18, and BT-21 respectively. This indicates the residual petroleum hydrocarbon concentrations are within the acceptable range for protection of drinking water.

4.0 CONCLUSIONS

Based on the analytical results and *Interim TPH Policy* calculations, AGRA concludes that the petroleum release has been sufficiently remediated. Approximately 2,801 tons of the most contaminated soil was removed to an approximate depth of 15 to 20 feet below the existing site grade in the vicinity of the former pump island. This should be sufficient for protection of human health for most future uses of the subject property. Based on AGRA's conversations with the current property owner, the subject site will be sold to Gresham Transfer, Inc., pending the results of this investigation. The proposed future use of the site will continue to be a trucking facility. Based on the extremely dense properties of the glacial till beneath the subject site, and the presence of approximately 15 feet of compacted, clean, overburden above the residual petroleum impacted soil, engineering requirements for construction of most conventional structures would not involve exposure to the residual contamination located at depths below 15 feet. AGRA also anticipates that the residual petroleum concentrations will continue to weather and biodegrade as

is evident by the absence of BTEX compounds. AGRA concludes that the continued natural attenuation of the residual petroleum hydrocarbons should further reduce the risk to human health and the environment over time.

Based on the results of *Limited Phase II Environmental Site Assessment*, the strataprobe borings within the former UST locations indicated that no detectable concentrations of petroleum hydrocarbons were present in either the fill materials or the native glacial till materials to a depth of approximately 14 to 15 feet below the existing site grade. This suggests that the previous remedial excavation may have been performed in the vicinity of the USTs.

AGRA believes the residual layer of petroleum impacted within the eastern sidewall was due to the lateral dispersion of the release associated with the former pump island. Based on the absence of this layer in the vicinity of the former USTs, AGRA concludes that the lateral extent of the layer is less than 20 feet from the existing limits of excavation. The *Interim TPH Policy* calculations indicated that the residual petroleum hydrocarbon concentrations were within acceptable ranges of tolerance. Based on the estimated limited lateral extent of contamination, the depth of the layer, and the acceptable levels of petroleum hydrocarbons remaining, AGRA concludes that additional characterization of this area is unnecessary.

The lateral and vertical limits of contamination have been adequately characterized during the remedial overexcavation activities. AGRA has established the lateral extent of contamination to the north, south, and west. The discrete soil samples collected from these sidewalls were all below the MTCA Method A cleanup criteria indicating no further excavation is necessary. The eastern extent of contamination has been estimated to be less than 20 feet from the existing excavation limits. The vertical extent of the remaining petroleum contamination has been demonstrated to be as shallow as 10 feet below grade in portions of the excavation (BT2-10), and as much as 35 feet below grade in other areas of the excavation (NE Test Pit-35). The data from 17 discrete soil samples collected at the base of the excavation indicate that select areas at the excavation bottom contain residual contamination. Nine of the 17 soil samples collected contained levels of petroleum hydrocarbon concentrations below the MTCA Method A cleanup criteria, indicating the petroleum contaminated soils have been successfully removed in these areas.

Based on the absence of indications of groundwater, perched or otherwise, to the maximum vertical extent of exploration, and petroleum contamination, it is unlikely that the residual petroleum impacted soil would adversely affect groundwater underlying the subject site. This conclusion is supported by the results of the *Interim TPH Policy* soil/pore water partitioning and groundwater mixing calculations. According to these calculations the hypothetical petroleum hydrocarbon concentrations that would be present in groundwater due to the current concentrations of petroleum hydrocarbons in the soil would be below regulatory limits. AGRA concludes that no additional exploration is required to confirm the depth of groundwater underlying the site.

A copy of this report and the *Limited Phase II Environmental Site Assessment Report* must be submitted to Ecology within 90 days of completion of the remedial action (January 1999) in order to fulfill the reporting requirements under MTCA (WAC 173-340-300). These reports may be submitted to Ecology's VCP for review of the independent cleanup activities if a "No Further Action" letter is required. AGRA does not anticipate the need for any further action or institutional controls based on the results of the remedial action.

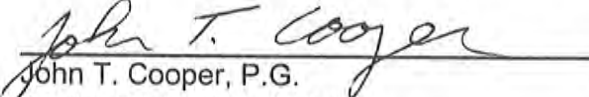
5.0 CLOSURE

This report has been prepared for the exclusive use of Widing Terminals, Inc. and their authorized agents, in accordance with generally accepted professional consulting practices. No warranty, express, or implied, is made. The findings contained herein are relevant to AGRA's field observations, information provided to AGRA by the client, and the analytical results provided at the time of the report preparation, and should not be relied upon to represent conditions at later dates. In the event that changes in the nature, usage, or configuration of the property, or nearby properties are made, the conclusions and/or recommendations contained in this report may not be valid. If additional information becomes available, it should be provided to AGRA so that the original conclusions and recommendations may be modified where necessary.

AGRA appreciates the opportunity to be of service to Widing Terminals on this project. If you have any additional questions or comments regarding this report, please do not hesitate to contact our office at your convenience.

Sincerely,


Jeffrey Kaspar
Project Environmental Geologist


John T. Cooper, P.G.
Senior Project Geologist

JK/JTC/caj

TABLE 3:
TPH INTERIM POLICY WORKSHEET: ESW-15
HUMAN HEALTH SOILS CONTACT AND SOIL-TO-GROUNDWATER PATHWAY
GRESHAM TRANSFER FACILITY
AGRA JOB NO. 8-91M-12506-A

Compound	Soil Concentration (ppm)	RfD	OCPF	Residential HQ	Risk	Commercial HQ	Risk	Industrial HQ	Risk	Molecular Weight (grams/mole)	Moles (mmol/kg)	Mole Fraction (%)	Solubility (mg/l)	Effective Solubility (mg/L)	Dilution Factor	GW Concentration (mg/L)
Aliphatics																
C5 - C6	0.0									81	0.0	0.00	28.00	0.00	20	0.00
C6 - C8	0.0									100	0.0	0.00	4.20	0.00	20	0.00
C8 - C10	0.0									130	0.0	0.00	0.33	0.00	20	0.00
C10 - C12	27.0									160	0.2	0.03	0.026	0.000813	20	0.0000407
C12 - C16	233.0									200	1.2	0.216	0.00059	0.000127	20	0.00000637
C16 - C21	405.0									270	1.5	0.278	0.0000010	0.000000278	20	0.0000000139
C21 - C34	81.9															
Total Aliphatics	746.9	0.06		0.16		0.04		0.003563								
Aromatics																
C8 - C10	78.6									120	0.7	0.121	65	7.89	20	0.395
C10 - C12	115									130	0.9	0.164	25	4.10	20	0.205
C12 - C16	109									150	0.7	0.135	5.80	0.781	20	0.0391
C16 - C21	46.9									190	0.2	0.0457	0.51	0.0233	20	0.00117
C21 - C34	11.7									240	0.0	0.00904	0.01	0.0000904	20	0.00000452
Total Aromatics	361.2	0.03														
Benzene	0		0.029		0.00		0.00		0.00	78	0.0	0.00	1780	0.00	20	0.00
Carcinogenic PAHs	0		7.3		0.00		0.00		0.00							
Ethylbenzene	2.74	0.1		0.00034		8.58E-05		7.84E-06								
Toluene	0	0.2		0.00		0.00		0.00		92	0.0	0.00	520	0.00	20	0.00
Total Xylenes	17.62	2		0.00011		2.75E-05		2.52E-06								
Total Aromatics: + B-E-X	340.84	0.03		0.14		0.035		0.0032								
Hazard Index				0.30	0.00	0.07	0.00	0.0068	0.00		5.4	1.00				0.640

Notes:

RfD = Oral Reference Doses (MTCR Cleanup and Risk Calculations, 94-145, January 1996)

OCPF = Oral Cancer Potency Factor (Interim Interpretive and Policy Statement, ECY97-600, January 1997)

HQ = Hazard Quotient. It cannot exceed 1.0 for an individual substance, fraction, or total of all substances/fractions

Hazard Index must be below 1.0 and cannot exceed 0.00001 for risk

Molecular Weight, Solubility, and Dilution Factor obtained from Interim Interpretive and Policy Statement, ECY97-600, January 1997

TABLE 4:
TPH INTERIM POLICY WORKSHEET: BT-18
HUMAN HEALTH SOILS CONTACT AND SOIL-TO-GROUNDWATER PATHWAY
GRESHAM TRANSFER FACILITY
AGRA JOB NO. 8-91M-12506-A

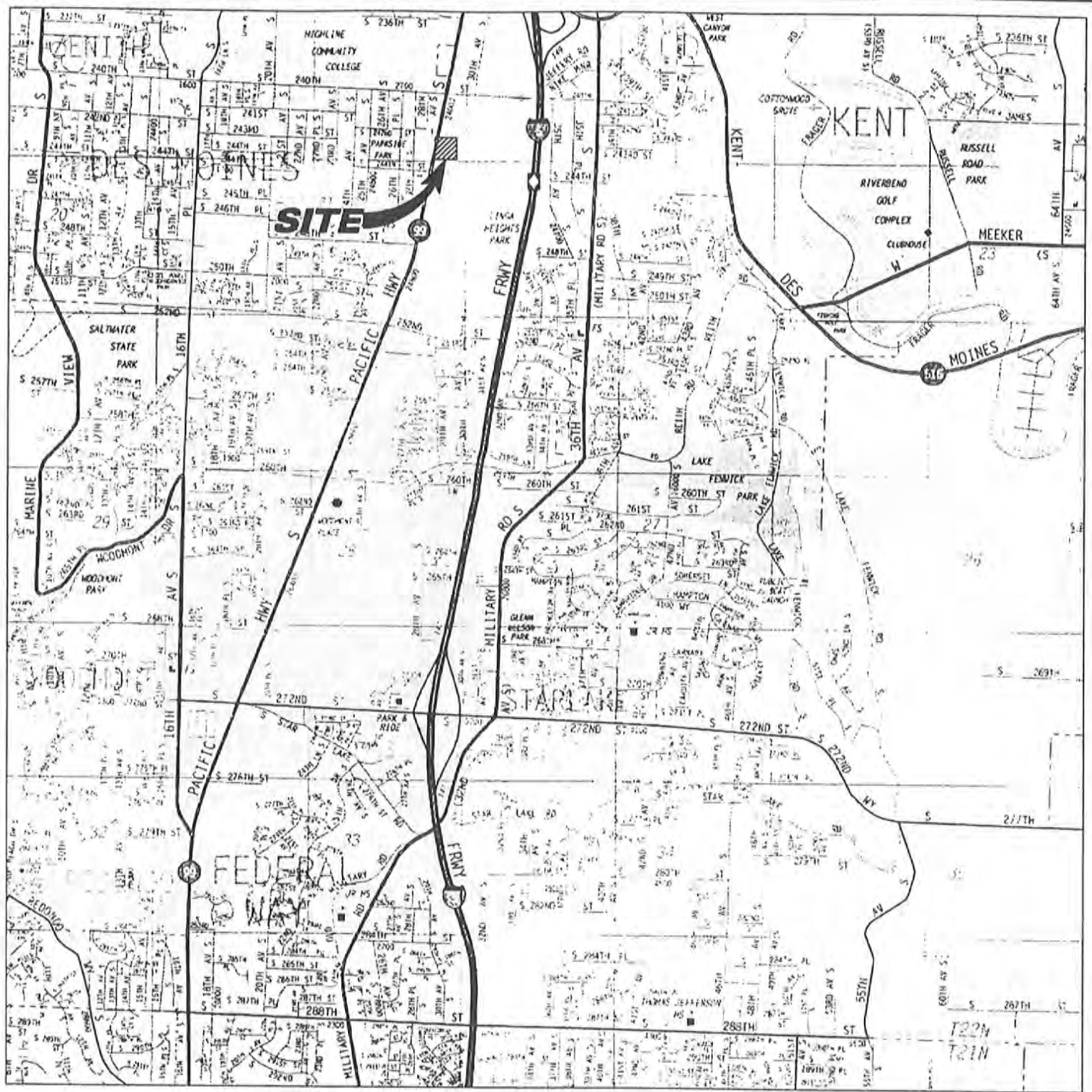
Compound	Soil Concentration (ppm)	RfD	OCPF	Residential HQ	Risk	Commercial HQ	Risk	Industrial HQ	Risk	Molecular Weight (grams/mole)	Moles (mmol/kg)	Mole Fraction (%)	Solubility (mg/l)	Effective Solubility (mg/L)	Dilution Factor	GW Concentration (mg/L)
Aliphatics																
C5 - C-6	0.0									81	0.0	0.00	28.00	0.00	20	0.00
C6 - C8	0.0									100	0.0	0.00	4.20	0.00	20	0.00
C8 - C10	0.0									130	0.0	0.00	0.33	0.00	20	0.00
C10 - C12	0.0									160	0.0	0.00	0.026	0.00	20	0.00
C12 - C16	64.7									200	0.3	0.210	0.00059	0.000124	20	0.00000619
C16 - C21	138.0									270	0.5	0.331	0.0000010	0.000000331	20	0.000000166
C21- C34	31.1			0.05		0.01		0.001115								
Total Aliphatics	233.8	0.06														
Aromatics																
C8 - C10	0									120	0.0	0.000	65	0.00	20	0.000
C10 - C12	42.7									130	0.3	0.213	25	5.32	20	0.266
C12 - C16	37									150	0.2	0.160	5.80	0.928	20	0.0464
C16 - C21	20.4									190	0.1	0.0696	0.51	0.0355	20	0.00178
C21- C34	5.5									240	0.0	0.01	0.01	0.00	20	0.00
Total Aromatics	105.6	0.03														
Benzene	0.0		0.029		0.00		0.00		0.00	78	0.0	0.00	1780	0.00	20	0.00
Carcinogenic PAHs	0.0		7.3		0.00		0.00		0.00							
Ethylbenzene	0.475	0.1		0.00006		1.49E-05		1.36E-06								
Toluene	0.204	0.2		0.00		0.00		0.00								
Total Xylenes	4.41	2		2.76E-05		6.88E-06		6.31E-07		92	0.0	0.00	520	0.75	20	0.04
Total Aromatics: + B-E-X	100.7	0.03		0.04		0.010		0.0010								
Hazard Index				0.09	0.00	0.02	0.00	0.0021	0.00		1.5	1.00				0.352

Notes:
RfD = Oral Reference Doses (MTCA Cleanup and Risk Calculations, 94-145, January 1996)
OCPF = Oral Cancer Potency Factor (Interim Interpretive and Policy Statement, ECY97-600, January 1997)
HQ = Hazard Quotient. It cannot exceed 1.0 for an individual substance, fraction, or total of all substances/fractions
Hazard Index must be below 1.0 and cannot exceed 0.00001 for risk
Molecular Weight, Solubility, and Dilution Factor obtained from Interim Interpretive and Policy Statement, ECY97-600, January 1997

TABLE 5:
TPH INTERIM POLICY WORKSHEET: BT-21
HUMAN HEALTH SOILS CONTACT AND SOIL-TO-GROUNDWATER PATHWAY
GRESHAM TRANSFER FACILITY
AGRA JOB NO. 8-91M-12506-A

Compound	Soil Concentration (ppm)	RfD	OCPF	Residential HQ	Risk	Commercial HQ	Risk	Industrial HQ	Risk	Molecular Weight (grams/mole)	Moles (mmol/kg)	Mole Fraction (%)	Solubility (mg/l)	Effective Solubility (mg/L)	Dilution Factor	GW Concentration (mg/L)
Aliphatics																
C5 - C6	0.0									81	0.0	0.00	28.00	0.00	20	0.00
C6 - C8	0.0									100	0.0	0.00	4.20	0.00	20	0.00
C8 - C10	0.0									130	0.0	0.00	0.33	0.00	20	0.00
C10 - C12	0.0									160	0.0	0.00	0.026	0.00	20	0.00
C12 - C16	25.8									200	0.1	0.160	0.00059	0.000094	20	0.0000471
C16 - C21	54.7									270	0.2	0.251	0.000010	0.000000251	20	0.000000125
C21- C34	16.9															
Total Aliphatics	97.4	0.06		0.02		0.01		0.00046								
Aromatics																
C8 - C10	11.3									120	0.1	0.117	65	7.58	20	0.379
C10 - C12	25.0									130	0.2	0.238	25	5.95	20	0.298
C12 - C16	20.2									150	0.1	0.167	5.80	0.967	20	0.0483
C16 - C21	10.5									190	0.1	0.0684	0.51	0.0349	20	0.00174
C21- C34	0.0									240	0.0	0.00	0.01	0.00	20	0.00
Total Aromatics	67.0	0.03														
Benzene	0.0		0.029		0.00		0.00		0.00	78	0.0	0.00	1780	0.00	20	0.00
Carcinogenic PAHs			7.3		0.00		0.00		0.00							
Ethylbenzene	1.03	0.1		0.00013		3.22E-05		2.95E-06								
Toluene	0.0	0.2		0.00		0.00		0.00		92	0.0	0.00	520	0.00	20	0.00
Total Xylenes	9.47	2		5.92E-05		1.48E-05		1.35E-06								
Total Aromatics: + B-E-X	56.5	0.03		0.02	0.00	0.006	0.01	0.0005	0.00							
Hazard Index				0.04	0.00	0.01	0.00	0.0010	0.00		0.8	1.00				0.726

Notes:
RfD = Oral Reference Doses (MTCR Cleanup and Risk Calculations, 94-145, January 1996)
OCPF = Oral Cancer Potency Factor (Interim Interpretive and Policy Statement, ECY97-600, January 1997)
HQ = Hazard Quotient. It cannot exceed 1.0 for an individual substance, fraction, or total of all substances/fractions
Hazard Index must be below 1.0 and cannot exceed 0.00001 for risk
Molecular Weight, Solubility, and Dilution Factor obtained from Interim Interpretive and Policy Statement, ECY97-600, January 1997



 **AGRA**
Earth & Environmental
11335 N.E. 122ND WAY, SUITE 100
KIRKLAND, WA, U.S.A. 98034-6918

LOCATION MAP

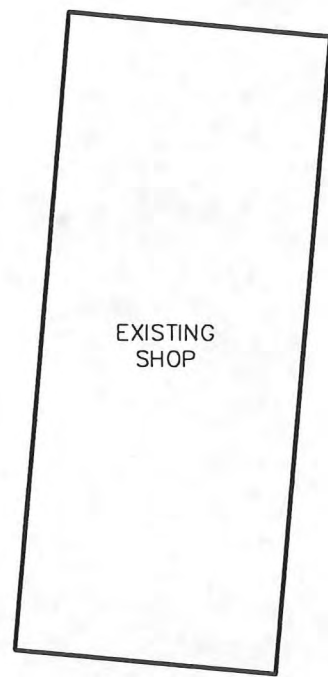
GRESHAM TRANSFER FACILITY

KENT, WASHINGTON

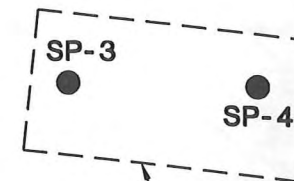
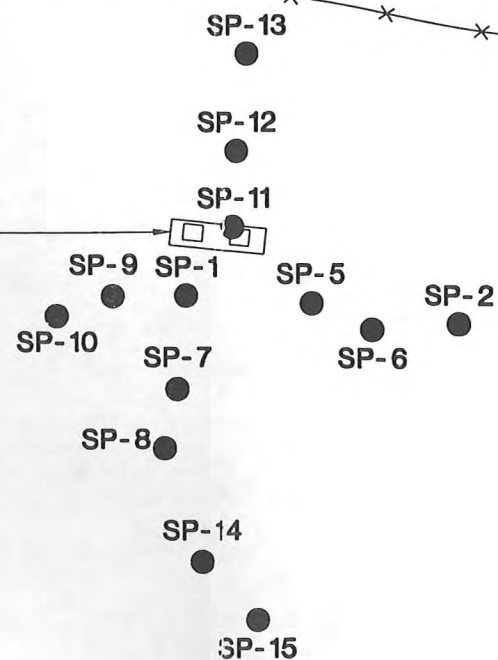
FIGURE

1

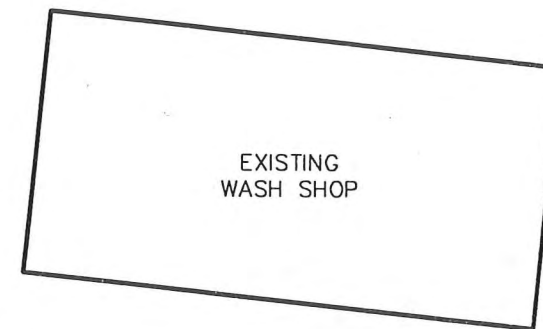
PACIFIC HIGHWAY SOUTH



FORMER PUMP ISLAND



REPORTED LOCATION OF
FORMER 20,000 GALLON
DIESEL AND 5,000 GALLON
GASOLINE USTS

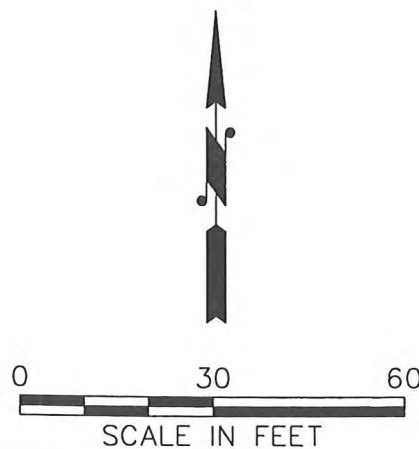


FENCE

APPROXIMATE PROPERTY LINE

LEGEND

SP-15
● SOIL PROBE BORING NUMBER
AND APPROXIMATE LOCATION



AGRA
Earth & Environmental
11335 N.E. 122ND WAY, SUITE 100
KIRKLAND, WA, U.S.A. 98034-6918

SITE & EXPLORATION PLAN
8 SEPTEMBER 1998
GRESHAM TRANSFER FACILITY
KENT, WASHINGTON

FIGURE
2

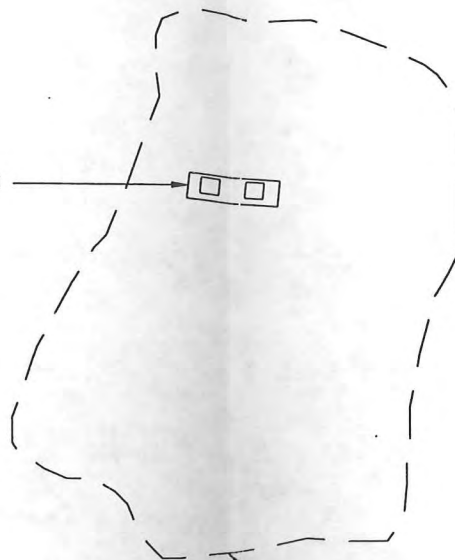
PACIFIC HIGHWAY SOUTH



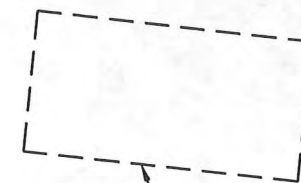
0 30 60
SCALE IN FEET



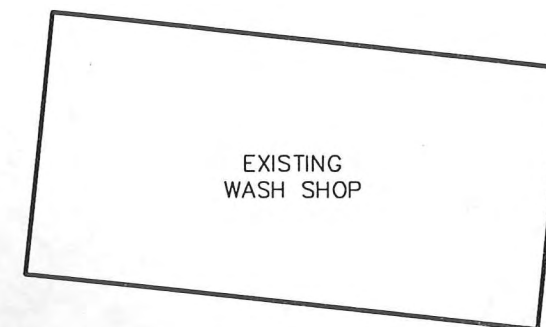
FORMER PUMP ISLAND



APPROXIMATE LIMITS OF EXCAVATION



REPORTED LOCATION OF
FORMER 20,000 GALLON
DIESEL AND 5,000 GALLON
GASOLINE USTs



EXISTING
WASH SHOP

AGRA
Earth & Environmental
11335 N.E. 122ND WAY, SUITE 100
KIRKLAND, WA, U.S.A. 98034-6918

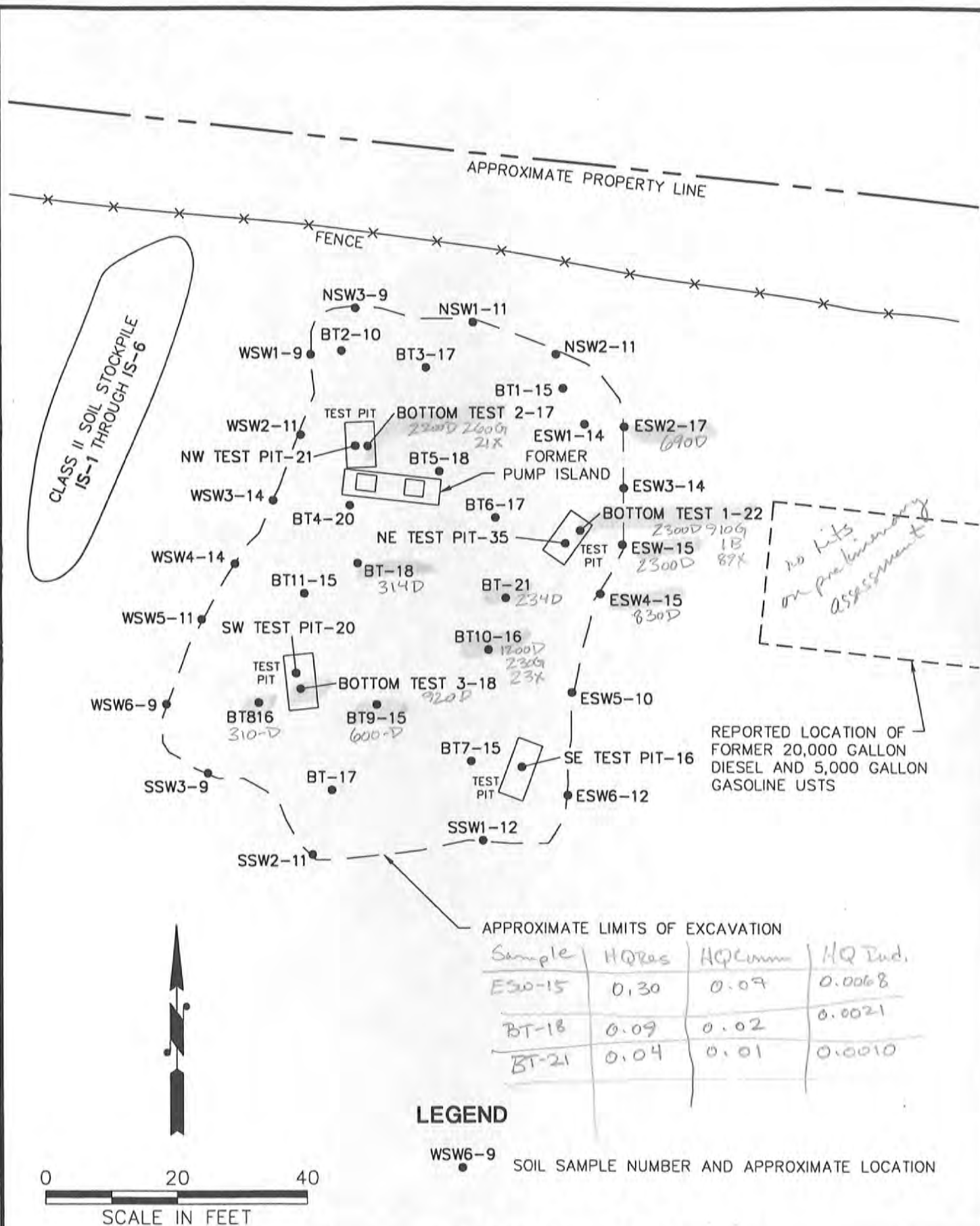
SITE & EXCAVATION PLAN

GRESHAM TRANSFER FACILITY

KENT, WASHINGTON

FIGURE

3



11 September 1998
8-91M-12506-0

Widing Transportation, Inc.
322 W. Highland Drive
Seattle, Washington 98119

Attention: Mr. Robert Abendroth

Subject: Limited Phase II Environmental Site Assessment
Gresham Transfer, Inc. Facility
24300 Pacific Highway S.
Kent, Washington

Dear Mr. Abendroth:

AGRA Earth & Environmental, Inc. (AGRA) is pleased to present the following *Limited Phase II Environmental Site Assessment Report*. This report includes AGRA's observations, boring log data, laboratory analytical results, and conclusions regarding site assessment activities performed in the reported vicinity of a former underground storage tank (UST) system at the subject site.

SITE BACKGROUND

The subject site is located at 24300 Pacific Highway S., in Kent, Washington (Figure 1). The owner of the subject site is Widing Transportation, Inc. The current tenant is Gresham Transfer, Inc., a local trucking company. According to the information provided to AGRA, the subject property had included a UST system comprised of a 20,000 gallon diesel UST, a 5,000 gallon leaded gasoline UST, and one pump island. The approximate locations of the UST components are depicted on Figure 2. The UST system and an unknown quantity of petroleum impacted soil were reportedly removed by a UST removal contractor in the early 1990s. The UST removal contractor has since gone out of business. No evidence of a UST Site Check/Assessment performed in accordance with the requirements of Ecology's *Guidance for Site Checks and Site Assessments for Underground Storage Tanks* (February 1991) is known to exist. The site is listed as site number 010192 in the *Washington State Listing of Underground Storage Tanks*. According to the listing, the UST system received a closure status, indicating the system is no longer in use.

Due to the pending sale of the property, and the absence of records regarding the closure of the UST system, AGRA was subcontracted by Widing Transportation, Inc. to perform an environmental



assessment at the subject site. The site assessment activities were limited to the vicinity of the former UST system.

PROJECT DESCRIPTION

The scope of work for the site assessment involved advancing soil boring explorations in the reported locations of the former USTs and pump island to document existing soil conditions. The location of the former pump island fixture was established using a previous site survey and taping and measuring its location from existing site improvements. The locations of the former USTs were estimated based on anecdotal information provided by Widing Transportation, Inc.

Fifteen soil borings were advanced in the vicinity of the former USTs and pump island. The borings were advanced by Transglobal Environmental Geosciences Northwest, Inc. (TEG) of Lacey, Washington using a truck-mounted *Strataprobe* system. This drilling method uses hydraulic rams and a percussion hammer to push the sampling tools into the formation, obtaining a continuous soil core. The soil sample is collected in a 2-inch diameter, 2- to 3-foot length, steel, split-spoon samplers. Soil samples were classified in the field and screened for the presence of petroleum hydrocarbons using an organic vapor meter (OVM). The OVM is a type of photoionization detector (PID) capable of providing semiquantitative data with respect to the presence of volatile organic compounds typically associated with petroleum hydrocarbons. Based on the results of the field screening readings, and AGRA's observations, select soil samples were immediately submitted to TEG's on-site, mobile laboratory for analysis of:

- Gasoline-range petroleum hydrocarbons by Ecology Method WTPH-G;
- Diesel-range petroleum hydrocarbons by Ecology Method WTPH-D;
- Volatile aromatic hydrocarbons (benzene, toluene, ethylbenzene, and xylenes (BTEX)) by EPA Method 8020; and
- Total lead by EPA 6010.

The analytical results were subsequently used to determine the location and depth of each consecutive boring for the purpose of estimating the lateral and vertical extent of petroleum contamination. The data collected during the assessment was interpreted by AGRA and presented in the contents of this report.

SITE ASSESSMENT RESULTS

On September 8, 1998, AGRA arrived at the subject site and performed the site assessment activities described in the previous section. The results indicated that petroleum contamination above the Washington State Model Toxics Control Act (MTCA) existed in the vicinity of the former pump island fixture. Soil probe borings SP-1, and SP-5 through SP-15 were advanced to estimate the lateral and vertical extent of the petroleum impacted soils in this area. Soil conditions encountered generally consisted of approximately 5 to 6 feet of materials interpreted to consist of fill sand and gravel, or weathered glacial till, that overlies very dense glacial till. The glacial till

consists of damp to moist, gray, fine to medium-grained sand with some silt and gravel. The glacial till is very compact, and as a result, the depth of the boring explorations using the *Strataprobe* system was generally limited to 7 to 8 feet below the existing site grade. This limited the ability to estimate the vertical extent of petroleum contaminated soil, where encountered. No apparent evidence of groundwater was encountered to the maximum depth of exploration of a approximately 15 feet.

The soil analytical results have been summarized in Table 1. The locations of the soil probe borings are depicted on Figure 2. The soil samples are identified according to the soil probe (SP) location followed by a suffix indicating the bottom depth of the sample (-7 = 7 feet below grade). The laboratory analytical test certificates are presented as an attachment to this report.

The analytical results of soil samples collected from the boring explorations indicated that samples collected from SP-1, SP-5, SP-7, SP-8, SP-11, SP-12, and SP-14 contain concentrations of diesel range petroleum hydrocarbons above the MTCA Method A cleanup level of 200 parts per million. The diesel range petroleum hydrocarbon concentrations ranged from 503 ppm (SP1-11) to 3,720 ppm (SP8-7).

The soil samples collected from SP-1, SP-5, SP-8, SP-12, and SP-14 contain concentrations of gasoline range petroleum hydrocarbons above the MTCA Method A cleanup level of 100 ppm. The gasoline range petroleum hydrocarbon concentrations ranged from 148 ppm (SP8-7) to 1,020 ppm (SP1-9).

Concentrations of BTEX compounds exceeding the MTCA Method A cleanup levels were detected in soil samples collected from borings SP-1 (1.5 ppm benzene, 42.1 ppm toluene, and 24.6 ppm to 87.2 ppm xylenes), SP-5 (35 ppm xylenes), and SP-14 (0.7 ppm benzene). The MTCA Method A cleanup levels for the BTEX compounds are 0.5 ppm (benzene), 40 ppm (toluene), 20 ppm (ethylbenzene), and 20 ppm (xylenes).

Total lead was analyzed in soil samples SP1-9, SP2-5, and SP14-8. Soil samples SP1-9 and SP14-8 contained the highest concentrations of gasoline range petroleum hydrocarbons and were therefore used for detection of leaded gas. Soil sample SP2-7 contained no detectable concentrations of gasoline range petroleum hydrocarbons and was therefore used to represent background conditions. No detectable concentrations of lead were present in the samples.

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS

Sample ID	Depth (feet)	OVM	WTPH-D	WTPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes
SP1-7	5-7	344	594	264	0.26	1.3	4.23	24.9
SP1-9	7-9	575	887	1,020	1.5	42.1	14.9	87.2
SP1-11	9-11	344	503	402	0.23	6.53	4.51	27.56
SP1-13	11-13	66	<20	<10	0.18	0.66	3	1.7
SP2-5	3-5	0	<20	<10	<0.05	<0.05	<0.05	<0.05
SP3-13	11-13	5	<20	<10	<0.05	<0.05	<0.05	<0.05
SP4-14	12-14	0	<20	<10	<0.05	<0.05	<0.05	<0.05
SP5-7	5-7	477	1,620	482	0.36	0.57	6.31	35
SP6-8	6-8	0	<20	<10	<0.05	<0.05	<0.05	<0.05
SP7-7	5-7	625	689	46	<0.05	<0.05	<0.05	<0.05
SP8-7	5-7	464	3,720	148	0.42	0.3	2.87	4.72
SP9-7	5-7	200	<20	<10	<0.05	<0.05	<0.05	<0.05
SP10-6	4-6	344	65	<10	<0.05	<0.05	<0.05	<0.05
SP11-7	5-7	477	1,740	<10	<0.05	<0.05	0.83	2.41
SP12-7	5-7	428	2,000	204	0.15	<0.05	2.46	4.61
SP13-6	5-6	0	<20	<10	<0.05	<0.05	<0.05	<0.05
SP14-8	7-9	627	4,600	683	0.7	1.87	6.13	17.8
SP15-8	6.5-8	0	NT	NT	NT	NT	NT	NT
MTCA Method A Cleanup Level		200	100	0.5	40	20	20	

- Notes: 1. All concentrations are presented in parts per million concentration units (ppm).
2. WTPH-D = Diesel range petroleum hydrocarbons
3. WTPH-G = Gasoline range petroleum hydrocarbons
4. OVM = Organic vapor meter
5. NT = Not tested
6. 204 Bolded text indicates exceedance of MTCA Method A cleanup criteria

CONCLUSIONS

Based on AGRA's observations and the analytical results of the soil samples collected during this assessment, soil containing concentrations of petroleum hydrocarbons above the MTCA Method A cleanup levels exists in the vicinity of the former pump island. The impacted soil was initially encountered between depths of 5 to 7 feet below the existing grade and extends to an approximate depth of 11 to 12 feet below grade. Exploration SP-1 was the only soil boring able to be advanced below a level of 9 feet in the vicinity of the former pump island; therefore estimates of the vertical extent of contamination are based on limited data. The vertical depth of the boring explorations was limited due to the density of the soil encountered which inhibited the drilling activities. Based on the soil types encountered, it appears limited overexcavation of petroleum impacted soils was performed in the vicinity of the pump island. Less dense soils consisting of what appears to be fill sand with some gravel was encountered in the borings surrounding the pump island.

Fill materials were also encountered in boring explorations SP-3 and SP-4 to 10.5 and 13 feet below the existing grade, respectively. This suggests that the former UST tankfield was in the vicinity of SP-3 and SP-4. No apparent indications of petroleum hydrocarbons were observed in soil samples collected from SP-3 or SP-4. Additionally, the analytical results of the native soil underlying the fill material in these explorations indicated no detectable concentrations of petroleum hydrocarbons. This suggests that either the petroleum impacted soil was excavated during the time of the UST removal, or the USTs had maintained their integrity.

Due to the absence of records from the former UST removal, the origin of the petroleum release encountered during this assessment is uncertain. The data does suggest that at least one release had occurred in the vicinity of the former pump island. Based on the boring explorations completed to estimate the approximate lateral extent of contamination, the remaining petroleum impacted soils appear to be trending north to south, encompassing an approximate area 80 feet in length (north to south), and 30 feet in width (east to west). This is based on the analytical results from the soil samples collected boring explorations SP-9, SP-10, SP-6, SP-13, and SP-15 (Figure 2) which contained concentrations of petroleum hydrocarbons below the MTCA Method A cleanup criteria. The vertical extent of contamination is uncertain due to the limited depth exploration able to be achieved, however, based on the analytical results of SP-1, AGRA estimates the vertical extent of contamination to be approximately 12 feet below grade. The estimated zone of contamination is, therefore, approximately 6 to 7 feet in thickness. Based on the estimated limits of petroleum impact, AGRA estimates that approximately 530 to 620 cubic yards (742 to 868 tons) of soil containing concentrations of petroleum hydrocarbons above the MTCA Method A cleanup levels exists in the vicinity of the former pump island.

In accordance with WAC 173-340-300, a copy of this report should be submitted to Ecology's Northwest Regional Office (Leaking Underground Storage Tank Department) within 90 days of completion of a remedial action.

AGRA has been pleased to be of service to Widing Transportation, Inc. on this project. If you have any additional questions or comments regarding the contents of this report, please feel free to contact our office at your earliest convenience.

Sincerely,



Jeffrey Kaspar
Project Environmental Geologist



Deborah H. Gardner, R.P.G.
Senior Project Geologist

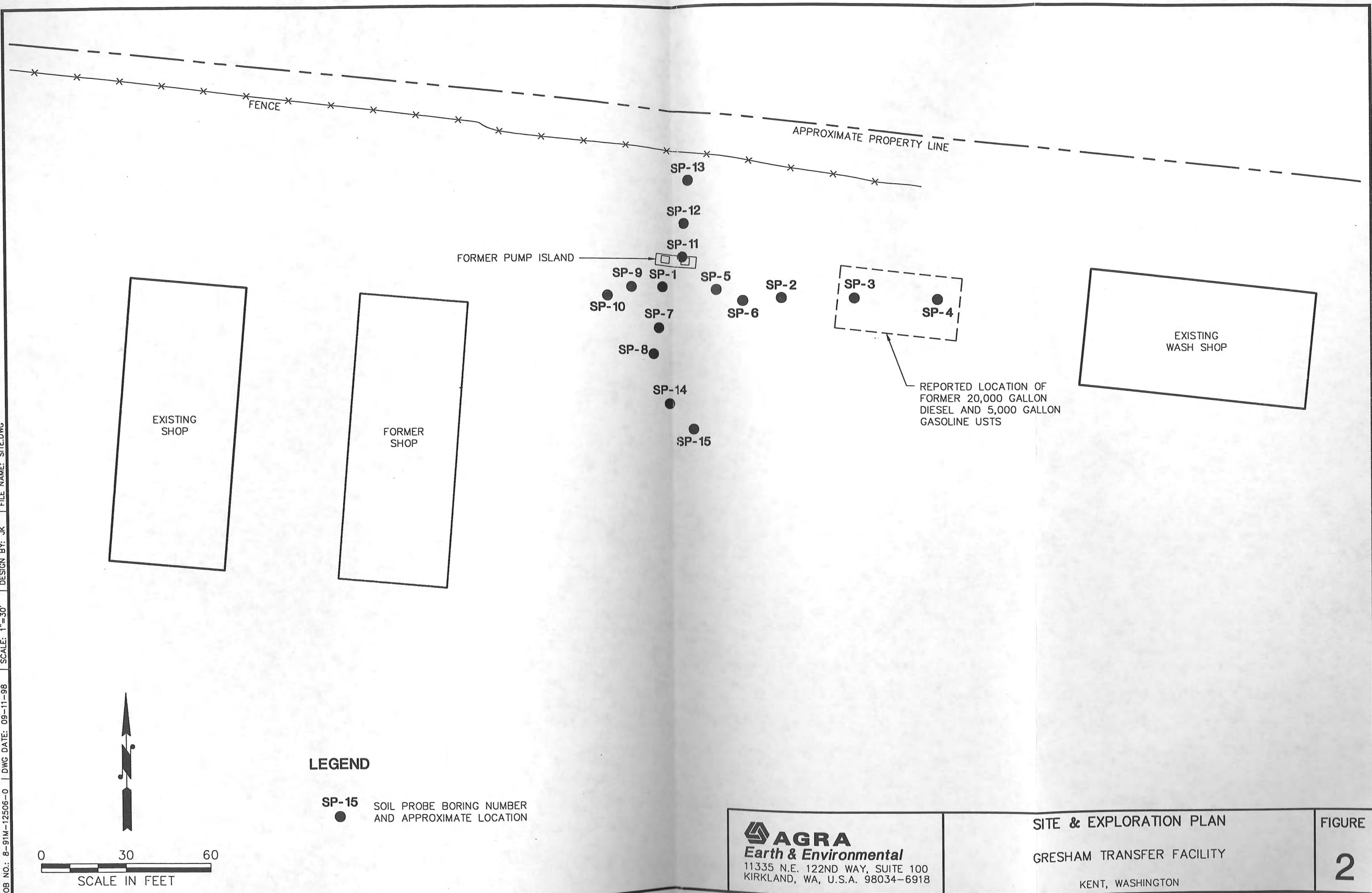
JK/DHG/caj

Attachments: Figure 1 — Location Map
Figure 2 — Site and Exploration Plan
Soil Boring Logs
Laboratory Analytical Test Certificates



1

JOB NO.: 8-91M-12506-0 | DWG DATE: 09-11-98 | SCALE: 1"=30' | DESIGN BY: JK | FILE NAME: SITE.DWG



AGRA
Earth & Environmental
11335 N.E. 122ND WAY, SUITE 100
KIRKLAND, WA, U.S.A. 98034-6918

SITE & EXPLORATION PLAN

GRESHAM TRANSFER FACILITY

KENT, WASHINGTON

FIGURE

2

SOIL BORING LOGS

PROJECT: *Gresham Transfer Facility*WELL NO. *SP-1*Elevation reference: *Unknown*
Ground surface elevation: *312 feet*Well completed: *08 September 1998*
Casing elevation: *Unknown*

AS-BUILT DESIGN

Page
1 of 1

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	QVM READING	GROUND WATER	No well installed	TESTING
0	Sand, Silt and Gravel surface over medium dense to dense, moist, brown to gray, fine to medium SAND with some gravel and silt (Fill or Weathered Glacial Till)		SP1-4		0	N/E		
5			SP1-7		344			WTPH-G/ WTPH-D/ BTEX
	Very dense, damp to moist, gray, fine SAND with some silt and gravel (Glacial Till)		SP1-9		575			WTPH-G/ WTPH-D/ BTEX/ Total Lead
10			SP1-11		344			WTPH-G/ WTPH-D/ BTEX
			SP1-13		344			WTPH-G/ WTPH-D/ BTEX
15	Boring terminated at approximately 13.0 feet due to refusal							
20								
25								
30								

LEGEND

 2-inch O.D.
split-spoon sample

N/E No groundwater encountered

 Analytical testing **AGRA** Earth & Environmental
ENGINEERING GLOBAL SOLUTIONS
11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918Drilling started: *08 September 1998*Drilling completed: *08 September 1998*Logged by: *JK*

JOB NO.: 8-91M-12508-0 | DWG DATE: 09-10-98 | FILE NAME: SP-01.DS4

PROJECT: *Gresham Transfer Facility*

WELL NO. *SP-2*

Elevation reference: <i>Unknown</i>		Well completed: <i>08 September 1998</i>					AS-BUILT DESIGN		Page 1 of 1
Ground surface elevation: <i>312 feet</i>		Casing elevation: <i>Unknown</i>					No well installed		TESTING
DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	QVM READING	GROUND WATER			
0	Sand, Silt and Gravel surface over medium dense to dense, moist, brown, fine to medium SAND with some silt and gravel		SP2-4		0	N/E			
5	Very dense, moist, gray, fine to medium SAND with some silt and gravel (Glacial Till)		SP2-5		0				WTPH-G/ WTPH-D/ BTEX/ Total Lead
	Boring terminated at approximately 6.0 feet due to refusal								
10									
15									
20									
25									
30									

LEGEND

2-inch O.D.
split-spoon sample

N/E No groundwater encountered

WTPH-G/
BTEX Analytical testing

AGRA Earth & Environmental
ENGINEERING GLOBAL SOLUTIONS
11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918

Drilling started: *08 September 1998*

Drilling completed: *08 September 1998*

Logged by: *JK*

JOB NO.: 8-91M-12506-0 | DWG DATE: 09-10-98 | FILE NAME: SP-02.DS4

PROJECT: *Gresham Transfer Facility*WELL NO. *SP-3*Elevation reference: *Unknown*Well completed: *08 September 1998*

AS-BUILT DESIGN

Page
1 of 1Ground surface elevation: *312 feet*Casing elevation: *Unknown*

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OM READING	GROUND WATER	TESTING
0	Sand, Silt and Gravel surface over medium dense, moist, brown, fine to medium SAND with some gravel (Fill)		SP1-3		0	N/E	
5			SP1-6		0		
	Very dense, moist, gray, fine to medium SAND with some silt and gravel (Glacial Till)		SP1-8		3		
10			SP1-11		0		
			SP1-13		5		
			SP1-15		0		
15	Boring terminated at approximately 15.0 feet due to refusal						
20							
25							
30							

LEGEND

 2-inch O.D.
split-spoon sample

N/E No groundwater encountered

 WTPH-G/
BTEX Analytical testing

AGRA Earth & Environmental
ENGINEERING GLOBAL SOLUTIONS
11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918

Drilling started: *08 September 1998*Drilling completed: *08 September 1998*Logged by: *JK*

JOB NO.: 8-97M-12506-0 | DWG DATE: 09-10-98 | FILE NAME: SP-03.DS4

PROJECT: *Gresham Transfer Facility*WELL NO. *SP-4*Elevation reference: *Unknown*
Ground surface elevation: *312 feet*Well completed: *08 September 1998*
Casing elevation: *Unknown*

AS-BUILT DESIGN

Page
1 of 1

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER	TESTING
0	Sand, Silt and Gravel surface over medium dense, moist, brown, fine to medium SAND with some gravel (Fill)					N/E	
			SP4-3		0		
			SP4-5		0		
5			SP4-8		0		
			SP4-11		0		
10	Very dense, moist, gray, fine SAND with some silt and gravel (Glacial Till)		SP4-14		0		
15	Boring terminated at approximately 14.0 feet due to refusal						
20							
25							
30							

WTPH-G/
WTPH-D/
BTEX

LEGEND

 2-inch O.D.
split-spoon sample

N/E No groundwater encountered

 Analytical testing **AGRA** Earth & Environmental
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Kirkland, Washington 98034-6918Drilling started: *08 September 1998*Drilling completed: *08 September 1998*Logged by: *JK*

JOB NO.: 8-91M-12506-0 | DWG DATE: 08-10-98 | FILE NAME: SP-04.DS4

PROJECT: *Gresham Transfer Facility*WELL NO. *SP-5*Elevation reference: *Unknown*
Ground surface elevation: *312 feet*Well completed: *08 September 1998*
Casing elevation: *Unknown*

AS-BUILT DESIGN

Page
1 of 1

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OM READING	GROUND WATER	No well installed	TESTING
0	Sand, Silt and Gravel surface over medium dense to dense, moist, brown, fine to medium SAND with gravel (Fill)		SP5-4		75			
5	Very dense, moist, gray, fine SAND and GRAVEL with some silt (Glacial Till)		SP5-7		477			WTPH-G/ WTPH-D/ BTEX
10	Boring terminated at approximately 7.0 feet due to refusal							
15								
20								
25								
30								

LEGEND

 2-inch O.D.
split-spoon sample

NE No groundwater encountered

 Analytical testing **AGRA** Earth & Environmental
ENGINEERING GLOBAL SOLUTIONS
11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918Drilling started: *08 September 1998*Drilling completed: *08 September 1998*Logged by: *JK*

JOB NO.: 8-91M-12506-0 | DWG DATE: 08-10-98 | FILE NAME: SP-05.DS4

PROJECT: *Gresham Transfer Facility*WELL NO. *SP-6*Elevation reference: *Unknown*Well completed: *08 September 1998*Ground surface elevation: *312 feet*Casing elevation: *Unknown*

AS-BUILT DESIGN

Page
1 of 1

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	QVM READING	GROUND WATER	No well installed	TESTING
0	Sand, Silt and Gravel surface over medium dense to dense, brown, fine to medium SAND with some gravel (Fill)					NE		
	Very dense, gray, fine SAND with some silt and gravel (Glacial Till)		SP6-4		0			
5			SP6-6		0			
			SP6-8		0			WTPH-G/ WTPH-D/ BTEX
10	Boring terminated at approximately 8.0 feet due to refusal							
15								
20								
25								
30								

LEGEND

 2-inch O.D.
split-spoon sample

NE No groundwater encountered

 Analytical testing **AGRA** Earth & Environmental
ENGINEERING GLOBAL SOLUTIONS
11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918Drilling started: *08 September 1998*Drilling completed: *08 September 1998*Logged by: *JK*

JOB NO.: 8-91M-12506-0 | DWG DATE: 09-10-98 | FILE NAME: SP-06.DS4

PROJECT: *Gresham Transfer Facility*WELL NO. *SP-7*Elevation reference: *Unknown*Well completed: *08 September 1998*

AS-BUILT DESIGN

Page
1 of 1Ground surface elevation: *312 feet*Casing elevation: *Unknown*

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER	TESTING
0	<i>Sand, Silt and Gravel surface over medium dense to dense, moist, brown, fine to medium SAND with some gravel (Fill)</i>		<i>SP7-4</i>		<i>0</i>	<i>N/E</i>	
5	<i>Very dense, moist, gray, fine to medium SAND with some silt and gravel (Glacial Till)</i>		<i>SP7-7</i>		<i>625</i>		<i>WTPH-G/ WTPH-D/ BTEX</i>
10	<i>Boring terminated at approximately 7.0 feet due to refusal</i>						
15							
20							
25							
30							

LEGEND

 2-inch O.D.
split-spoon sample*NE* No groundwater encountered Analytical testing **AGRA** Earth & Environmental
ENGINEERING GLOBAL SOLUTIONS
11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918

JOB NO.: 8-91M-12506-0 | DWG DATE: 09-10-98 | FILE NAME: SP-07.DS4

Drilling started: *08 September 1998*Drilling completed: *08 September 1998*Logged by: *JK*

PROJECT: *Gresham Transfer Facility*WELL NO. *SP-8*Elevation reference: *Unknown*Well completed: *08 September 1998*

AS-BUILT DESIGN

Page
1 of 1Ground surface elevation: *312 feet*Casing elevation: *Unknown*

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER	TESTING
0	<i>Sand, Silt and Gravel surface over medium dense, moist, brown, fine to medium SAND with some silt and gravel (Fill?)</i>		<i>SP8-4</i>		<i>0</i>	<i>N/E</i>	
5	<i>Very dense, moist, gray, medium SAND with some silt and gravel (Glacial Till)</i>		<i>SP8-7</i>		<i>464</i>		<i>WTPH-G/ WTPH-D/ BTEX</i>
10	<i>Boring terminated at approximately 7.0 feet due to refusal</i>						
15							
20							
25							
30							

LEGEND

 2-inch O.D.
split-spoon sample*NE* No groundwater encountered Analytical testing **AGRA** Earth & Environmental
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11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918

JOB NO.: 8-91M-12506-0 | DWG DATE: 09-11-98 | FILE NAME: SP-08.DS4

Drilling started: *08 September 1998*Drilling completed: *08 September 1998*Logged by: *JK*

PROJECT: *Gresham Transfer Facility*

WELL NO. *SP-9*

Elevation reference: <i>Unknown</i>		Well completed: <i>08 September 1998</i>		AS-BUILT DESIGN		Page 1 of 1
Ground surface elevation: <i>312 feet</i>		Casing elevation: <i>Unknown</i>		No well installed		TESTING
DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER
0	Sand, Silt and Gravel surface over dense, moist, brown, fine to medium SAND with gravel (Fill?)		SP9-4		0	N/E
5	Very dense, moist, gray, fine to medium SAND with some silt and gravel (Glacial Till)		SP9-7		200	
Boring terminated at approximately 7.0 feet due to refusal						
10						
15						
20						
25						
30						

LEGEND

2-inch O.D.
split-spoon sample

WTPH-G/
BTEX Analytical testing

NE No groundwater encountered

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JOB NO.: 8-91M-12506-0 | DWG DATE: 09-11-98 | FILE NAME: SP-09.DS4

Drilling started: *08 September 1998*

Drilling completed: *08 September 1998*

Logged by: *JK*

PROJECT: *Gresham Transfer Facility*WELL NO. *SP-10*Elevation reference: *Unknown*Well completed: *08 September 1998*

AS-BUILT DESIGN

Page
1 of 1Ground surface elevation: *312 feet*Casing elevation: *Unknown*

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER	No well installed	TESTING
0	Sand, Silt and Gravel surface over dense, moist, brown, fine to medium SAND with some silt and gravel (Weathered Glacial Till)		SP10-4		0	N/E		
5	Very dense, moist, gray, medium SAND with some silt and gravel (Glacial Till)		SP10-6		344			WTPH-G/ WTPH-CV BTEX
	Boring terminated at approximately 6.0 feet due to refusal							
10								
15								
20								
25								
30								

LEGEND

 2-inch O.D.
split-spoon sample

N/E No groundwater encountered

 Analytical testing

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11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918

Drilling started: *08 September 1998*Drilling completed: *08 September 1998*Logged by: *JK*

JOB NO.: 8-91M-12506-0 | DWG DATE: 08-11-98 | FILE NAME: SP-10.DS4

PROJECT: *Gresham Transfer Facility*

WELL NO. SP-11

Elevation reference: <i>Unknown</i>		Well completed: <i>08 September 1998</i>						AS-BUILT DESIGN		Page 1 of 1	
Ground surface elevation: <i>312 feet</i>		Casing elevation: <i>Unknown</i>									
DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER	<i>No well installed</i>		TESTING		
0	<i>Sand, Silt and Gravel surface over dense, moist, brown, medium SAND with some silt and gravel (Weathered Glacial Till)</i>		SP11- 4		0	N/E					
5	<i>Very dense, moist, gray, fine to medium SAND with some silt and gravel (Glacial Till)</i>		SP11- 7		477				WTPH-G/ WTPH-D/ BTEX		
10	<i>Boring terminated at approximately 7.0 feet due to refusal</i>										
15											
20											
25											
30											

JOB NO.: 8-91M-12506-0 | DWG DATE: 09-11-98 | FILE NAME: SP-11.DS4

LEGEND



2-inch O.D.
split-spoon sample

N/E	No groundwater encountered
-----	----------------------------



ENGINEERING GLOBAL SOLUTIONS

11335 NE 122nd Way, Suite 100

Kirkland, Washington 98034-6918

WTPH-GV
ATEX

Analytical testing

PROJECT: *Gresham Transfer Facility*

WELL NO. *SP-14*

Elevation reference: <i>Unknown</i>		Well completed: <i>08 September 1998</i>					AS-BUILT DESIGN		Page 1 of 1	
Ground surface elevation: <i>312 feet</i>		Casing elevation: <i>Unknown</i>								
DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER	<i>No well installed</i>		TESTING	
0	<i>Sand, Silt and Gravel surface over very dense, moist, brown to gray, fine SAND with some silt and gravel (Glacial Till)</i>					<i>N/E</i>				
			<i>SP14-4</i>		<i>0</i>					
5			<i>SP14-7</i>		<i>68</i>					
	<i>Sand lens</i>									
	<i>Sand lens</i>									
			<i>SP14-8</i>		<i>627</i>				WTPH-G/ WTPH-D/ BTEX/ Total Lead	
10	<i>Boring terminated at approximately 9.0 feet due to refusal</i>									
15										
20										
25										
30										

LEGEND

 2-inch O.D.
split-spoon sample

N/E No groundwater encountered

WTPH-G/
BTEX

 Analytical testing

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Kirkland, Washington 98034-6918

Drilling started: *08 September 1998*

Drilling completed: *08 September 1998*

Logged by: *JK*

JOB NO.: 8-91M-12506-0 | DWG DATE: 09-11-98 | FILE NAME: SP-14.DS4

PROJECT: *Gresham Transfer Facility*

WELL NO. SP-15

Elevation reference: <i>Unknown</i>		Well completed: <i>08 September 1998</i>		AS-BUILT DESIGN		Page 1 of 1	
Ground surface elevation: <i>312 feet</i>		Casing elevation: <i>Unknown</i>					
DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER	TESTING
0	<i>Sand, Silt and Gravel surface over very dense, moist, brown to gray, fine SAND with some silt and gravel (Glacial Till)</i>		<i>SP15-4</i>		<i>0</i>	<i>N/E</i>	
5			<i>SP15-6.5</i>		<i>0</i>		
			<i>SP15-8</i>		<i>0</i>		
10	<i>Boring terminated at approximately 8.0 feet due to refusal</i>						
15							
20							
25							
30							


2-inch O.D.
split-spoon sample

N/E No groundwater encountered


AGRA Earth & Environmental
ENGINEERING GLOBAL SOLUTIONS
11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918

Init: <u>754</u>	Date: <u>3/17/87</u>	Region:
EPA: _____	Date: _____	Copy: _____
Input: _____	Update: _____	Ack: _____
Approved - Close ID# <u>754</u> 1986 A/R Received		
MAR 3 1987		
DEPARTMENT USE ONLY		

**NOTIFICATION C.
DANGEROUS WASTE
ACTIVITIES**

(send to) Attn: DW Notifications
Washington State Department of Ecology
M/S PV-11 Olympia, WA. 98504-8711
(206) 459-6305/6306

DEPARTMENT USE ONLY

Type or Print in Ink—Form designed for use on Elite (12 pitch type)

mm dd yy

1. ☐ A. FIRST NOTIFICATION
(no previous application has been made for this site)
- ☐ B. REVISED NOTIFICATION date revisions effective: _____/_____/_____
(Enter existing site I.D. # in Part 1F. List sections you revised: _____)
- ☐ C. WITHDRAW SITE I.D.#
(Complete Sections 1F, 2A, 3, 5, 8 & 15. Enter existing I.D. # in Part 1F.)
- ☐ D. REACTIVATE SITE I.D.# (Complete all sections of the form.
Enter previously assigned I.D. # in Part 1F.)
- ☒ E. CANCEL SITE I.D.# (Site closed—no longer own or conduct
business at this site. Complete Sections 1F, 2A, 3, 5, 8 & 15. Enter existing I.D. # in 1F.)
- ☐ F. EXISTING I.D.# (Complete for Items 1B, C, D, & E only) WA 0067156489

2.A. WASHINGTON STATE DEPARTMENT OF
REVENUE REGISTRATION (TAX) NUMBER

2.B. SIC CODE(S)

PRIMARY

SECONDARY

OTHER

409-019-071

3. NAME OF COMPANY

WIDING TRANSPORTATION INC.

4. MAILING ADDRESS

STREET, P.O. BOX, OR RURAL ROUTE & BOX NO.

24300 PACIFIC HWY SO

CITY OR TOWN

STATE

ZIP CODE

MIDWAYWA 98302

5. LOCATION OF WASTE ACTIVITIES (Installation)

DESCRIPTION OF PHYSICAL LOCATION (Follow Instructions Carefully)

24300 PACIFIC HWYSO

CITY OR TOWN

STATE

ZIP CODE

MIDWAYWA 983027. TYPES OF REGULATED DANGEROUS WASTE ACTIVITIES YOUR BUSINESS IS CONDUCTING (Read & follow instructions
for this section carefully—Enter an "X" in any sections of 7A, 7B, or 7C below that may apply).

7A. HAZARDOUS WASTE ACTIVITIES (See instructions for definitions of these activities).

- ☐ 1. GENERATOR
- ☐ 2. TRANSPORTER 2a. ☐ Transport Wastes Commercially (for hire).
2b. Modes of Transport: (1) ☐ Highway (2) ☐ Air (3) ☐ Rail (4) ☐ Water (5) ☐ Other
- ☐ 3. MANAGEMENT FACILITY (TSD) 3a. ☐ Facility accepts wastes from OFF-SITE Generators
3b. Processes conducted or available at this facility:
(1) ☐ Treatment (2) ☐ Storage (>180 days) (3) ☐ Disposal
(4) ☐ Other (specify in comments).

☐ 4. UNDERGROUND INJECTION OF WASTE(S).☐ 5. MARKET OR BURN DANGEROUS WASTE FUELS—5a. ☐ Generator Marketing to Burner, 5b. ☐ Other Marketer
5c. ☐ Burner. (COMPLETE 7C—TYPE OF COMBUSTION DEVICE)

7B. USED-OIL FUEL ACTIVITIES.

- ☐ 1. OFF-SPECIFICATION USED-OIL FUELS—1a. ☐ Generator Marketing to Burner 1b. ☐ Other Marketer 1c. ☐ Burner (Complete 7C)
- ☐ 2. SPECIFICATION USED-OIL FUEL MARKETER (or ON-SITE BURNER) WHO FIRST CLAIMS THE OIL MEETS THE SPECIFICATION.

7C. DANGEROUS WASTE OR OFF-SPECIFICATION USED-OIL FUEL BURNING: TYPE OF COMBUSTION DEVICE.

(see instructions for definitions of combustion devices) 1 ☐ Utility Boiler 2. ☐ Industrial Boiler 3. ☐ Industrial Furnace.

7D. NEW REGULATORY REQUIREMENTS:

indicate in the space provided, the activity you are notifying for, (if it is not listed above), for which you need an I.D. #.

(continue in Comments).

8. CONTACT PERSON

NAME (last)

(first)

PEDONE PETER

TITLE

PHONE NO. (area code & number)

DIR REG COMPLIANCE206-581-4623

9A. OWNERSHIP (Legal Owner(s) of this Company)

10A TYPE OF
OWNERSHIP
(Enter letter code in 2.)
SEE INSTRUCTIONS10B. IS SITE
LOCATED ON
INDIAN TRUST
LANDS?
Y=Yes N=No

9B. OWNERSHIP (Legal Owner(s) of site (Property))

☒☐

11. WASTE IDENTIFICATION (Copy this page if you have more than 10 waste streams—other information (sections 12-15) not needed on continuation sheets)

A. LINE NUMBER	B. Description of Waste(s)	C. Dangerous Waste Number (refer to WAC 173-303)	D. Estimated or Actual Annual Waste Quantity	E. WEIGHT CODE
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

12. ESTIMATED MAXIMUM QUANTITY of all wastes, listed above, to be produced in any given month or per processing batch. In 12C. indicate maximum to be accumulated on-site prior to shipment.

12A. ☐ (Batch Frequency _____)

QUANTITY

WEIGHT

CODE

12B. ☐ PER MONTH

QUANTITY

WEIGHT

CODE

12C. Amount to be Accumulated on-site prior to shipment

QUANTITY

WEIGHT

CODE

13. COMMENTS (Enter Information by Section & Line Number—See Instructions)

14. FORMS AND INFORMATION REQUEST (Check the box(es) of those items desired and indicate how many)

A. ☐ NOTIFICATION FORM

B. ☐ PART A PERMIT FORM FOR TSD FACILITIES

C. ☐ BIOLOGICAL TEST PROCED.

D. ☐ GENERATOR ANNUAL REPORT FORM

E. ☐ CHEMICAL TEST PROCED.

F. ☐ TSD FACILITY ANNUAL REPORT/UNMANIFESTED WASTE REPORT

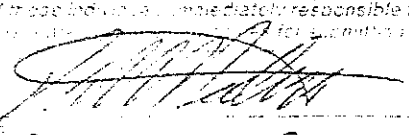
G. ☐ DANGEROUS WASTE LEGISLATION (RCW 70.105) AND REGULATIONS (WAC 173-303)

H. ☐ DANGEROUS WASTE FEES LEGISLATION (RCW 70.105A) & REGULATION (WAC 173-305)

I. ☐ OTHER (specify) _____

15. CERTIFICATION (MUST BE SIGNED IN INK TO BE PROCESSED)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of the person(s) immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete, and that I am not aware of any information that would cause me to believe that the information is false, incomplete, or inaccurate.


PETER J. PEDONE

DIRECTOR, REGULATORY COMPLIANCE

2/27/87

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT

Summary Memorandum

ID: WA D067156489
County: King
Priority Assessment: Low
Backlog Red. Cat.:
Date/Revised: 05/02/85

Name and Location:

Widing Transportation
24300 Pacific Highway South
Kent, Washington 98031

Contact:
Telephone: (206) 8245890
Site Status: ☒ Active ☐ Inactive ☐ Unknown

Site Description/TSD Activities:

Site is a carrier of bulk commodities. A major portion of the business is the transportation of numerous liquid chemicals in tank trucks. Current RCRA/WAC status is a transporter of hazardous waste. The site consists of business offices, tank truck storage & maintenance, and a truck wash facility, which includes numerous unlined aeration lagoons.

Waste Types/Quantities/Characteristics:

The liquids/chemicals which are hauled are unknown but site has the capacity to haul an assortment of chemicals w/hazardous characteristics. These chemicals can pose a threat when trucks are washed and these contaminants are washed into unlined aeration lagoons, exposing them to air, soil & possibly groundwater. Washwater volumes are not known.

Physical/Social Environment:

Site is located in a mixed residential/business and commercial area. Within one mile of the site the resident population is 10,500 and the transient population is 2500. Also located within one mile are 6 parks, 6 schools and colleges, a library and a fire station.

Pollutant Mobilization/Pathways/Risk:

Primary pathways include air (numerous reported causes of skin irritation/burning) and potentially soil and groundwater.

Priority Assessment/Backlog Reduction Category:

Low: Pending outcome of expected closure of site within the next few months.

Followup Recommendations:

Site is closing current facility and moving to a new site. Closure of the current site will be under City of Kent and WDOE (NW) approval. Soil samples will be taken to verify proper closure of lagoons.

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT Part 1 - Site Information and Assessment						I. IDENTIFICATION	
						01 State	02 Site Number
						WA	D067136489
II. SITE NAME AND LOCATION							
01 Site Name (legal, common, or descriptive name of site) Widing Transportation Inc.				02 Street, Route No., or Specific Location Identifier 24300 Pacific Highway South			
03 City Kent				04 State WA	05 Zip Code 98031	06 County King	07 County Code 033
09 Coordinates Latitude: 472305.0 Longitude: 1221744.0				Section/Township/Range NE1/4, Sec. 21, T22N, R4E, W.M.			
10 Directions to Site (starting from nearest public road)							
III. RESPONSIBLE PARTIES							
01 Owner (if known) Widing Transportation, Inc.				02 Street (business, mailing, residential) 24300 Pacific Highway South			
03 City Kent				04 State WA	05 Zip Code 98031	06 Telephone Number (206) 8245890	
07 Operator (if known and different from owner) Same				08 Street (business, mailing, residential)			
09 City				10 State	11 Zip Code	12 Telephone Number ()	
13 Type of Ownership (check one) ☒ A. Private ☐ B. Federal ☐ C. State ☐ D. County ☐ E. Municipal ☐ F. Other: ☐ G. Unknown							
14 Owner/Operator Notification on File (check all that apply) ☒ A. RCRA 3001, Date Rec'd: 08/15/80 ☐ B. Uncontrolled Waste Site (CERCLA 103c), Date Rec'd: / / ☐ C. None							
IV. CHARACTERIZATION OF POTENTIAL HAZARD							
01 On Site Inspection By (check all that apply): ☒ Yes, Date: 11 29 79 ☒ A. EPA ☐ B. EPA Contractor ☒ C. State ☐ D. Other Contractor ☐ No ☐ E. Local Health Official ☒ F. Other: PSAPCA Contractors Name(s):							
02 Site Status (check one) ☒ A. Active ☐ B. Inactive ☐ C. Unknown				03 Years of Operation beginning year ending year Unk Pres ☐ Unknown			
04 Description of Substances Possibly Present, Known, or Alleged Widing is a transporter of various liquid chemicals. Chemicals are transported in tank trucks. Hazardous characteristics of chemicals hauled could include ignitability, toxicity, and/or reactivity. Site includes a business office, tank truck storage and maintenance, and a truck wash facility which includes numerous aeration lagoons.							
05 Description of Potential Hazard to Environment and/or Population The tank truck wash facility (if still in existence) would be the source of any potential threat to the environment and/or population. The wash facility includes several aeration lagoons, from which the odor has been the source of several citizen complaints. The site was fined \$250.00 (max. penalty) in 1979 by PSAPCA for emissions from the lagoons.							
V. PRIORITY ASSESSMENT							
01 Priority for Inspection (check one; if high or medium is checked, complete Part 2 and Part 3) ☐ A. High (inspection required promptly) ☐ B. Medium (inspection required) ☒ C. Low (inspect on time available basis) ☐ D. None (no further action needed complete current disposition form)							
VI. INFORMATION AVAILABLE FROM							
01 Contact Mike Gallagher			02 Of (agency/organization) WDOE			03 Telephone Number (206) 4596516	
04 Person Responsible for Assessment Marianne Diczak		05 Agency SAIC		06 Organization SAIC		07 Telephone Number (206) 7477899	08 Date 09/03/85

**POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
Part 2 - Waste Information**

I. IDENTIFICATION

01 State	02 Site Number
WA	D067156489

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 Physical States (check all that apply) ☐ A. Solid ☐ E. Slurry ☐ B. Powder, Fines ☒ F. Liquid ☐ C. Sludge ☐ G. Gas ☐ D. Other:	02 Waste Quantity at Site (measures of waste quantities must be independent) Tons: UNK Cubic Yards: UNK No. of Drums: UNK	03 Waste Characteristics (check all that apply) ☒ A. Toxic ☐ E. Soluble ☐ I. Highly Volatile ☒ B. Corrosive ☐ F. Infectious ☐ J. Explosive ☐ C. Radioactive ☐ G. Flammable ☒ K. Reactive ☒ D. Persistent ☒ H. Ignitable ☐ L. Incompatible ☐ M. Not Applicable
--	--	---

III. WASTE TYPE

Category	Substance Name	01 Gross Amount	02 Unit of Measure	03 Comments
SLU	Sludge			
OLW	Oily Waste			
SOL	Solvents			
PSD	Pesticides			
OCC	Other Organic Chemicals			
IOC	Inorganic Chemicals			
ACD	Acids			
BAS	Bases			
MES	Heavy Metals	UNK	N/A	Measured in Truck Wash

IV. HAZARDOUS SUBSTANCES (see Appendix for most frequently cited CAS numbers)

01 Cat.	02 Substance Name	03 CAS Number	04 Storage/Disposal Method	05 Concentration	06 Measure of Concentration
	TANK TRUCK WASH	WATER	ANALYSIS		
MES	Arsenic*	7440382	Aeration lagoon	12	ug/l
MES	Cadmium*	7440439	Aeration lagoon	11	ug/l
MES	Chromium*	7440473	Aeration lagoon	150	ug/l
MES	Lead*	7439921	Aeration lagoon	10	ug/l
MES	Mercury*	7439976	Aeration lagoon	10	ug/l

V. FEEDSTOCKS (see Appendix for CAS numbers)

Category	01 Feedstock Name	02 CAS Number	Category	01 Feedstock Name	02 CAS Number
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (cite specific references, e.g., state files, etc.)

WDOE files; EPA files; pers. comm., M. Wurl, PSAPCA, 4/2/85

*Note: Contaminants and concentrations in the wash water will change depending on chemicals hauled.

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT Part 3 - Description of Hazardous Conditions & Incidents		I. IDENTIFICATION	
		01 State WA	02 Site Number D067156489
II. HAZARDOUS CONDITIONS AND INCIDENTS			
01 (X) A. Groundwater Contamination	02 () Observed (Date:)	(X) Potential	() Alleged
03 Population Potentially Affected: > 10,000 04 Narrative Description None reported, but potential of contamination from aeration lagoons (wash facilities) does exist. Aquifer is unconsolidated alluvial and valley glacial deposits consisting of clay, silt, sand, gravel & peat. Depth to GW is 15-20 ft. GW usage includes public, domestic, industrial.			
01 (X) B. Surface Water Contamination	02 () Observed (Date:)	() Potential	() Alleged
03 Population Potentially Affected: 0 04 Narrative Description None reported. Nearest surface water is an unnamed tributary draining to the Green River, 2 miles to the northeast at a 1.5% slope.			
01 (X) C. Contamination of Air	02 (X) Observed (Date: 10/10/79)	() Potential	() Alleged
03 Population Potentially Affected: 13,000 04 Narrative Description Site was fined \$250.00 (max. penalty) by PSAPCA for toxic emissions from the lagoons in Oct. 1979. Citizen complaints have been filed with PSAPCA & the Kent Fire Dept. regarding emissions. Resident population is 10,500 and transient population is 2500 within one mile.			
01 (X) D. Fire/Explosive Conditions	02 () Observed (Date:)	() Potential	() Alleged
03 Population Potentially Affected: 0 04 Narrative Description No certified fire/explosive conditions.			
01 (X) E. Direct Contact	02 () Observed (Date:)	() Potential	() Alleged
03 Population Potentially Affected: 0 04 Narrative Description Direct contact is unlikely because the entire site is fenced and gated.			
01 (X) F. Contamination of Soil	02 () Observed (Date:)	(X) Potential	() Alleged
03 Area Potentially Affected (acres): 5 04 Narrative Description None reported but the potential exists if chemical wash waters are continually discharged to unlined lagoons. Soil is Alderwood gravelly sandy loam of moderate permeability.			
01 (X) G. Drinking Water Contamination	02 () Observed (Date:)	(X) Potential	() Alleged
03 Population Potentially Affected: > 10,000 04 Narrative Description None reported. Public wells and private wells within 3 miles; nearest known well (Sharick) is 0.5 mi. southeast. Aeration lagoons are unlined.			
01 (X) H. Worker Exposure/Injury	02 () Observed (Date:)	(X) Potential	() Alleged
03 Workers Potentially Affected: UNK 04 Narrative Description No reported incidents but the potential for worker exposure exists when handling hazardous chemicals/wastes. The exposure potential would increase if workers are continually exposed to toxic emissions from lagoons.			
01 (X) I. Population Exposure/Injury	02 () Observed (Date:)	() Potential	() Alleged
03 Population Potentially Affected: > 10,000 04 Narrative Description Numerous citizen complaints of skin and eye irritation and burning from emissions from aeration lagoons. Site fined \$250.00 by PSAPCA for emission in October, 1979.			

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT Part 3 - Description of Hazardous Conditions & Incidents		I. IDENTIFICATION	
		01 State	02 Site Number
		WA	D067156489
II. HAZARDOUS CONDITIONS AND INCIDENTS (continued)			
01 ☒ J. Damage to Flora 04 Narrative Description None reported or suspected.	02 ☐ Observed (Date:) ☐ Potential ☐ Alleged		
01 ☒ K. Damage to Fauna 04 Narrative Description (include name[s] of species) None known. Lower Green River is a Chinook and Chum salmon passage route for smolts and spawning adults.	02 ☐ Observed (Date:) ☐ Potential ☐ Alleged		
01 ☒ L. Contamination of Food Chain 04 Narrative Description None known or suspected.	02 ☐ Observed (Date:) ☐ Potential ☐ Alleged		
01 ☒ M. Unstable Containment of Wastes (spills/runoff/standing liquids/leaking drums) 03 Population Potentially Affected: 710,000 04 Narrative Description Tank truck wash waters are discharged to unlined lagoons. A 1979 WDOE inspection found non-toxic sulfide waste overflowing from a holding pond. No record of any inspection since 1979.	02 ☐ Observed (Date:) ☒ Potential ☐ Alleged		
01 ☒ N. Damage to Offsite Property 04 Narrative Description None reported.	02 ☐ Observed (Date:) ☐ Potential ☐ Alleged		
01 ☒ O. Contamination of Sewers, Storm Drains, WWTs 04 Narrative Description None reported. Area is served by METRO sewer system.	02 ☐ Observed (Date:) ☐ Potential ☐ Alleged		
01 ☒ P. Illegal/Unauthorized Dumping 04 Narrative Description None reported.	02 ☐ Observed (Date:) ☐ Potential ☐ Alleged		
05 Description of Any Other Known, Potential, or Alleged Hazards None known or suspected.			
III. TOTAL POPULATION POTENTIALLY AFFECTED: >10,000			
IV. COMMENTS			
Widing is currently moving their facility to a new location. Lagoons are to be closed under supervision of the City of Kent and WDOE (Tom Moore). Core samples will be taken to verify proper cleanup. Closure should be complete in 1985.			
V. SOURCES OF INFORMATION (cite specific references: state files, reports, etc.)			
WDOE files; EPA files; Mike Wurl, PSAPCA, pers. comm. 4/2/85; USGS, Des Moines Quad (1973); WDF, WA Stream Catalogue; DSHS computer files; WSB #28 (1969); SCS Soil Survey (1973); 1980 Census Data; PSCOG (1984); T. Moore, WDOE (Redmond), pers. comm., 4/2/85.			

R.4E.



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

4350-150th Ave. N.E. • Redmond, Washington 98052-5301 • (206) 867-7000

April 12, 1988

Mr. Peter J. Pedone
Environmental Regulatory Compliance
PO Box 97366
Tacoma, WA 98497

Mr. Pedone:

I have received your February 10th letter to John Conroy; we have reviewed the enclosures and discussed the situation.

Your frustration is apparent and understandable. Even though the closure and cleanup of the wash facility was conducted by our criteria, EPA has independent jurisdiction.

Their ultimate authority is perceived by our agency as part of the checks and balance system. In this instance as with many our activities they are in a position to review our actions to verify that environmental concerns were adequately addressed.

While their site evaluation may complicate the merchandising of the property, once their concerns are addressed no further environmental issues will be related to Widings activities. The nearness to Midway Landfill undoubtedly will have a greater effect on property values than the site evaluation by EPA.

Thank you for the information, it will be added to the retired Widing file.

Sincerely,

A handwritten signature in dark ink, reading "Ron Devitt", is written over the typed name.

Ron Devitt
District Inspector

cc: John Conroy, NWRO

RD:cd

PETER J. PEDONE SR.
ENVIRONMENTAL REGULATORY COMPLIANCE (ERC)
PO BOX 97366
TACOMA, WA 98497
(206) 581-4623

February 10, 1988

Mr. John Conroy
State Department of Ecology
Northwest Regional Office
4350 - 150th Avenue NE
Redmond, WA 98052



Dear Mr. Conroy:

As you are aware, Widing Transportation, Inc., completed a DOE supervised cleanup of the Widing Midway terminal site in late 1986. In July, 1987, Widing Shareholders were informed that a survey of the Midway site would be conducted by Ecology & Environment, Inc. (a firm under contract to the EPA, Region X). Upon completion of their survey, E&E recommended to the EPA that further testing of the Midway site be conducted. Much to our disappointment, the EPA has agreed to the recommendation.

As stated above, Widing Shareholders were very concerned by the EPA decision, and asked me to express that concern to the EPA in writing. Accordingly, on December 23, 1987, the correspondence contained at Tab A was sent to EPA, Region X. You will note that the correspondence at Tab A contains various DOE memorandums obtained by the Widing Shareholders from the EPA under the provisions of the Freedom of Information Act (FOIA).

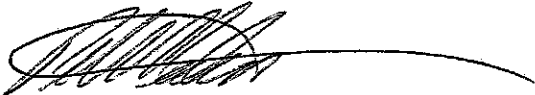
On January 28, 1988, the Widing Shareholders received the EPA's response to their December 23, 1987, correspondence. This response is contained at Tab B. You will note that the EPA's decision (after our appeal) remained the same: that is to do further testing. Since the Northwest Office of the DOE coordinated and supervised the cleanup effort, the Widing Shareholders felt the DOE should be informed of this decision. Further, they (Widing Shareholders) have asked me to share the EPA's response with your office in hopes that the DOE may appeal this decision on our behalf. We continue to believe

Mr. John Conroy
February 10, 1988
Page 2

that although credible arguments for further testing can be advanced, it still appears to us to be unnecessary and wasteful. The Midway property has been restored to normal; neighbor complaints have ceased; adjacent tests conducted by the City of Seattle are negative; and, in general, it seems to us that the EPA's attention should be shifted to higher priorities. However, we do not want to create an adversary role with the EPA, and we certainly do not want to jeopardize your relations with them . . . but in the interest of being thorough, we felt this request was necessary. Accordingly, we hope the DOE will study the situation and if any justification for further argument on our behalf is evident, we hope that that justification will be presented to the EPA, Region X.

On behalf of the Widing Shareholders, I wish to thank you for taking the time to review and study this situation. Your time and response is greatly appreciated.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "Peter J. Pedone Sr.", with a long horizontal flourish extending to the right.

Peter J. Pedone Sr.
Consultant to the
Widing Shareholders

PJP:ns

Attachments

cc: Mr. Bill Glasser
Mr. Rod Widing
Mr. Ray Abendroth

COPY

ENVIRONMENTAL REGULATORY COMPLIANCE (ERC)
PO BOX 97366
TACOMA, WA 98497
(206) 581-4623

Red
4-4-88

December 23, 1987

RECEIVED
FEB 17 1988
DEPARTMENT OF ECOLOGY
NORTHWEST REGION

Mr. Bill Glasser, R.S., M.P.H.
U. S. Environmental Protection Agency, Region X
1200 Sixth Avenue (HW-113)
Seattle, WA 98101

Dear Mr. Glasser:

This letter is submitted on behalf of the Widing Shareholders who are questioning the EPA's rationale and justification for continued soils and groundwater testing at the former Widing Trucking Terminal, located at 24300 Pacific Highway South, Kent, Washington. For benefit of the reader who may not be totally familiar with this property, a brief discussion of the background, cleanup operation and current situation is provided below. These discussions will be brief, for documentation and files supporting these discussions are available at the EPA, Region X, DOE, Northwest Regional Office and at Ecology & Environment, Inc., Seattle, Washington.

Background

For approximately 17 years, Widing Transportation operated a bulk carrier (tanker truck) terminal at the Midway property. For most of those years, a cargo-tank washing facility was in operation in the Northeast portion of the property. This facility operated under DOE permit. Initially, the wash facility used three (3) cement-lined impoundments for treatment of the wash rinsate. As business grew, two (2) surface impoundments were added to hold filtered rinsate. Over the years, excess rinsate was transported to Western Processing for disposal.

In March, 1986, the Widing Midway Terminal was closed and a voluntary cleanup of the impoundments began. In mid-1986, Widing Trucking assets were sold to Arrow Transportation, Incorporated, Portland, Oregon. In August, 1986, Mr. Glenn Widing, President and Owner of Widing Transportation, passed away. The voluntary Midway cleanup operation continued under the supervision of the Northwest

TAB A

Regional Office, DOE. The Widing Shareholders bore the expenses and followed the cleanup instructions issued by the DOE.

Cleanup Operation

In cleaning up the two (2) surface impoundments, laboratory analysis revealed a higher-than-acceptable level of phthalates. Accordingly, the DOE and the Widing Shareholders made the decision to continue excavations of both surface impoundments until acceptable levels of phthalates were obtained. All contaminated soil and material was disposed of at the Arlington Pollution Control Center (APCC), Oregon. At this point, the reader's attention is invited to a series of DOE memorandums (enclosure 1) that describe the cleanup procedures. The following significant points concerning the cleanup are extracted from these memorandums and stressed because of their relevance to the DOE's decision that adequate cleanup efforts were accomplished to remove the contaminants noted:

- Soil in both unlined surface impoundments was excavated to "hard pan" until phthalate levels reached the ND (undetected) level, (see enclosure 2).
- "The apparent rapid decrease in concentrations with depth indicates the 'hard pan' functions as an effective seal, protecting groundwater." (Quoted from memorandum dated August 6, 1986, found at enclosure 1.) As an added note to groundwater protection (not stated in the DOE memorandums at enclosure 1), the DOE supervised the drilling under the surface impoundments to a depth of 35 feet (at least eight (8) feet into hard pan) before making the decision not to pierce the hard pan further, in order to test groundwater, for fear of introducing contamination to same.
- No contamination (of any nature) was found under the concrete-lined impoundments.
- The concrete from the concrete impoundments was sand-blasted and the sand and grit from that cleaning disposed of at the APCC.
- The cleaned concrete from the concrete impoundments was disposed of at a demolition landfill designated by the Seattle/King County Health Department.

- Clean fill, as described in the DOE memorandum dated July 8, 1986 (enclosure 1) was used to fill all excavations at the Midway Terminal.

Supplemental information relevant to the cleanup (not contained in the DOE memorandums) is provided for your additional information:

- Total cost of cleanup at Midway was \$243,584.39 (see enclosure 3).
- Form 4's, notifying the DOE and EPA of the closure and completion of the Midway cleanup site, were provided to each individual headquarters on March 27, 1987.

Current Situation

On July 2, 1987, the Widing Shareholders were notified that Ecology & Environment, Inc. (E&E), a consulting firm under contract to the EPA, was going to conduct a site inspection to determine the impact or potential impact on the environment of any hazardous substances which may exist in an uncontrolled manner at the Midway facility (see enclosure 4). This notification also included the fact that E&E would submit a report to the EPA (EPA Form #2070-13) to determine if any further action is required at the site. Recently, the undersigned has been notified verbally, by both E&E and the EPA representatives, that further testing is required at the Midway site. This unofficial notification included statements that both groundwater and surface soils would be tested. Accordingly, this notification has caused concern among the Widing Shareholders who have requested that this letter be submitted to the EPA in hopes that the decision to do further testing would be reversed upon review of the situation. Additionally, the Shareholders wish to point out the following facts to the EPA before a final decision is reached:

- Currently, the City of Seattle is testing groundwater and surface waters all around the Widing Midway property as part of the development of the City's Midway Landfill Cleanup Plan (MLCP). As of this writing, twenty-seven (27) wells have been sampled by Seattle's consultants, to include Monitoring Wells (MW's) BH-8, 1, 21, 18, 12, 28 and 11, all located in close proximity to the Widing property. Testing procedures used by the Seattle consultants and the location of the various MW's are described at enclosure 5. Of particular interest is the

fact that as of December, 1987, the City has completed three of four proposed tests for each MW and the results are favorable. In those MW's nearest the Widing property, the City tested for phthalates but they were not quantifiable, as indicated in the report at enclosure 5. This includes MW-1, located in the trailer park just South of the Widing Midway property (supposedly in the same direction as the groundwater flow.) In respect to surface waters, the results do not indicate any contamination of surface waters in the Midway vicinity of the landfill, to include a grab just East of the Widing property in an area often referred to as "the swamp," (see enclosure 6).

In respect to methane gas migration, the DOE placed a gas probe well on the Northern perimeter of the Widing property in 1985. On June 19, 1987, the Widing Shareholders were advised that the probe would be removed because the monitoring results have revealed that virtually no gas has been detected on the Widing property and that this particular probe has never had a gas reading above the lower explosive limits (50,000 ppm). The probe was removed by the DOE in June, 1987. Upon reflection of all the testing done by the City of Seattle and the DOE, and the negative results obtained in this testing, a logical question to proposed further testing would be: Why? A natural extension of this question might also be: What is to be cleaned-up in the MLCP?

- Another concern of the Widing Shareholders is the image further testing will create for the property in question. Currently the property is for sale with the general knowledge that the site has been cleaned to the satisfaction of the DOE. Further testing would cloud this image and understanding, and could jeopardize the sale of the property. In this respect, the Widing Shareholders seek no guarantees or assurances from the EPA that further testing will enhance the sale of the property. On the contrary. The property is now clean -- all odor-causing material has been removed and the record clearly indicates that the Shareholders cleaned the property to the satisfaction of the DOE.

Conclusion

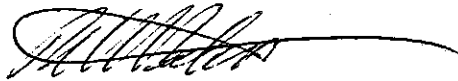
In conclusion, the Widing Shareholders request that the EPA do no further testing at the Midway property location for the following reasons:

1. The site has been cleaned to the satisfaction of the State Department of Ecology (DOE).
2. The Widing Shareholders voluntarily cleaned the site to DOE specifications at a cost of \$243,584.39. No corners were cut in achieving the standards desired by the DOE.
3. Testing in and around the Midway Landfill site continues by the City of Seattle and the DOE. All indications are that the groundwater and surface water adjacent to the Widing property are uncontaminated -- particularly free of phthalates. All indications are that the phthalate contamination in the surface impoundments on the Widing property was contained by the hard pan . . . and these areas have been adequately excavated and the contaminated soils properly disposed of at the APCC. A DOE gas probe on the Widing property has been closed because the readings have been below the minimum exposure levels of 50,000 ppm. The question is presented: Why is further testing required?
4. The Widing property is currently on the market with the general knowledge that the site has been cleaned to the satisfaction of the DOE. Further testing by any agency will cloud that image and jeopardize the sale.
5. Finally, the DOE made the decision not to pierce the hard pan below the surface impoundments -- this decision being made after drilling at least eight (8) feet into the hard pan without hitting groundwater. The DOE decision appears sound and logical -- why expose the groundwater to possible contamination when it appears obvious that the hard pan prevented the entry of any phthalates? We feel this decision should continue to be respected.

Mr. Bill Glasser, R.S., M.P.H.
December 23, 1987
Page 6

Mr. Glasser, we would appreciate your attention to this matter and hope that the EPA will carefully consider the concerns we have voiced in this paper before acting. We also hope you will verify the City of Seattle's latest tests before acting on this request. It is our understanding that the City will soon be conducting their fourth and final groundwater and surface water test in the areas previously mentioned in this report. We believe those results should be important to your decision-making process.

Sincerely yours,



Peter J. Pedone Sr.
Consultant to the Widing Shareholders

PJP:ns

Enclosures

cc: Mr. Rod Widing ✓
Mr. Robert Abendroth

MEMORANDUM

SEATTLE-KING COUNTY
DEPARTMENT OF PUBLIC HEALTH



8.24.85

TO: Rich Owings, Manager, Seattle Solid Waste Utility
Attention: Mel Andreson, Operations Manager
FROM: Wally Swofford, Coordinator
Toxic/Hazardous Materials Program DATE: 7/15/85
SUBJECT: WASTE MATERIAL CLEARED FOR LOCAL LANDFILL

This is to advise you that we find the waste material listed from the following company currently acceptable for landfill at Kent-Highlands:

COMPANY WIDING TRANSPORTATION, INC.
10145 North Portland Road
P.O. Box 03159
Portland, OR 97203
Contact: Rodman A. Widing

Hauling for Same

MATERIAL Dried pond sediment from the Midway plant. The dry sludge has been tested for heavy metals, polycyclic aromatic hydrocarbons and halogenated hydrocarbons and is approved.

AMOUNT Approximately 250 cubic yards

FREQUENCY One-time only

Specifications on these waste materials were submitted to us for review. The above substances were found not to meet the State DOE definitions for either extremely hazardous waste or dangerous waste or Federal EPA criteria for hazardous waste or toxic substances.

Please note that it is only the above described waste materials that are approved for disposal. Any other type of questionable waste from these companies will require separate review and analysis.

If you have any questions or need additional information, please call me at 587-2722.

WS:mt

cc: Chuck Rice, Hazardous Waste, Region X, EPA
Julie Sellick, Hazardous Waste, Northwest Office, DOE
Jeff Everest, EHS Supervisor, Southeast Office



COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.

Portland, OR 97230

Phone: (503) 254-1794

Widing Transportation
Page Two

July 5, 1985
Log #A850430-K

Analysis Requested: Halogenated Hydrocarbons

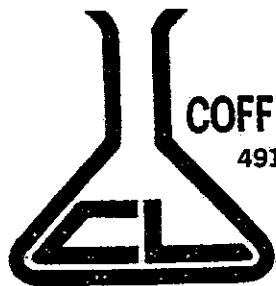
Sample ID: #1 and #2 - Dried Pond Sludge (2 years old) Sampled 4-26-85
North Side

#3 and #4 - Dried Pond Sludge (2 years old) Sampled 4-26-85
East Side

ANALYSIS	#1	#2	#3	#4
-----	-----	-----	-----	-----
1,2 Dichlorobenzene	0.47	0.68	0.73	1.5
1,4 Dichlorobenzene	< 1	1.1	1.1	< 1
1,2,3,5 Tetrachlorobenzene	18	26	7.5	3.7
1,2,3,4 Tetrachlorobenzene	1.1	2.4	2.8	1.9
Hexachlorobenzene	0.33	0.65	1.0	< 0.3
2 Chloronaphthalene	20	54.8	13.9	26.4
Hexachloroethane	< 0.3	0.35	< 0.3	< 0.3

Results given in mg/kg

THIS REPORT CONTINUES



COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.

Portland, OR 97230

Phone: (503) 254-1794

July 5, 1985

Log #A850430-K

Widing Transportation
P.O. Box 03159
Portland, Oregon 97203

Analysis Requested: Polynuclear Aromatic Hydrocarbons

Sample ID: #1 Dried Pond Sludge
(2 years old)
Sampled 4/26/85
North Side

#2 Dried Pond Sludge
(2 years old)
Sampled 4/26/85
North Side

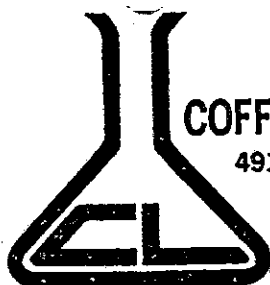
#3 Dried Pond Sludge
(2 years old)
Sampled 4/26/85
East Side

#4 Dried Pond Sludge
(2 years old)
Sampled 4/26/85
East Side

ANALYSIS	#1	#2	#3	#4
-----	----	----	----	----
Naphthalene	20.25	20.25	23.63	27
Phenanthrene	30.73	21.29	14.54	18.38
Anthracene	3.99	2.74	1.00	1.00
Fluoranthene	83.93	66.74	59.66	60.67
Pyrene	135.22	96.75	104.91	136.39
Chrysene	14.84	13.62	14.11	21.65
Benzo(B)fluoranthene	4.77	4.05	3.12	5.30
Benzo(K)fluoranthene	5.18	5.18	5.18	3.11
Benzo(a) Pyrene	4.56	3.99	3.42	4.56

Results given in mg/kg

THIS REPORT CONTINUES



COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.

Portland, OR 97230

Phone: (503) 254-1794

July 5, 1985
Log #A850430-K

Widing Transportation
P. O. Box 03159
Portland, Oregon 97203

Attention: Fred Beam

Subject: E P Toxicity Test.

Sample ID: #1 and #2 - Dried Pond Sludge (2 years old) Sampled 4-26-85
North Side

#3 and #4 - Dried Pond Sludge (2 years old) Sampled 4-26-85
East Side

Method of Analysis: Federal Register/Vol.45, No.98/Monday,
May 19, 1980/ Rules and Regulations; Appendix II, Page 33127

Field Data: Samples were collected and delivered by the Client

ANALYSIS	#1	#2	#3	#4	Limit
-----	-----	-----	-----	-----	-----
Arsenic	< 0.05	< 0.05	0.30	< 0.05	5.0
Barium	< 0.05	< 0.05	< 0.05	0.06	100.0
Cadmium	< 0.05	< 0.05	< 0.05	< 0.05	1.0
Chromium	< 0.05	< 0.05	0.35	0.12	5.0
Lead	< 0.05	< 0.05	0.68	0.48	5.0
Mercury	< 0.05	< 0.05	< 0.05	< 0.05	0.2
Selenium	< 0.05	< 0.05	< 0.05	< 0.05	1.0
Silver	< 0.05	< 0.05	< 0.05	< 0.05	5.0

< denotes "less than"

Results expressed in mg/liter

Sincerely,

Susan M. Coffey
President

SMC/db

Red 0-2457

RECEIVED

Trade Name	Proper Shipping Name	Hazard Classification	UN or NA Hazard Identifier	Rinsed or Dedicated
Weak Acid	Sulphuric Acid (20-40%)	Corrosive Liquid	UN 1830	Rinsed
Alum	Liquid Aluminum Sulphate	ORM-B	UN 1760	Dedicated
Paper Resin (Phenolic)	Phenolic Resin	ORM-E	NA 9188	Rinsed
Spent Solvent Waste (Recton Solvent)	Petroleum Naptha	Combustible Liquid	UN 1256	Dedicated
M-Grade, 50% Caustic (Soap)	Sodium Hydroxide Sol.	Corrosive Liquid	UN 1824	Dedicated
Ru Silicate	Silicate	Non-Hazardous	None	Rinsed
Caustic Potash	Potassium Potash	Corrosive Liquid	UN 1814	Rinsed
Sanitizer 7-11 Sanitizer	Plasticizer, Resin	Non-Hazardous	None	Rinsed
#6 Fuel Oil	Fuel Oil	Combustible Liquid	UN 1993	Rinsed
Thinner 450 Thinner 350-B	Naptha Solvent	Combustible Liquid	UN 1256	Evaporates/ Dedicated

(continued)

Trade Name	Proper Shipping Name	Hazard Classification	UN or NA Hazard Identifier	Rinsed or Dedicated
A/C De-Icer Aircraft De-Icer Glycol	Aircraft De-Icing Sol. Aircraft De-Icing Sol. Aircraft De-Icing Sol.	Non-Hazardous Non-Hazardous Non-Hazardous	None None None	Evaporates/ Dedicated
Dry Urea Urea	Urea Urea	Non-Hazardous Non-Hazardous	None None	Dry Product Blown-out
MEK	Methyl Ethyl Ketone	Flammable Liquid	UN 1193	Evaporated/ Dedicated

Other products on the Transportation Logs are identified by Proper Shipping Name.

PETER J. PEDONE SR.
ENVIRONMENTAL REGULATORY COMPLIANCE (ERC)
PO BOX 97366
TACOMA, WA 98497
(206) 581-4623

Rcd-
8-24-87

August 20, 1987

Ecology & Environment, Inc.
Attn: Ms. Gloria Skinner
101 Yesler Way
Seattle, WA 98104

RECEIVED
AUG 24 1987
DEPT. OF ECOLOGY

Dear Ms. Skinner:

This letter serves as an interim reply to your letter of July 30, 1987, containing six additional questions concerning the DOE approved closure of the settling ponds at the former Widing truck terminal in Midway, (see Enclosure 1).

As you are aware, Widing assets were sold to Arrow Transportation prior to Mr. Glenn Widing's death in August, 1986. Just prior to that sale, records of outlying terminals were consolidated for retirement at the headquarters terminal in Portland, Oregon. This included all terminal records maintained at Midway. In order to answer some of your questions, these records must be pulled from storage in Portland and reviewed. The task is further complicated by the fact that historical records were not required by law for some of the information you have requested. For example, there is no statutory retention time specified for quantity of product transported, or quantity of water used in rinsing-out empty cargo tanks for discharge to recycling ponds. Additionally, not all products transported required rinsing on a repetitive basis. Quite frequently the same cargo tank was used to transport the same product. Therefore, the cargo tank did not require rinsing between loads. Also, many of the products, such as aircraft de-icing solution, were cleaned by air flotation (evaporation). Keeping these facts in mind, I will attempt to answer your questions in the same numerical sequence as presented in your letter of July 30, 1987 (Enclosure 1).

Question No. 1: (Final reply.) A list of chemicals transported by trucks and trailers rinsed at the Midway terminal is attached as Enclosure 2. Other lists of products transported or rinsed by Widing, that may be in your possession, are believed to be products associated

with the Portland, Oregon, terminal. In any event, there are no records available to indicate the quantities of these products transported, or the quantity of water (fresh or recycled) used to rinse the empty cargo tanks. However, two facts that are relevant to this question should be mentioned. One concerns excess rinse water and the other the number of trucks sited at Midway. Each is discussed below:

Excess Rinse Water: Two purposes associated with the use of settling or recycle ponds is: (1) to permit solar evaporation of the water, and (2) the settling of solids for later removal and disposal. Oftentimes, especially in periods of heavy rain, these ponds would fill, thus requiring that rinsate be diverted from the ponds to holding tanks. Because of the relatively small size of the Widing settling ponds, excess water was often diverted to cargo tanks and transported to Western Processing for recycle and/or disposal. During the years 1969 through 1983 (time of closure of Western Processing), Widing transported approximately 490,000 gallons of excess rinsate to the then federally and state approved site called Western Processing. As a result of this procedure, Widing was identified as a potentially responsible party in the private sector cleanup of the Western Processing facility. It seems appropriate to mention here that over the years isolated complaints were lodged against Widing for allowing overflow rinsate from the settling ponds to "run-off property" . . . when, in fact, excess rinsate was being collected and properly disposed of as mentioned above and as duly recorded by both the DOE and EPA. Unfortunately, certain neighbors were anxious to see the terminal closed and, therefore, would often purposely confuse surface water run-off with impounded rinsate. Additional reference to surface water run-off will be made in our reply to Question No. 3.

Number of Trucks and Trailers Sited at Midway: During the years 1969 through 1974, there were seven trucks and trailers (average) sited at Midway. This number gradually increased over the years to 16 trucks and trailers at the time of closure. It should also be mentioned, and as indicated on Enclosure 2, that several trucks and trailers were dedicated to specific commodities and, therefore, not rinsed between each load.

Question No. 2: (Interim reply.) The settling ponds were periodically dredged (approximately once annually) as described by the City of Kent. The dredged material was permitted to dry (solar evaporation); tested for suitability of landfill disposal, and disposed of in accordance with instructions received from the Seattle/King County Health Department. The dredged material was stored on the ground just North of the ponds (along the side of the pond). Later, during our cleanup of the ponds, this area was excavated to native soil (approximately eight feet) and the excavated dirt disposed of at Arlington. A representative example of the analysis and approval process is attached as Enclosure 3. Search is underway for additional analysis data representing two or three years of dried sludge disposal procedures.

Question No. 3: (Final reply.) The depth of the concrete-lined ponds was approximately eight (8) feet. The length of the North and South settling ponds (as indicated in Enclosure No. 1 of the Closure Report) was approximately 81 feet. Over the years, the exact sizes (dimensions) of the settling ponds may have changed slightly because of the dredging action during the sludge removal procedure. However, the dimensions indicated in the Closure Report are considered essentially correct.

In respect to surface water drainage ditches, two are located on the site -- one running along the Northern boundary of the property, and the other along the Southern boundary of the property. Both drain into the storm drainage system on Pacific Highway South. As indicated under Questions No. 1, isolated complaints concerning surface run-off have been lodged against Widing. However, the responding authorities who investigated such complaints were satisfied that our surface water drainage system was adequate.

Question No. 4: (Interim reply.) A description of the recycle system for the rinsate prior to the installation of the Great Lakes Tank Wash Treatment (TWT) System will follow pending search for draft permit #5117.

Question No. 5: (Interim reply.) Search for necessary records and information on which to base a reply is underway.

Question No. 6: (Final reply.) Attached at Enclosure 4 is the Waste Disposal Request form and approval by DEQ, Oregon, and copies of all receipts associated with the disposal of approximately 904 tons of contaminated soil removed from the Midway settling ponds. Copies of HW

Ecology & Environment, Inc.

Attn: Ms. Gloria Skinner

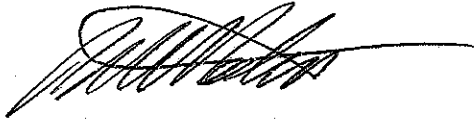
August 20, 1987

Page 4

Manifests could be made available for viewing by contacting the undersigned. However, to ~~save~~ reproduction costs, only the receipts are provided herewith.

Hopefully I will be able to provide a final reply for Questions 2, 4 and 5 within the next week. Until then, please feel free to contact me for further information.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Peter J. Pedone Sr.', with a long horizontal flourish extending to the right.

Peter J. Pedone Sr.
Principal

PJP:ns

Enclosures

cc: Mr. Wally Swofford
Mr. Ron Devitt ✓
Mr. Bill Wright
Mr. Rod Widing



ecology and environment, inc.

101 YESLER WAY, SEATTLE, WASHINGTON, 98104, TEL. 206/624-9537

International Specialists in the Environment

July 30, 1987

RECEIVED

AUG 24 1987

Mr. Peter Pedone
c/o Mr. Rod Widing Sr. DEPT. OF ECOLOGY
Widing Transportation, Inc.
P.O. Box 3446
Midway, WA 98032

Dear Mr. Pedone:

As indicated by our telephone conversation of July 29, 1987, herein follows the list of items I requested further information about. This information is needed so that I can most accurately represent Widing's business operation and closure in my report to the EPA.

I realize the detail requested in these items may require some time and research on your part to obtain. Nevertheless, I am ready to proceed with my investigation as soon as I receive your reply, which I hope will be expeditious.

As always, I can be reached for questions at 624-9537.

Sincerely,

Gloria Skinner

Gloria Skinner

GS/ng

Enclosure

Red 8-2-87

Widing Trans
Midway
Closure

1. Please provide a list of those chemicals hauled by trucks which were rinsed at the Midway location. Specific names are desired as opposed to generalities, such as "acids." Indicate approximate quantities of each from 1969 through 1984 either by number of trucks, gallons of rinsate, or percent of total. If percent quantities are shown, be sure to include the total volume that is equal to 100%.
2. In October 1979, the City of Kent stated that the settling ponds were periodically dredged and dredged materials were piled immediately north of the ponds. What became of this material after that? How was it stored? Please provide a representative group of analysis data from two or three years.
3. What was the depth of the concrete-lined ponds? What was the length of the north and south settling ponds? Reports indicate that in the past there have been drainage ditches along the northern and southern property boundaries. Please provide the exact location of these ditches and precisely where they exited the property in any direction.
4. Please explain clearly how effluent from the truck wash facility was prepared for recycling and how recycling was actually accomplished.
5. Where and how was rinsate disposed of after the settling ponds were closed in 1984, until the Kent facility received discharge to the METRO sewer system in November of 1985? Between what dates was the Great Lakes tank waste treatment system operable? Please provide an exact description of its installation, including placement of all components in operating position, underground and above, on the site. A sketch map would be helpful.
6. Please provide a copy of your receipts or manifests for delivery of soil at the Arlington, Oregon APCC Landfill as part of your closure process at Midway.



Seattle Engineering Department

NEWS RELEASE

GARY ZARKER, DIRECTOR
Charles Royer, Mayor

July 20, 1987

Contact: Lin Robinson, Solid Waste Utility, 625-5163.
Marybeth Turner, Community Affairs, 684-5351.

SURFACE WATER TESTING MIDWAY LANDFILL

Data from the testing of surface water and seeps in the vicinity of the Midway Landfill is now available. The Seattle Engineering Department's consultants conducted this round of testing for the Midway Remedial Investigation in March, 1987. The results do not indicate any contamination of surface waters in the Midway vicinity by the landfill. They confirm earlier testing conducted by the Washington State Department of Ecology and Parkside Elementary School of surface waters in the Midway area.

The consultants tested the surface waters and seeps at 47 sites for field parameters (pH and conductivity). Water samples from 31 of these sites were tested further for parameters which show the general physical and chemical qualities of the water. Samples collected from 12 sites were also tested for hazardous substances established by the Environmental Protection Agency as "priority pollutants."

The test results showed the quality of the surface water to be generally good. The field conductivities were all within the normal range for background conductivity levels. Organic compounds were detected at only three of the twelve sites tested for these compounds. One site is on the edge of the landfill. A second site is below an abandoned gas station. The compounds found at that site appear to be petroleum derivatives and may have come from activities at the gas station. Ecology is investigating this site further.

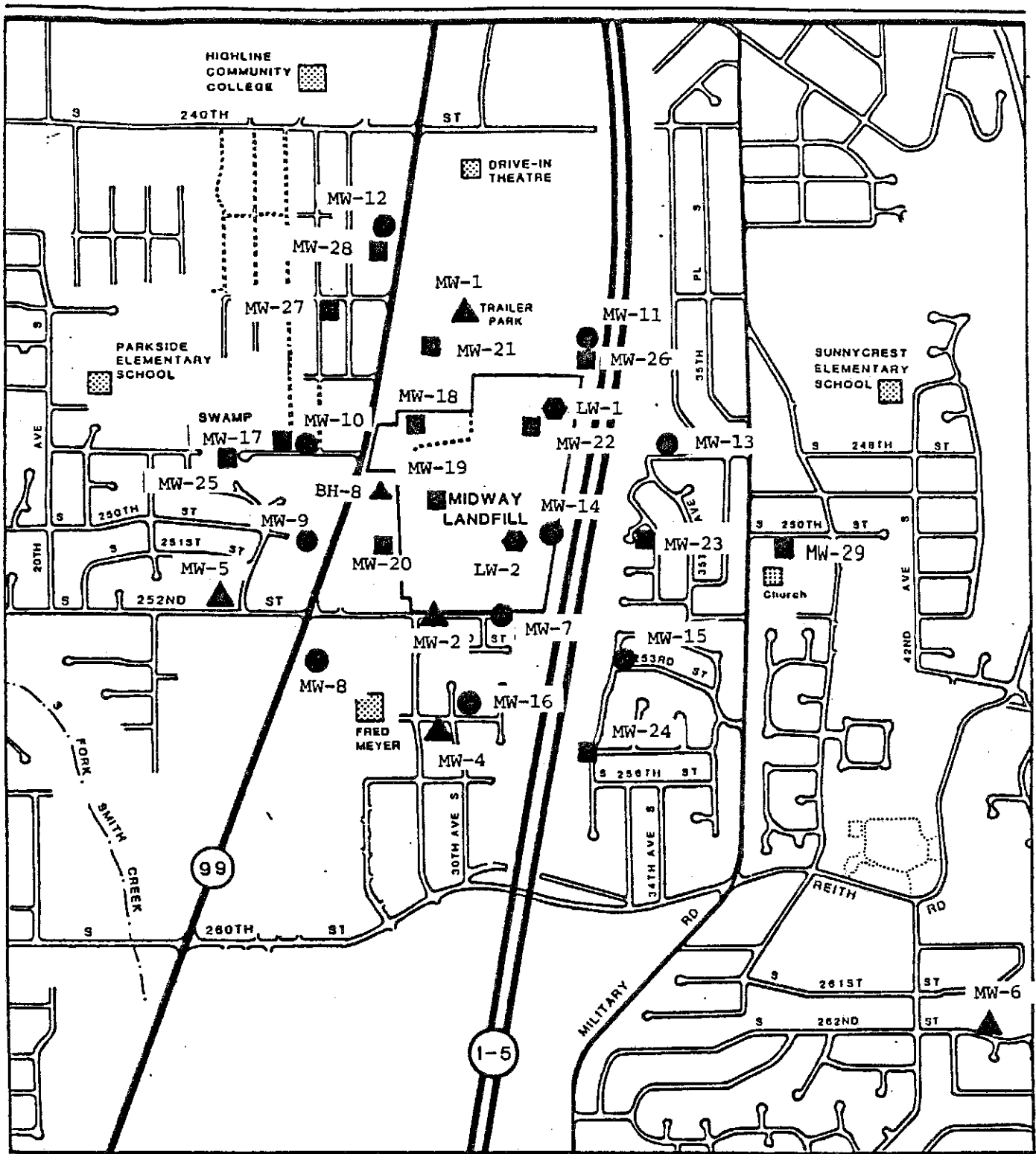
PAGE 2

The third location where organic compounds were found is one of the sampling sites in the Parkside Wetland. The compounds found at this site were at extremely low levels (1-4 parts per billion) and do not exceed drinking water standards. This site is being retested to confirm the presence and levels of these compounds. Organic compounds were not found at any other wetland site. A total of eleven sites were tested in the wetland vicinity and five of these sites were tested for the presence of organic compounds. The source of the organic compounds cannot be determined at this time due to the nature of the compounds, and because their low levels make them difficult to trace. Further investigations of groundwater and surface water in the Midway vicinity will help determine the sources of the compounds. This will be included in the Midway Remedial Investigation report.

Copies of the test results are available at the Midway Information Office, located at 25030 Military Road South in Kent, and at the 9th Floor Information Counter in the Seattle Municipal Building, 600 - 4th Avenue, Seattle. The full data set is also available for review at the Midway Information Office and at Kent and Des Moines Public Libraries.

c/met23.1

07-17-87:tt



MIDWAY LANDFILL

- ◆ LEACHATE WELLS
- PHASE I MONITORING WELLS
- PHASE II MONITORING WELLS
- ▲ FIS MONITORING WELLS

SUMMARY SHEET FOR: MW-1

Depth of Well Screened Interval: 86.4 - 122.2 feet

Elevation of Well Screened Interval: 243.8 - 279.6 feet (MSL)

Total Boring Depth: 126.0 ft; and Bottom Elevation: 239.99 ft (MSL)

	<u>Sampling Round</u>			
	<u>No. 1</u> ^a	<u>No. 2</u> ^b	<u>No. 3</u>	<u>No. 4</u>
<u>Conventional Parameters (ppm):</u>				
BIOCHEMICAL OXYGEN DEMAND		<2		
CHEMICAL OXYGEN DEMAND	<5	<5		
CYANIDE	<0.01	<0.01		
SULFATE	25.0	24.0		
SULFIDE	<0.05	<0.05		
NITRATE as NITROGEN	3.4	<4.6		
NITRITE as NITROGEN	<0.05	<0.05		
AMMONIA as NITROGEN	<0.05	0.25		
TOTAL KJELDAHL NITROGEN	<0.01	0.08		
CHLORIDE	5.3	10.2		
FLUORIDE	<0.5	<0.5		
TOTAL DISSOLVED SOLIDS	160	144		
HARDNESS	85	76.8		
ALKALINITY	51	55.6		
CARBONATE	<5	<5		
BICARBONATE	51	55.6		
TOTAL ORGANIC CARBON	1.9	1.0		
TOTAL ORGANIC HALIDES	<0.008	0.015		
TOTAL COLIFORM COUNT (MPN/100ml)	170	11		
SPECIFIC CONDUCTANCE (uMHO)		184		
pH		7.81		

Metals (ppm)

ZINC	<0.01	0.12
NICKEL	0.02	<0.01
CHROMIUM	0.01	0.01
COPPER	<0.02	<0.02
SILVER	<0.05	<0.05
BERYLLIUM	<0.02	<0.02
BORON	<0.5	<0.2
CALCIUM	17.6	16.9
MAGNESIUM	9.9	8.4
SODIUM	7.7	7.6
POTASSIUM	1.7	11.9
IRON	0.08	0.27
MANGANESE	0.02	0.03
ANTIMONY	<0.002	<0.002
ARSENIC	<0.002	<0.002
SELENIUM	<0.002	<0.002
LEAD	<0.002	0.003
CADMIUM	0.0004	0.0009
THALLIUM	<0.002	<0.002
MERCURY	<0.0005	<0.0005

SUMMARY SHEET FOR: MW-1 (cont.)

	<u>No. 1</u>	<u>Sampling Round</u>		<u>No. 4</u>
		<u>No. 2</u>	<u>No. 3</u>	
<u>Pesticides and PCBs:</u>	None Detected	None Detected		

Volatile Organic Compounds (ppb):

ACETONE	160 (tr)	-
CHLOROFORM	1 (1)	-
TETRACHLOROETHENE	3	3

Semi-Volatile Organic Compounds (ppb):

BIS-(2-ETHYLHEXYL) PHTHALATE	110	tr
------------------------------	-----	----

Notes: MSL = mean sea level elevation
 ppm = parts per million (mg/L)
 ppb = parts per billion (ug/L)
 20(10) = "amount found in sample" followed by
 (amount found in laboratory reagent blank)
 tr = trace; not quantifiable

a Round No. 1 conducted in November 1986.

b Round No. 2 conducted in January 1987.

SUMMARY SHEET FOR: MW-10A

Depth of Well Screened Interval: 194.6 - 200.0 feet
 Elevation of Well Screened Interval: 139.2 - 144.6 feet (MSL)
 Total Boring Depth: 245 ft; and Bottom Elevation: 94.2 feet (MSL)

Sampling Round

No. 1 ^a No. 2 No. 3 No. 4

Conventional Parameters (ppm):

BIOCHEMICAL OXYGEN DEMAND	<1.0
CHEMICAL OXYGEN DEMAND	6
CYANIDE	<0.01
SULFATE	432
SULFIDE	<0.05
NITRATE as NITROGEN	<0.05
NITRITE as NITROGEN	<0.05
AMMONIA as NITROGEN	0.45
TOTAL KJELDAHL NITROGEN	0.37
CHLORIDE	20.4
FLUORIDE	<0.5
TOTAL DISSOLVED SOLIDS	920
HARDNESS	141
ALAKALINITY	144
CARBONATE	50.0
BICARBONATE	94.0
TOTAL ORGANIC CARBON	2.1
TOTAL ORGANIC HALIDES	0.040
TOTAL COLIFORM COUNT (MPN/100ml)	<2
SPECIFIC CONDUCTANCE (uMHO)	921
pH	9.12

Metals (ppm)

ZINC	0.03
NICKEL	<0.01
CHROMIUM	<0.01
COPPER	<0.02
SILVER	<0.05
BERYLLIUM	<0.02
BORON	<0.2
CALCIUM	29.8
MAGNESIUM	16.1
SODIUM	206
POTASSIUM	10.0
IRON	0.46
MANGANESE	0.05
ANTIMONY	0.003
ARSENIC	0.008
SELENIUM	<0.002
LEAD	0.002
CADMIUM	0.0004
THALLIUM	<0.002
MERCURY	<0.0005

SUMMARY SHEET FOR: MW-10A (cont.)

	<u>No. 1</u>	<u>Sampling Round</u>		<u>No. 4</u>
		<u>No. 2</u>	<u>No. 3</u>	
<u>Pesticides and PCBs:</u>	None			
	Detected			

Volatile Organic Compounds (ppb):

CHLOROETHANE	3
1, 1 DICHLOROETHANE	14
CHLOROFORM	5
1,1,1 TRICHLOROETHANE	2
TOTAL XYLENES	3
2-BUTANONE	tr

Semi-Volatile Organic Compounds (ppb):

None
Detected

Notes: MSL = mean sea level elevation
 ppm = parts per million (mg/L)
 ppb = parts per billion (ug/L)
 20(10) = "amount found in sample" followed by
 (amount found in laboratory reagent blank)
 tr = trace; not quantifiable

^a Round No. 1 conducted in January 1987.

Depth of Well Screened Interval: 233.8 - 239.2 feet
 Elevation of Well Screened Interval: 136.0 - 141.4 feet (MSL)
 Total Boring Depth: 266 ft; and Bottom Elevation: 109.2 ft. (MSL)

Sample Round

No. 1 ^a No. 2 No. 3 No. 4

Conventional Parameters (ppm):

BIOCHEMICAL OXYGEN DEMAND	<2
CHEMICAL OXYGEN DEMAND	19
CYANIDE	<0.01
SULFATE	14.0
SULFIDE	<0.05
NITRATE as NITROGEN	0.05
NITRITE as NITROGEN	0.06
AMMONIA as NITROGEN	0.08
TOTAL KJELDAHL NITROGEN	0.04
CHLORIDE	7.7
FLUORIDE	<0.5
TOTAL DISSOLVED SOLIDS	124
HARDNESS	47.1
ALKALINITY	75.8
CARBONATE	<5
BICARBONATE	75.8
TOTAL ORGANIC CARBON	1.0
TOTAL ORGANIC HALIDES	0.010
TOTAL COLIFORM COUNT(MPN/100ml)	50
SPECIFIC CONDUCTANCE (uHMO)	
pH	

Metals (ppm)

ZINC	0.40
NICKEL	<0.01
CHROMIUM	<0.01
COPPER	<0.02
SILVER	<0.05
BERYLLIUM	<0.02
BORON	<0.2
CALCIUM	8.8
MAGNESIUM	6.1
SODIUM	15.6
POTASSIUM	6.6
IRON	0.17
MANGANESE	0.10
ANTIMONY	<0.002
ARSENIC	<0.002
SELENIUM	<0.002
LEAD	0.002
CADMIUM	0.0016
THALLIUM	<0.002
MERCURY	<0.0005

SUMMARY SHEET FOR: MW-12A (cont.)

	<u>Sampling Round</u>			
	<u>No. 1</u>	<u>No. 2</u>	<u>No. 3</u>	<u>No. 4</u>
<u>Pesticides and PCBs:</u>	None			
	Detected			

Volatile Organic Compounds (ppb):

TOLUENE 2(2)

Semi-Volatile Organic Compounds (ppb):

None
Detected

Notes: MSL = mean sea level elevation
ppm = parts per million (mg/L)
ppb = parts per billion (ug/L)
20(10) = "amount found in sample" followed by
(amount found in laboratory reagent blank)
tr = trace; not quantifiable

^a Round No. 1 conducted in January 1987.

SUMMARY SHEET FOR: MW-12B

Depth of Well Screened Interval: 255.4 - 258.4 feet

Elevation of Well Screened Interval: 116.8 - 119.8 feet (MSL)

Total Boring Depth: 266 ft; and Bottom Elevation: 109.2 feet (MSL)

Sample Round

<u>No. 1</u> ^a	<u>No. 2</u>	<u>No. 3</u>	<u>No. 4</u>
---------------------------	--------------	--------------	--------------

Conventional Parameters (ppm):

BIOCHEMICAL OXYGEN DEMAND	<2
CHEMICAL OXYGEN DEMAND	<5
CYANIDE	<0.01
SULFATE	<10.0
SULFIDE	<0.05
NITRATE as NITROGEN	<0.05
NITRITE as NITROGEN	<0.05
AMMONIA as NITROGEN	0.10
TOTAL KJELDAHL NITROGEN	0.15
CHLORIDE	6.5
FLUORIDE	<0.5
TOTAL DISSOLVED SOLIDS	130
HARDNESS	60.6
ALKALINITY	70.7
CARBONATE	<5
BICARBONATE	70.7
TOTAL ORGANIC CARBON	0.9
TOTAL ORGANIC HALIDES	<0.008
TOTAL COLIFORM COUNT(MPN/100ml)	23
SPECIFIC CONDUCTANCE	131
pH	7.45

Metals (ppm)

ZINC	0.03
NICKEL	<0.01
CHROMIUM	<0.01
COPPER	<0.02
SILVER	<0.05
BERYLLIUM	<0.02
BORON	<0.2
CALCIUM	<12.2
MAGNESIUM	7.3
SODIUM	10.1
POTASSIUM	7.4
IRON	0.07
MANGANESE	0.14
ANTIMONY	<0.002
ARSENIC	<0.002
SELENIUM	<0.002
LEAD	<0.002
CADMIUM	0.0023
THALLIUM	<0.002
MERCURY	<0.0005

SUMMARY SHEET FOR: MW-12B (cont.)

	<u>No. 1</u>	<u>Sampling Round</u> <u>No. 2</u>	<u>No. 3</u>	<u>No. 4</u>
<u>Pesticides and PCBs:</u>	None			
	Detected			

Volatile Organic Compounds (ppb):

None
Detected

Semi-Volatile Organic Compounds (ppb):

BIS (2-ETHYLHEXYL) PHTHALATE tr

Notes: MSL = mean sea level elevation
ppm = parts per million (mg/L)
ppb = parts per billion (ug/L)
20(10) = "amount found in sample" followed by
(amount found in laboratory reagent blank)
tr = trace; not quantifiable

^a Round No. 1 conducted in January 1987.



U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101

January 28, 1988

REPLY TO
ATTN OF:

HW-113

Peter J. Pedone, Sr.
Environmental Regulatory Compliance
Consultant to the Widing Shareholders
P.O. Box 97366
Tacoma, Washington 98497

Dear Mr. Pedone and Widing Stockholders:

This letter is in response to your letter of December 23, 1987, to the U.S. Environmental Protection Agency (EPA) which expresses concern over the EPA's rationale for continued sampling at Widing Transportation's Midway property.

As indicated by a Department of Ecology (Ecology) memo to Bob Nichols (6/18/86), the purpose of the Ecology supervised closure action required that "all lagoons, ponds, holding tanks, and remaining sludge be properly cleaned up." Ecology did not compile a final report detailing all remedial actions taken, nor was there a concise sampling plan or a full, organized set of analytical data made available. It is therefore difficult for the EPA to determine if all phases of the action were carried out to our satisfaction.

Further review of the unconsolidated Ecology files on Widing indicated that the previous action was limited in that the lagoon closure and cleanup did not address the possibility that other locations, on or off site, may have been contaminated by truck wash runoff. As no previous sampling has been done to establish that contaminants were limited only to the lagoons, and the contaminant migration potential has been documented, the EPA's proposed sampling program will examine the site as a whole.

The Ecology closure focused on only one compound bis(2-ethylhexyl) phthalate as a target indicator for contamination. Although a comprehensive scan for over 100 compounds was conducted at the beginning of the closure, certain compounds of interest to the EPA were not included, notably, 2-butanone (methyl ethyl ketone) which was used on site at the rate of 55 gallons per month (Ecology, 3/14/85). The EPA sampling program will include analysis parameters for this and other Target Compound List (TCL) substances. Further, no soil sample representing an uncontaminated area was analyzed during the Ecology closure, so natural (background) levels of soil components could not be compared to the area of suspected contamination beneath the lagoons. The EPA sampling program will include background sampling for the purpose of comparison.

TAB B

While Widing contends that the site property is clean following the lagoon closure, no data has been presented to demonstrate that the entire property is free from truck wash operation contaminants. In addition, Widing has not provided the EPA with adequate records detailing what materials were rinsed out of trucks at Midway, who their clients were, manifests of shipments, and similar records. The EPA must be assured that hazardous substances have not been disposed of at this site.

The following comments address specific concerns from Widing's letter to the EPA:

- ° From page 3, bottom paragraph (continued on page 4), "Currently the City of Seattle is testing groundwater..."

The proposed EPA sampling of the Widing property is not part of the Midway Landfill Cleanup Program (MLCP); currently being conducted by the city of Seattle. While some aspects of the city of Seattle program and sample matrices are similar (soil and water), the methane migration investigation is an example of how a landfill assessment program differs from this site investigation. Methane is frequently associated with buried organic matter found in most municipal landfills but is not expected to be present in large quantities at a site like the truck wash facility. Therefore, while the City of Seattle has designed its program to meet the needs of a landfill assessment, the EPA study will focus on the potential residual contamination from the former truck wash facility. It is not the intention of the EPA to duplicate relevant sampling completed by the city of Seattle. When pertinent, the city of Seattle testing results will be reviewed to contribute to the overall assessment of the Widing property.

- ° Page 4, Item 2 (bottom of page), "Another concern of the Widing Shareholders is the image..."

While EPA testing of the Widing property is perceived by the Shareholders to have a negative impact on sales potential, the responsibility of the EPA is to assure that no environmental hazard exists at this site. The absence of odor-causing material or other aesthetic anomalies does not scientifically demonstrate that an area is free of contaminants.

- ° Page 5, Conclusion Items 1,2, and 4

The EPA is aware of the effort and expense put forth by the Widing Shareholders to satisfy Ecology. However, the EPA feels that the work completed to date does not sufficiently demonstrate that contamination is no longer present at this site.

- Page 5, Conclusion Item 5

The EPA draft sampling plan does not call for installation of any new ground water wells, and drilling through confining layers to ground water on site is not anticipated at this time.

To summarize, the EPA feels further testing at Widing Transportation's Midway property is necessary for the following reasons:

1. A final report clearly detailing sampling, analysis, and all other activities pertaining to the lagoon closure and cleanup was not prepared by Ecology. Without such a report, it is difficult to establish that a successful closure has taken place.
2. The scope of the lagoon closure and cleanup did not address the possibility of contamination at other points on the site property, despite the documented spill (3/5/86), overflows and runoff. Documentation has not been presented to the EPA to establish that no contamination exists in areas other than the rinsate lagoons.
3. Certain compounds, including 2-butanone (MEK), were not analyzed for in the closure project. The EPA feels that the possibility exists for the presence of this and possibly other TCL compounds at this site.

We hope this response has adequately addressed your questions and concerns. If you have further questions or comments, please feel free to contact us again.

Sincerely,



William J. Glasser, R.S., M.P.H.
Environmental Protection Specialist
Superfund Response & Investigations Section

cc: Neil Thompson, Superfund
Lin Robinson, Solid Waste Utility, City of Seattle



ecology and environment, inc.

101 YESLER WAY, SEATTLE, WASHINGTON, 98104, TEL. 206/624-9537

International Specialists in the Environment

July 2, 1987

Mr. Rod Widing, Sr.
Widing Transportation, Inc.
P. O. Box 3446
Midway, WA 98032

Dear Mr. Widing:

Per your conversation with Gloria Skinner of our office on July 2, 1987, this letter is to confirm our visit to Widing Transportation, located at 24300 Pacific Highway South, on Monday, July 13, 1987 at 10:00 A.M.

Widing Transportation, Inc. has been identified by the United States Environmental Protection Agency (EPA) Region X and Washington State Department of Ecology from preliminary assessment screening as requiring additional information to accurately profile the nature and extent of past waste disposal activity at the site.

The EPA has been given authority under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986 (42 U.S.C. § 6901 et seq.; Sec. 104), to gain access to sites where hazardous substances may have been generated, stored, treated, disposed, or transported. Ecology and Environment, Inc. (E&E) is an authorized contractor of EPA (Contract No. 68-01-7347) (CERCLA; Sec. 115) and is acting on their behalf as field investigators.

A site inspection is performed to determine the impact or potential impact on the environment of any hazardous substances which may exist in an uncontrolled manner at your facility. A site inspection is subsequently reflected in a report (EPA Form #2070-13), a copy of which is enclosed for your information. The site inspection report provides a basis for determining if any further action is required at the site.

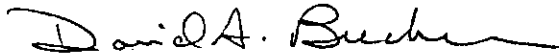
A checklist is also provided. The inspection process can be expedited if you will provide the information outlined in the checklist.

Your company may assert a claim of confidentiality for any information entitled to protection under 40 CFR, Part 2, Subpart B by designating data you believe is entitled to such protection and submitting that data separately.

Page 2
Mr. Rod Widing, Sr.
July 2, 1987

I expect that a representative of the Washington State Department of Ecology will participate in the inspection. If you have any questions regarding our site visit, please contact Gloria Skinner or me at (206) 624-9537. Please contact Deborah Flood, USEPA, at (206) 442-2722 if you have questions regarding the purpose for this visit.

Sincerely yours,



David A. Buecker
Field Investigation Team Manager

DAB:ilt

ENCLOSURES

CC: Bill Glasser, HWD-SM, USEPA, Region X
John Osborn, ESD-PO, USEPA, Region X
Jeffrey Villnow, PM, E&E, Seattle
Thomas Tobin, E&E, Seattle
Gloria Skinner, SM, E&E, Seattle

Seattle
Engineering Department



Gary Zarker, Director of Engineering
Charles Royer, Mayor

May 29, 1987

MIDWAY LANDFILL REMEDIAL INVESTIGATION
GROUNDWATER MONITORING WELL DATA

Second Sampling Round
January 1987

Attached are results of groundwater testing performed by the City of Seattle in January 1987. A total of eleven wells were sampled by Seattle's consultants, including wells BH-8, MW-1, 4, 5, 7, 10, 12, 13, 15, and 17 (please see attached map). These wells range in depth from about 50 feet below the ground surface at MW-5 to 260 feet in depth at MW-15B. All but three of these wells are greater than 100 feet in depth.

The well samples were tested for the general physical and chemical qualities of the water, as well as hazardous substances established by the Environmental Protection Agency as "priority pollutants." This list includes 129 organic compounds and 17 dissolved metals. Only those compounds detected during the analysis are shown on the data sheets. These data have passed their quality assurance review, which assures scientific accuracy.

Although this is the second round of testing, some wells were only tested for the first time during this round. This is because the City and its consultants are still in the process of installing new wells. Thus, more wells become available for testing with each new sampling round. Sampling rounds will be conducted until all wells have been tested four times.

Copies of the test results are available at the Midway Information Office, 25030 Military Road South in Kent, and at the 9th Floor Information Counter, Seattle Municipal Building, 600 Fourth Avenue in Seattle. The original data set is also available for review at the Midway Information Office and at the data repositories in the Kent and Des Moines Public Libraries.

Enclosure 5



Widing Transportation, Inc.

Hauling bulk commodities
over North America

TO: Widing Shareholders
FROM: Peter J. Pedone Sr.
SUBJECT: Closure Costs, Surface Impoundments, Midway
DATE: March 26, 1987

=====

Depicted below are the actual costs of closing the surface impoundments at the Midway Terminal. Closure was completed in late November, 1986. Please note that the closure expenses are listed by activity, such as: excavation, loading, transportation and disposal fees. Each activity lists the total costs incurred. The last column provides a "running" or cumulative total.

ACTIVITY	TOTAL COST(S)	CUMULATIVE TOTAL
1. EXCAVATION, LOADING, TRANSPORTATION AND DISPOSAL OF CONTAMINATED SOIL		
* Excavation	\$ 6,633.78	\$ 6,633.78
* Loading	13,090.00	19,723.78
* Materials Used (Excavation & Loading)	180.00	19,903.78
* Sales Tax (Excavation & Loading)	1,299.94	21,203.72
* Transportation (44 loads @ \$950.00/load)	41,800.00	63,003.72
* Disposal Fees (Chem-Security, Arlington, OR)	139,977.98	202,981.70

Enclosure 3

ACTIVITY	TOTAL COST(S)	CUMULATIVE TOTAL
2. DEMOLITION, EXCAVATION, CLEANING, TRANSPORTATION AND DISPOSAL OF CONCRETE FROM CONCRETE IMPOUNDMENTS		
* Demolition (wrecker ball rental)	\$ 210.41	\$ 203,192.11
* Cleaning (local labor plus sandblasting)	911.00	204,103.11
* Excavation	(Incorporated into Excavating Fees identified under Activity #1, above.)	
* Transportation and Disposal of Cleaned Concrete at Coal Creek Landfill, Seattle	3,836.52	207,939.63
3. CHEMICAL ANALYSIS OF SOIL(S)		
* Priority Pollutant Test	1,355.00	209,294.63
* Phthalate Scans (Southern Pond) 6 @ \$160.00/each	960.00	210,254.63
* Phthalate Scans (Northern Pond)	1,750.00	212,004.63
* Phthalate Scan (Concrete Pond)	500.00	212,504.63
* Soil Sampling Service (Rittenhouse/Zeman)	6,305.42	218,810.05
4. FILL DIRT - TO FILL SOUTHERN POND - V&J TRUCKING		
* 900 cubic yards	2,767.50	221,577.55
5. CONSULTING FEES - POND CLOSURES PLUS OTHER ENVIRONMENTAL MATTERS		
* Peter J. Pedone Sr.	18,000.00	239,577.55

ACTIVITY	TOTAL COST(\$)	CUMULATIVE TOTAL
6. DISPOSAL OF CHEMICALS		
* Truck retain, placed in drums and disposed at Chempro	\$ 920.00	\$ 240,497.55
7. CITY PERMITS - CITY OF KENT		
* Environmental Checklist	100.00 (non-refundable)	240,597.55
* Fill and Grade Permit (\$500.00 of permit fee is for bonding and will be refunded)	795.00 -500.00 295.00	240,892.55
8. GROUND WATER SAMPLES		
* Water Quality Tests	1,035.84	241,928.39
* Chemical Analysis of Water - 2 tests @ \$300.00/each	600.00	242,528.39
9. FINAL DIRT-FILLING COSTS (OVER PONDS)	976.00	243,504.39
10. CLASSIFIED ADS (SALE OF FILTER)	80.00	243,584.39
TOTAL COST OF CLEAN-UP		\$ 243,584.39 =====

PETER J. PEDONE SR.
2598 Madrona Point Lane
Steilacoom, WA 98388
(206) 581-4623

MAR 5 1987

March 2, 1987

Department of Ecology
Hazardous Waste Section
ATTN: Annual Reports R/6
MS PV-11
Olympia, WA 98504-8711

To Whom It May Concern:

Widing Transportation, an Oregon-based corporation, went out of business in December, 1985. Mr. Glenn Widing, proprietor, passed away in August, 1986.

The enclosed report would normally not be submitted, since Widing was a transporter. However, the wastes identified on the enclosed report were generated (on a one-time basis) in cleaning-up and closing-out the surface impoundments located at the terminal site in Midway, Washington. The closing-out of the site was accomplished under the supervision of Mr. John Conroy and Mr. Ron Devitt, Northwest Regional Office DOE. The closure was completed in November, 1986.

The undersigned served as Director, Regulatory Compliance, for Widing from March, 1981, to the time of Mr. Widing's death. Letters authorizing me to sign for the company are on file at the Northwest Region. If there are any questions concerning this report, please call and leave a message at the number listed above.

For your additional information, both Widing terminal sites located in Washington (described below) should be delisted and the EPA # removed from your records:

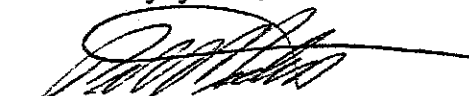
Site & Address
Midway Terminal
24300 Pacific Highway South
Midway, WA 98032

EPA #
WAD 067156489

Pasco Terminal
1204 East Hagerman
Pasco, WA 99301

ORD 004872404
(Corporation Trans-
porter Number)

Sincerely yours,



Peter J. Pedone Sr.
Director, Regulatory Compliance
for WIDING TRANSPORTATION, INC.

PJP:ns

Enclosure

RECEIVED
JUN 07 1987

DEPARTMENT OF ECOLOGY
NORTHWEST REGION

BEATTY RINKER
Director



file
D.W.
21

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

4350 - 150th Ave. N.E. • Redmond Washington 98052-5301 • (206) 885-1900

MEMORANDUM

August 22, 1986

TO: Files & John Conroy *JHC*
FROM: Ron Devitt *Red*
SUBJECT: Widening Closure Plan - Midway

On 8-14-86, I met Pete Pedone and Rod Widening of Widening Transportation. I viewed the site, progress toward closure and took photographs.

The south pond has been filled with clay material from the Renton transfer excavation. Since the two areas are not closer a fee is attached, but not unreasonable. The grading permit has been issued by the City of Kent.

The concrete cells have been sand blasted. The grit and dust has been designated for disposal at Arlington. The concrete chunks are going to the Coal Creek demolition site.

There are two piles of material scheduled for Arlington disposal. The paperwork for the disposal operation is starting to accumulate.

Sampling to verify the cleanliness of the South pond was done by the lab. The sampling effort cost \$600. Rather to incur that cost for the North pond, Widening and Pedone would rather do the work themselves. To verify that the sampling site and sample is not biased, I will witness the sampling on 8-15-86. This will save the cost of professional sampling. The North pond has been excavated to hard pan and we anticipate data similar to the South pond. As we agreed the parameters required will be the phthalate scan.

Assuming the results are not "dangerous", they will be seeking approval for filling the North pond. I recommend they be given that authority as soon as the data indicates that the sample is low level.

After discussing the next step, they are going to dispose of the concrete (cleared by Wally Swofford) to the demolition site, while continuing to haul the designated material to Arlington.

They are going to do further excavation on the vertical walls of the excavation that formerly was occupied by the concrete cells. This material will also be taken to Arlington.

Enclosure 1

Encl. 1

Files & John Conroy
August 22, 1986
Page 2

After this excavation is complete sampling will be done in the vicinity of the concrete cells. The details have not been discussed yet, but will be similar to testing on the South and North ponds.

The final testing will involve groundwater grab samples upstream and downstream in groundwater flow. Dates for this activity have not been set.

RD:CD



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

4350 - 150th Ave NE • Redmond, Washington 98052-5301 • (206) 885-1400

MEMORANDUM

August 6, 1986

TO: Dan Swenson, Hazardous Waste Cleanup
FROM: Ron Devitt, Inspector NWRO *Red*
SUBJECT: Closure Plan for Widing Transportation

Our recent telephone conversation (8-4-86) concerning contaminants generated by Widing Transportation, Midway Site indicated a meeting of headquarters and regional staff might be of mutual benefit. However, conflicting schedules prohibit such a meeting in the near future.

As an alternative, this correspondence will describe chronologically the activities that have occurred on site and anticipated requirements to complete the ongoing closure of the Widing site. Hopefully after reviewing the enclosed information you will express your concerns so they can be incorporated into the final closure.

January 17, 1986	Memo from me describing treatment operation. Effluent was being discharged to Metro sanitary system.
March 14, 1986	Dirt ponds empty. Sludge and dirt excavated from south pond.
March 12, 1986	Sellick NWRO met with neighbor of Widing, recorded various complaints.
April 17, 1986	VOA data from sludge
April 30, 1986	Response to their April 23, 1986 letter describing anticipated plan.
May 2, 1986	Authority to leave sludge at Kent Highlands.
May 31, 1986	Highland assets sold to Arrow.
June 20, 1986	Truck washing operations had ceased. Identification of phthalates in "dangerous" concentrations at bottom of south pond. Materials scheduled for disposal at Arlington, Oregon.

Closure Plan for Widening Transportation

August 6, 1986

Page 2

July 1, 1986	Data indicate dangerous concentrations of phthalates have not penetrated hard-pan more than 6".
July 1, 1986	Permits are filed with city of Kent for filling site excavations.
July 30, 1986	450 yds ³ of material has gone to Oregon. Concrete cells are being sandblasted; sludge and sandblast being disposed of at Arlington too. Odor complaints on sludge loading.

Of the chemical analysis of sludges and soils excavated from the site, several parameters caused concern. The volatile nature of the shallow substrate were less concerning with time. That is volatilization occurred resulting in a material that was acceptable to local landfill guidelines.

The contaminate that had penetrated to hard-pan was various forms of phthalate. Bis (2 ethylhexyl phthalate) was found at 11.1 mg/g at 18" at this depth Di-N-butylphthalate was 1.10 mg/gr. Other phthalates (butyl benzyl, Di-N-octyl, diethyl, and dimethyl) were detected.

The apparent rapid decrease in concentrations with depth indicates the hard pan functions as an effective seal, protecting ground water.

Because the phthalates are the deepest penetrating contaminate, this parameter will be used to determine the appropriate depth of excavation of substrate under the north pond.

In summary, the soil under the south pond has been excavated down to the hard pan where phthalate levels are low. Similar excavation will be conducted on the north pond. These two areas will be filled with "clean" dirt. Soil samples will be taken under the concrete cells to verify that no dangerous materials are present. The final anticipated requirement for closure will be to sample ground water in the immediate vicinity of the ponds. If the parameters for analyses are of a similar magnitude upstream and downstream of the ponds, we will accept that data as a good indication that ground water contamination did not result from this operation.

If your people have concerns about this anticipated course of action or would recommend additional requirements for final closure please advise us.

RD:sc

cc: John Conroy

ANDREA BEATTY RINKER
Director



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

4350 - 150th Ave NE • Redmond Washington 98052-5301 • (206) 885-1900

MEMORANDUM

July 8, 1986

TO: John Conroy
FROM: Ron Devitt *Rcd*
SUBJECT: Widing Transportation, Inc. Closure Plan

On June 27, 1986, I met with Pete Pedone of Widing. He hand-carried the most recent test results of the south pond bottom sampling.

As per his sketch, samples were taken at 6", 12" & 18" by professionals. There is a rapid drop off of phthalates with depth. And it appears that this native soil at the pond bottom did act as an effective sealer for these materials.

Based on this data and the 100 ppm criteria you and I discussed at lunch time on June 30, 1986, I gave him verbal approval for gearing up on filling the pond. He will verify the O.K. with you on July 7, 1986.

I also asked him to submit the data to Wally Swofford with King County. He said he was keeping Wally informed.

Widing is looking for a source of clean fill to fill this south pond. I mentioned the Renton Transfer Pipe Project as a possibility and for the cover (cap) material, Industrial Mineral Products (IMP) in Ravensdale. I know that IMP has been used at Hobart Landfill for cover. The material gets wet and hard to work in the rain, so I recommended top soil over the cap material.

The 250-300 yards of material they have stockpiled is designated for Arlington, Oregon at \$122/ton, (for over 250 tons of material) plus the cost of transportation; this turns out to be a very expensive disposal problem. The material weighs a little less than a ton/yard.

For this reason I have encouraged them to attempt to hit the elevation closer on the north pond. It seems that the phthalates are at the very bottom. Taking into account the data from the south pond, they may be able to cut a finer line and avoid excess quantities of "Dangerous" material.

They are still examining possible alternatives to Arlington disposal.

BR

now say all will go to Arlington. Rcd
7-8-86



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

4350 - 150th Ave. N.E. • Redmond, Washington 98052-5301 • (206) 885-1900

MEMORANDUM

June 20, 1986

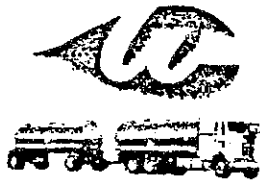
TO: Grechen Schreiber - Rowsix
FROM: Ron Devitt - NWRO *Red*
SUBJECT: Widing Transport - Midway Site

Things change; the hauling operations have ceased this month and from now on no washing or rinsing of tanks will continue at this site.

The closure plan will proceed until completion. The current status is that the concentrations of pthalates at the sludge - soil interface at the bottom of pond #1 classifies out as dangerous waste. This material is scheduled to be removed and disposed to Arlington Oregon. Pending data from core samples in the vicinity are anticipated to defined the depth of contamination by this material. The data will determine the ultimate quantity of material from this pond that will be disposed of in this manner.

A similar situation is anticipated when analyses are implemented in the second pond. The three concrete cells will be dismantled and the excavations filled in. Since these are assumed to have not leaked, we do not anticipate contamination of the soil beneath these cells.

RD:CD



Widing Transportation, Inc.

Hauling bulk commodities
over North America

July 1, 1986

Mr. Ronald C. Devitt
District Inspector, Environmental Quality
Department of Ecology
4350 - 150th Avenue NE
Redmond, WA 98052-5301

Re: DOE letter, dated April 30, 1986, concerning
closure of Midway site.

Dear Mr. Devitt:

In consonance with referred letter, closure practices continue as outlined by the DOE. Attached hereto is a copy of AM Test results of samples taken below the hard-pan or glacial till of the Southern-most pond. Altogether, six samples were taken by Rittenhouse-Feman & Associates and taken directly to AM Test for analysis. The six samples were taken as indicated on the enclosed sketch. Three samples were taken on both the West and East ends of the impoundment. The samples were taken at depths of 6", 12" and 18". As you will note, the totals are well below the level considered dangerous by DOE. Accordingly, we request your permission to fill the Southern-most pond with clean fill that we hope to obtain from sources provided by Mr. Wally Swofford of the Seattle/King County Health Department. We have kept Mr. Swofford advised of the progress on these closure procedures, and he is assisting us by putting us in contact with clean fill sources. After your permission is granted to fill, then we will immediately start excavation and analysis procedures on the Northern-most pond.

Sincerely,

Peter J. Pedone
Regulatory Compliance to
Widing Transportation, Inc.

PJP:ns

cc: Mr. Wally Swofford



4900 9TH AVENUE N.W., • SEATTLE, WASHINGTON 98107 • 206/783-4700

ANALYSIS REPORT

CLIENT: Widing Transportation

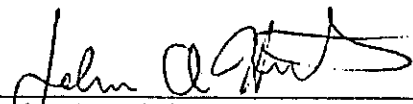
DATE RECEIVED: 6/3/86

REPORT TO: Rod Widing
P.O. Box 3446
Midway, WA 98032

DATE REPORTED: 6/26/86

Client Identification	E-6	E-12	E-18	W-6	W-12	W-18	Detection Limit (µg/g)
AM TEST Identification	107609	107610	107611	107612	107613	107614	
Bis (2-ethylhexyl) phthalate (µg/g)	16.4	14.2	0.46	32.9	41.1	11.1	0.13
Butyl Benzylphthalate (µg/g)	0.24	ND	ND	0.18	0.27	ND	0.13
Di-N-butylphthalate (µg/g)	0.95	3.88	0.20	3.11	4.30	1.10	0.10
Di-N-octylphthalate (µg/g)	ND	ND	ND	ND	ND	ND	0.10
Diethylphthalate (µg/g)	ND	ND	ND	ND	ND	ND	1.10
nethylphthalate (µg/g)	ND	ND	ND	ND	ND	ND	0.08

REPORTED BY

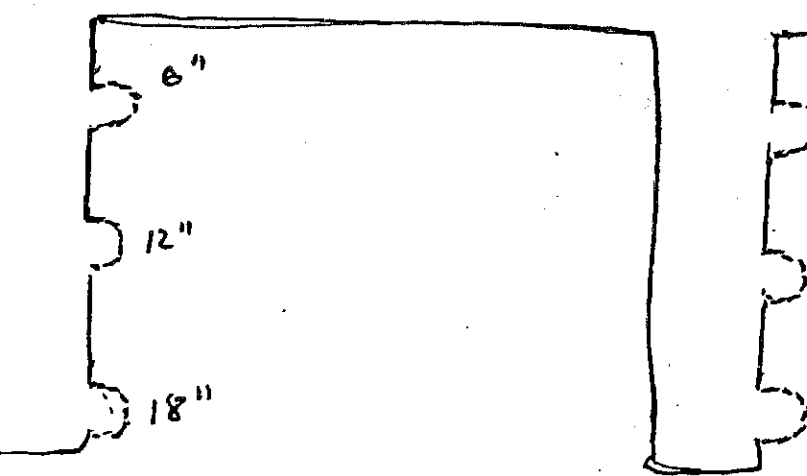

John A. Hicks

JAH/pb

ALL READINGS MICROGRAMS/GRAM
OR
PARTS/MILLION

NORTH

Uttermost - most SURFACE IMPROVEMENT



EAST	E-6	E-12	E
Bis(2-ethylhexyl)phthalate	6.4	14.2	0.
Butyl benzylphthalate	0.24	ND	A
Di-N-Butylphthalate	0.95	3.88	0.
Di-N-Octylphthalate	ND	ND	N
Diethylphthalate	ND	ND	N
Dimethylphthalate	ND	ND	NE

WEST	W-6	W-12	W-1.
Bis(2-ethylhexyl)phthalate	32.9	41.1	11.1
Butyl benzylphthalate	0.18	0.27	ND
Di-N-Butylphthalate	3.11	4.30	1.10
Di-N-Octylphthalate	ND	ND	ND
Diethylphthalate	ND	ND	ND
Dimethylphthalate	ND	ND	ND



Sent over 5520 6-18-86

5
22

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

4350 - 150th Ave. N.E. • Redmond, Washington 98052-5301 • (206) 885-1900

MEMORANDUM

June 18, 1986

TO: Bob Nichols
FROM: Joan Thomas
SUBJECT: Widing Update

Widing's transportation business and equipment have been sold to Arrow Transport. Hauling, truck washing, and rinsing at the Widing facility will cease in June. Closure of the site will proceed to completion. Ron Devitt of the Northwest Regional Office (NWRO) is overseeing this closure. It requires that all lagoons, ponds, holding tanks, and remaining sludge be properly cleaned up.

Current status: Concentrations of pthalates at the sludge soil interface at the bottom of Pond No. 1 classify this material as dangerous waste. It is scheduled to be removed and taken to Arlington, Oregon, for disposal. Core samples will define the depth of contamination and ultimate quantity of material to be disposed of in this manner. A similar situation is anticipated in the second pond when analysis is complete. Three concrete cells will be dismantled and the excavations filled in. Soil contamination beneath these cells is not anticipated.

Samples taken from the Midway Land Fill are being analyzed to determine whether Widing chemicals are present. This testing is being done by Laurence Ashley of the NWRO. The Hazardous Waste Cleanup Program is including Widing in their Midway Landfill public information program. NWRO is keeping Gretchen Schreiber informed.

JKT:dr

cc: Marc Horton
Ron Devitt, NWRO
Laurence Ashley, NWRO

CHEM-SECURITY SYSTEMS, INC.
SUBJECT:

DISPOSAL REQUEST

REFERENCE: F26015-BEL

WASTE STREAM NAME: CONTAMINATED SOIL

PHYSICAL STATE: SOLID

EPA WASTE CODE: D004 D007 D008

GENERATOR NAME: WIDING TRANSPORTATION INC

EPA GENERATOR ID: WAD067156489

FACILITY ADDRESS

MAILING ADDRESS

24300 PACIFIC HWY S
KENT WA 98031

GENERATOR CONTACT PERSON NAME: PETER J PEDONE

TELEPHONE NO. 206/824-3708

Review and approval of the subject waste stream is requested for disposal at the Chem-Security Arlington site. The complete waste stream description is detailed on the attached waste profile sheet and is summarized below.

DESCRIPTION
CHEMICAL COMPOSITION

PROCESS/OPERATION
GENERATING WASTE

SOIL (DIRT) 90%
DIRT SLUDGE 10%

SOIL FROM SURFACE IMPOUNDMENT-
CLEANING OUT OF POUND BOTTOM

WASTE VOLUME REQUESTED FOR DISPOSAL: ANNUAL= 300.00 CUBIC YARDS
Characteristics, Chem-Security proposes to Dispose of the
Waste By (Describe Treatment/Disposal Procedure)

Hazardous & Solid Waste Division
Dept. of Environmental Quality

DISPOSAL : LANDFILL
LANDFILL BY PROCEDURE 4
NO FREE LIQUIDS PERMITTED

RECEIVED
JUL 28 1986

C.C. CSSI, Arlington, OR
C.C. CSSI, Bellevue, WA
CSSI, Portland, OR
Generator

SUBMITTED BY: RICHARD D. ZWEIG

[Signature]
7/22/86
Date

FOR OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

THE SUBJECT WASTE STREAM HAS BEEN REVIEWED FOR DISPOSAL AT THE ARLINGTON
SITE AND IS HEREBY:

State of Oregon
Department of Environmental Quality

APPROVED
On 7/25/86
By *[Signature]*
Solid Waste Division
Hazardous Waste Operations

COMMENTS: _____

RE: HW4.10

136

F26015

041

A GENERAL INFORMATION

P.O. # 623

GENERATOR NAME: WIDING TRANSPORTATION, INC.

TRANSPORTER: _____

FACILITY ADDRESS: 24300 PACIFIC HWY. SO.

TRANSPORTER PHONE: _____

KENT, WA 98031GENERATOR USEPA I.D. W.A.D. 067156489

GENERATOR STATE I.D. _____

AS ABOVETECHNICAL CONTACT: PETER J. PEDONETITLE: CONSULTANTPHONE: (206) 824-3708NAME OF WASTE: CONTAMINATED SOILPROCESS GENERATING WASTE: SOIL FROM SURFACE IMPROVEMENT - CLEANING-OUT OF POUND
BATTERY

B PHYSICAL CHARACTERISTICS OF WASTE

COLOR

BROWNODOR ☒ NONE ☐ MILD☐ STRONG

DESCRIBE _____

PHYSICAL STATE @ 70°F

☒ SOLID☐ SEMI-SOLID☐ LIQUID☐ POWDER

LAYERS

☐ MULTILAYERED☐ BI-LAYERED☒ SINGLE PHASED

FREE LIQUIDS

☐ YES☒ NO

VOLUME _____ %

pH: ☐ < 2 ☐ 7.1-10 ☒ N/A ☐ > 12.5
☐ 2-4 ☐ 10.1-12.5
☐ 4.1-6.9 ☐ > 12.5
☐ 7 ☐ EXACT _____

SPECIFIC GRAVITY ☐ < .8 ☐ 1.3-1.4
☐ .8-1.0 ☐ 1.5-1.7
☐ 1.1-1.2 ☒ 1.7
☐ EXACT _____

FLASH POINT ☐ < 70°F ☐ > 200°F ☐ CLOSED CUP
☐ 70°F - 100°F ☒ NO FLASH ☐ OPEN CUP
☐ 101°F - 139°F ☐ EXACT _____
☐ 140°F - 200°F

C CHEMICAL COMPOSITION (TOTALS MUST ADD TO 100%)

SOIL (DIRT) 99 %
TRACE SUBSTANCES (SEE
ATTACHED CHEMICAL
ANALYSIS) 1 %
 _____ %
 _____ %
 _____ %
 _____ %
 _____ %
 _____ %
 _____ %

D METALS

☐ TOTAL (PPM) ☒ EPA EXTRACTION PROCEDURE (mg/L) (U/L)
 ARSENIC (As) 13.2 SELENIUM (Se) < 0.20
 BARIUM (Ba) 0 SILVER (Ag) 0.157
 CADMIUM (Cd) < 0.30 COPPER (Cu) 30.
 CHROMIUM (Cr) 50. NICKEL (Ni) 14.
 MERCURY (Hg) 0.06 ZINC (Zn) 23.6
 LEAD (Pb) 19. THALLIUM (Tl) 2.09
 CHROMIUM-HEX (Cr + 6) 53.

E OTHER COMPONENTS - TOTAL (PPM)

CYANIDES < 0.60 PCB'S NONE
 SULFIDES 0 PHENOLICS 19.8

F SHIPPING INFORMATION

D.O.T. HAZARDOUS MATERIAL? ☒ YES ☐ NO
 PROPER SHIPPING NAME: HAZARDOUS WASTE SOLID, N.O.S.
 HAZARD CLASS: ORM-E I.D. NO. NA 9189 R.O. 1
 METHOD OF SHIPMENT: ☐ BULK LIQUID ☒ BULK SOLID
☐ DRUM (TYPE/SIZE) _____
 ANTICIPATED VOLUME: _____ GALS. 300 CUBIC YARDS
 _____ OTHER _____
 PER: ☒ ONE TIME ☐ WEEK ☐ MONTH
☐ QUARTER ☐ YEAR

G HAZARDOUS CHARACTERISTICS

REACTIVITY: ☒ NONE ☐ PYROPHORIC ☐ SHOCK SENSITIVE
☐ EXPLOSIVE ☐ WATER REACTIVE ☐ OTHER _____
 OTHER HAZARDOUS CHARACTERISTICS:
☐ NONE ☐ RADIOACTIVE ☐ ETIOLOGICAL
☐ PESTICIDE MANUFACTURING WASTE ☒ OTHER CARCINOGENIC
 USEPA HAZARDOUS WASTE? ☒ YES ☐ NO
 USEPA HAZARDOUS CODE(S) D008 D004 D007
 STATE HAZARDOUS WASTE? ☒ YES ☐ NO
 STATE CODE(S) D008 D004 D007

H SPECIAL HANDLING INFORMATION DO NOT INGEST OR INHALE DUSTP.O. # 623

RECEIVED

ADDITION _____

FEE ATTACHED _____

I HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS COMPLETE AND ACCURATE AND THAT NO SUSPECTED HAZARDS HAVE BEEN DISCLOSED.
 AUTHORIZED SIGNATURE _____

TITLE

DIRECTOR, REGULATORY
 COMPLIANCE

DATE



CHEM-SECURITY SYSTEMS, INC.
STAR ROUTE, BOX 9
ARLINGTON OR 97812
503/454-2643

SERVICE PROVIDED BY:
ARLINGTON FACILITY

WIDING
24300 PACIFIC HIGHWAY SOUTH
KENT WA 98031

INVOICE

THIS IS AN INVOICE FOR CURRENT CHARGES.
PLEASE PAY AMOUNT INDICATED BELOW.

TERMS

NET 30 DAYS AFTER
INVOICE DATE

ALL PAST DUE AMOUNTS WILL BEAR IN-
TEREST AT TWO PERCENT PER MONTH OR
THE MAXIMUM RATE ALLOWED BY LAW,
WHICHEVER IS LESS.

CUSTOMER ACCOUNT NUMBER

450 450 4014122

INVOICE NUMBER

3296

INVOICE DATE

07/31/86

PAGE

1

860731

SERVICE DATE	REFERENCE NO./DESC	UNIT	QUANTITY	RATE	AMOUNT
07/28/86	0000080390-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX	CONTAMINATED SOIL TONS *****	23.41 <i>ton</i>	BEL-F26015 112.0000	2,621.92 234.10 <i>tax</i> SUBTOTAL 2,856.02 *
07/28/86	0000080391-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX	CONTAMINATED SOIL TONS *****	26.87	BEL-F26015 112.0000	3,009.44 268.70 SUBTOTAL 3,278.14 *
07/28/86	0000080392-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX	CONTAMINATED SOIL TONS *****	25.70	BEL-F26015 112.0000	2,878.40 257.00 SUBTOTAL 3,135.40 *
07/28/86	0000080393-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX	CONTAMINATED SOIL TONS *****	24.52	BEL-F26015 112.0000	2,756.24 245.00 SUBTOTAL 3,001.24 *
07/28/86	0000080394-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX	CONTAMINATED SOIL TONS *****	24.93	BEL-F26015 112.0000	2,792.10 249.30 SUBTOTAL 3,041.40 *

*total tons
transported to
ARCC: 903.88*

SHIP TO
ADDRESS

STAR ROUTE
ARLINGTON

OR 97812

PLEASE PAY
THIS AMOUNT

CUSTOMER

Chemical Waste
Management
INC

CHEM-SECURITY SYSTEMS, INC.
STAR ROUTE, F 19
ARLINGTON OR 97812
503/454-2643

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ARLINGTON FACILITY

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TEREST AT TWO PERCENT PER MONTH OR
THE MAXIMUM RATE ALLOWED BY LAW
WHICHEVER IS LESS.

CUSTOMER ACCOUNT NUMBER		
450	450	4014122
INVOICE NUMBER	INVOICE DATE	PAGE
3296	07/31/86	2

860731

SERVICE DATE	REFERENCE NO./DESC	UNIT	QUANTITY	RATE	AMOUNT
7/28/86	0000080395-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX	CONTAMINATED SOIL IONS *****	25.84	BEL-F26015 112.0000	2,894.08 258.40 SUBTOTAL 3,152.48 *

151.27

Tons

TO
RESS

STAR ROUTE, BOX 9
ARLINGTON

OR 97812

PLEASE PAY
THIS AMOUNT

18,454.94**

FOR YOUR BUSINESS!

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WHICHEVER IS LESS.

CUSTOMER ACCOUNT NUMBER

450	450	4014122
INVOICE NUMBER	INVOICE DATE	PAGE
3321	07/31/86	1

860805

SERVICE DATE	REFERENCE NO./DESC	UNIT	QUANTITY	RATE	AMOUNT
07/29/86	0000080410-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	24.26	BEL-F26015 112.0000	2,717.12 242.60 SUBTOTAL 2,959.72 *
07/29/86	0000080411-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	27.30	BEL-F26015 112.0000	3,057.60 237.00 SUBTOTAL 3,294.60 *
07/29/86	0000080412-01 DISPOSAL SERVICES OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	26.66	BEL-F26015 112.0000	2,985.92 268.60 SUBTOTAL 3,252.52 *
07/29/86	0000080413-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	26.22	BEL-F26015 112.0000	2,936.64 262.20 SUBTOTAL 3,198.84 *
07/29/86	0000080414-01 DISPOSAL SERVICES <u>NIGHT SERVICE</u> PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	26.71	BEL-F26015 112.0000	2,991.52 225.00 267.10 SUBTOTAL 3,483.62 *

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WHICHEVER IS LESS.

CUSTOMER ACCOUNT NUMBER

450 450 4014122

INVOICE NUMBER INVOICE DATE PAGE

3321 07/31/86 2

860805

SERVICE DATE	REFERENCE NO./DESC	UNIT	QUANTITY	RATE	AMOUNT
07/29/86	0000080415-01 DISPOSAL SERVICES NIGHT SERVICE PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	28.58	BEL-F26015 112.0000	2,976.96 <u>225.00</u> 265.80
				SUBTOTAL	3,467.76 *
07/30/86	0000080434-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	27.06	BEL-F26015 112.0000	3,030.72 270.60
				SUBTOTAL	3,301.32 *
07/30/86	0000080437-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	23.75	BEL-F26015 112.0000	2,660.00 237.50
				SUBTOTAL	2,897.50 *
07/30/86	0000080438-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	24.53	BEL-F26015 112.0000	2,747.36 245.30
				SUBTOTAL	2,992.66 *

233.09
ton

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28,848.54**

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CUSTOMER ACCOUNT NUMBER

450 450 4014122

INVOICE NUMBER	INVOICE DATE	PAGE
3357	08/13/86	1

860813

SERVICE DATE	REFERENCE NO./DESC	UNIT	QUANTITY	RATE	AMOUNT
06/26/86	SST0003630-01 WASTE APPROVAL FEE PO# OR CONTRACT# 623		1.00	BEL-F26015	200.00
				SUBTOTAL	200.00 *
08/11/86	0000080644-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX	CONTAMINATED SOIL TONS *****	21.99	BEL-F26015 112.0000	2,462.88 219.90
				SUBTOTAL	2,682.78 *
08/11/86	0000080646-01 DISPOSAL SERVICES OREGON HAZD. TAX	CONTAMINATED SOIL TONS *****	22.20	BEL-F26015 112.0000	2,486.40 222.00
				SUBTOTAL	2,708.40 *
08/11/86	0000080647-01 DISPOSAL SERVICES OREGON HAZD. TAX	CONTAMINATED SOIL TONS *****	26.25	BEL-F26015 112.0000	2,940.00 262.50
				SUBTOTAL	3,202.50 *
08/11/86	0000080648-01 DISPOSAL SERVICES OREGON HAZD. TAX	CONTAMINATED SOIL TONS *****	26.75	BEL-F26015 112.0000	2,996.00 267.50
				SUBTOTAL	3,263.50 *
08/11/86	0000080649-01 DISPOSAL SERVICES OREGON HAZD. TAX	CONTAMINATED SOIL TONS *****	26.21	BEL-F26015 112.0000	2,935.52 262.10
				SUBTOTAL	3,197.62 *

123.40
Tons

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15,254.80**

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INVOICE DATE

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TEREST AT TWO PERCENT PER MONTH OR
THE MAXIMUM RATE ALLOWED BY LAW
WHICHEVER IS LESS.

CUSTOMER ACCOUNT NUMBER

450 450 4014122

INVOICE NUMBER

3380

INVOICE DATE

08/13/86

PAGE

1

860815

SERVICE DATE	REFERENCE NO./DESC	UNIT	QUANTITY	RATE	AMOUNT
08/12/86	0000080666-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX	CONTAMINATED SOIL TONS	21.25	BEL-F26015 112.0000	2,380.00 212.50 SUBTOTAL 2,592.50 *
08/12/86	0000080668-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX	CONTAMINATED SOIL TONS	26.15	BEL-F26015 112.0000	2,928.80 261.50 SUBTOTAL 3,190.30 *
08/12/86	0000080674-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX	CONTAMINATED SOIL TONS	22.03	BEL-F26015 112.0000	2,467.36 220.30 SUBTOTAL 2,687.66 *
08/12/86	0000080675-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX	CONTAMINATED SOIL TONS	27.38	BEL-F26015 112.0000	3,066.56 273.80 SUBTOTAL 3,340.36 *
08/12/86	0000080676-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX	CONTAMINATED SOIL TONS	26.53	BEL-F26015 112.0000	2,971.36 265.30 SUBTOTAL 3,236.66 *

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503/454-2643

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KENT WA 98031

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TERMS
NET 30 DAYS AFTER
INVOICE DATE

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CUSTOMER ACCOUNT NUMBER

451 450 4014122

INVOICE NUMBER	INVOICE DATE	PAGE
3330	08/13/86	2

860815

SERVICE DATE	REFERENCE NO./DESC	UNIT	QUANTITY	RATE	AMOUNT
08/13/86	0000080709-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	21.06	BEL-F26015 112.0000	2,358.72 210.60 SUBTOTAL 2,569.32 *
08/13/86	0000080710-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	22.17	BEL-F26015 112.0000	2,483.04 221.70 SUBTOTAL 2,704.74 *
08/13/86	0000080711-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	26.17	BEL-F26015 112.0000	2,931.04 261.70 SUBTOTAL 3,192.74 *
08/13/86	0000080713-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	25.92	BEL-F26015 112.0000	2,903.04 259.20 SUBTOTAL 3,162.24 *
08/13/86	0000080714-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	26.57	BEL-F26015 112.0000	2,975.84 265.70 SUBTOTAL 3,241.54 *

245.23
Tonn

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ARLINGTON OR 97812

PLEASE PAY
THIS AMOUNT

29,018.06**

THANK YOU FOR YOUR BUSINESS!

ORIGINAL INVOICE



CHEM-SECURITY SYSTEMS, INC.
STAR ROUTE, BOX 9
ARLINGTON OR 97812
503/454-2643

SERVICE PROVIDED BY:
ARLINGTON FACILITY

WIDING
24300 PACIFIC HIGHWAY SOUTH
KENT WA 98031

INVOICE

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TERMS

NET 30 DAYS AFTER
INVOICE DATE

ALL PAST DUE AMOUNTS WILL BEAR IN-
TEREST AT TWO PERCENT PER MONTH OR
THE MAXIMUM RATE ALLOWED BY LAW,
WHICHEVER IS LESS.

CUSTOMER ACCOUNT NUMBER

450 450 4014122

INVOICE NUMBER	INVOICE DATE	PAGE
3406	08/15/86	1

860819

SERVICE DATE	REFERENCE NO./DESC	UNIT	QUANTITY	RATE	AMOUNT
08/15/86	0000080793-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX	CONTAMINATED SOIL TONS *****	21.65	BEL-F26015 112.0000	2,424.80 216.50 SUBTOTAL 2,641.30 *
08/15/86	0000080797-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX	CONTAMINATED SOIL TONS *****	23.96	BEL-F26015 112.0000	2,683.52 230.60 SUBTOTAL 2,923.12 *
08/15/86	0000080798-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX	CONTAMINATED SOIL TONS *****	23.45	BEL-F26015 112.0000	2,626.40 234.50 SUBTOTAL 2,860.90 *
08/15/86	0000080801-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX	CONTAMINATED SOIL TONS *****	26.16	BEL-F26015 112.0000	2,929.92 261.60 SUBTOTAL 3,191.52 *
08/15/86	0000080803-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX	CONTAMINATED SOIL TONS *****	26.07	BEL-F26015 112.0000	2,919.84 260.70 SUBTOTAL 3,180.54 *

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ARLINGTON OR 97812

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CONTINUED



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STAR ROUTE, BOX 9
ARLINGTON OR 97812
503/454-2643

SERVICE PROVIDED BY:
ARLINGTON FACILITY

WIDING
24300 PACIFIC HIGHWAY SOUTH
KENT WA 98031

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TERMS

NET 30 DAYS AFTER
INVOICE DATE

ALL PAST DUE AMOUNTS WILL BEAR IN
TEREST AT TWO PERCENT PER MONTH OR
THE MAXIMUM RATE ALLOWED BY LAW,
WHICHEVER IS LESS.

CUSTOMER ACCOUNT NUMBER

450 450 4014122

INVOICE NUMBER

3406

INVOICE DATE

08/15/86

PAGE

2

860819

SERVICE DATE	REFERENCE NO./DESC	UNIT	QUANTITY	RATE	AMOUNT
08/15/86	0000080804-01	CONTAMINATED SOIL		BEL-F26015	
	DISPOSAL SERVICES	TONS	27.22	112.0000	3,048.64
	PO# OR CONTRACT# SPECIAL PROJECT				
	OREGON HAZD. TAX	*****			272.20
				SUBTOTAL	3,320.84 *

148.51
Tonn

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OR 97812

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18,118.22**

ORIGINAL INVOICE



CHEM-SECURITY SYSTEMS, INC.
STAR ROUTE, BOX 0
ARLINGTON CR 97812
503/454-2643

SERVICE PROVIDED BY:
ARLINGTON FACILITY

WIDING
24300 PACIFIC HIGHWAY SOUTH
KENT WA 98031

INVOICE

THIS IS AN INVOICE FOR CURRENT CHARGES
PLEASE PAY AMOUNT INDICATED BELOW
TERMS

NET 30 DAYS AFTER
INVOICE DATE

ALL PAST DUE AMOUNTS WILL BEAR IN
TEREST AT TWO PERCENT PER MONTH OR
THE MAXIMUM RATE ALLOWED BY LAW
WHICHEVER IS LESS

CUSTOMER ACCOUNT NUMBER

451	451	4214122
INVOICE NUMBER	INVOICE DATE	PAGE
3568	09/17/86	1

860917

SERVICE DATE	REFERENCE NO./DESC	UNIT	QUANTITY	RATE	AMOUNT
09/15/86	000081345-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	26.12	BEL-F26015 112.0000	2,925.44 261.22 SUBTOTAL 3,186.64 *
09/15/86	000081347-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	25.96	BEL-F26015 112.0000	2,907.52 259.60 SUBTOTAL 3,167.12 *
09/15/86	000081349-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	25.97	BEL-F26015 112.0000	2,908.64 259.70 SUBTOTAL 3,168.34 *
09/15/86	000081350-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	26.74	BEL-F26015 112.0000	2,994.88 267.40 SUBTOTAL 3,262.28 *

9/19/86
Verified for 104.79 tons
payment this date
Pete Redone

REMIT TO
ADDRESS

STAR ROUTE, BOX 0
ARLINGTON CR 97812

PLEASE PAY
THIS AMOUNT

12,784.30

ORIGINAL INVOICE



CHEM-SECURITY SYSTEMS, INC.
STAR ROUTE, BOX 9
ARLINGTON OR 97012
503/454-2643

SERVICE PROVIDED BY:
ARLINGTON FACILITY

HIDING
24340 PACIFIC HIGHWAY SOUTH
KENT WA 98031

INVOICE

THIS IS AN INVOICE FOR CURRENT CHARGES.
PLEASE PAY AMOUNT INDICATED BELOW.
TERMS

NET 30 DAYS AFTER
INVOICE DATE

ALL PAST DUE AMOUNTS WILL BEAR IN-
TEREST AT TWO PERCENT PER MONTH OR
THE MAXIMUM RATE ALLOWED BY LAW,
WHICHEVER IS LESS.

CUSTOMER ACCOUNT NUMBER

451 450 4014122

INVOICE NUMBER	INVOICE DATE	PAGE
3825	10/20/86	1

SERVICE DATE	REFERENCE NO./DESC	UNIT	QUANTITY	RATE	AMOUNT
10/15/86	970081760-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	25.47	BEL-F26015 112.0000	2,852.64 ✓ 254.70 SUBTOTAL 3,107.34 *
10/15/86	970081764-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	26.53	BEL-F26015 112.0000	2,971.36 ✓ 265.30 SUBTOTAL 3,236.66 *
10/15/86	970081765-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	12.91	BEL-F26015 112.0000	1,221.92 ✓ 109.10 SUBTOTAL 1,331.02 *
10/15/86	970081766-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX *****	CONTAMINATED SOIL TONS	26.77	BEL-F26015 112.0000	2,998.24 ✓ 267.70 SUBTOTAL 3,265.94 *

89.68 tons

Chem-Security:

*Per instructions received from Marcia Charlton, we
are under-paying this invoice by \$225.00 to compensate
for the \$225.00 over-charge on invoice #3321, dated 7/31/86.
Please contact me direct (206) 824-3708 if there is some
question on this matter. Thanks, Rita Redone*

REMIT TO
ADDRESS

STAR ROUTE, BOX 9
ARLINGTON OR 97012

PLEASE PAY
THIS AMOUNT

12,940.94 ✓



Chemical Waste
Management
Inc.

CHEM-SECURITY SYSTEMS, INC.
STAR ROUTE, BOX 9
ARLINGTON OR 97812
523/454-2643

SERVICE PROVIDED
ARLINGTON, PAC

WILSON
243ND PACIFIC
KENT

*Mike:
Last of Chem-
Security... can you
believe it?
OK Note*

INVOICE

THIS IS AN INVOICE FOR CURRENT CHARGES.
PLEASE PAY AMOUNT INDICATED BELOW.

TERMS

NET 30 DAYS AFTER
INVOICE DATE

ALL PAST DUE AMOUNTS WILL BEAR IN-
TEREST AT TWO PERCENT PER MONTH OR
THE MAXIMUM RATE ALLOWED BY LAW,
WHICHEVER IS LESS.

CUSTOMER ACCOUNT NUMBER

451 450 4014122

INVOICE NUMBER	INVOICE DATE	PAGE
3835	10/21/86	1

861021

SERVICE DATE	REFERENCE NO./DESC	UNIT	QUANTITY	RATE	AMOUNT
10/16/86	0200281780-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX	CONTAMINATED SOIL TONS	14.54	BEL-F26015 112.0000	1,628.48
					145.40
				SUBTOTAL	1,773.88 *
10/16/86	0300281781-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX	OIL CONTAMINATED DIRT & GRAVEL TONS	11.59	BEL-T30971 112.0000	1,298.98
					115.00
				SUBTOTAL	1,413.98 *
10/16/86	0300281784-01 DISPOSAL SERVICES PO# OR CONTRACT# SPECIAL PROJECT OREGON HAZD. TAX	CONTAMINATED SOIL TONS	27.01	BEL-F26015 112.0000	3,025.12
					270.10
				SUBTOTAL	3,295.22 *

53.14 Tons

REMIT TO
ADDRESS

STAR ROUTE, BOX 9
ARLINGTON OR 97812

PLEASE PAY
THIS AMOUNT

6,463.88 *

ORIGINAL INVOICE

APPENDIX D

REPORT LIMITATIONS AND GUIDELINES FOR USE

APPENDIX D

REPORT LIMITATIONS AND GUIDELINES FOR USE⁵

This appendix provides information to help you manage your risks with respect to the use of this report. Please confer with GeoEngineers if you need to know more about how these “Report Limitations and Guidelines for Use” apply to your project or property.

Read These Provisions Closely

It is important to recognize that environmental engineering and geoscience practices (geotechnical engineering, geology and environmental science) are less exact than other engineering and natural science disciplines. GeoEngineers includes these explanatory “limitations” provisions in our reports to help reduce the risk of misunderstandings or unrealistic expectations that lead to disappointments, claims and disputes.

Environmental Services Are Performed for Specific Purposes, Persons and Projects

GeoEngineers has performed this Focused Phase II ESA in the eastern portion of the Parcel at 24300 Pacific Highway South in Kent, Washington, King County Tax Parcel 2122049046, identified by Sound Transit as Federal Way parcel FL-252, in general accordance with the scope and limitations of the subcontract between HDR and GeoEngineers dated August 24, 2012, along with Amendments 1 through 12 and Agreement No. RTA/AE 044-12 between HDR and Sound Transit. This report has been prepared for the exclusive use of Sound Transit and their authorized agents. This report is not intended for use by others, and the information contained herein is not applicable to other properties.

GeoEngineers structures its services to meet the specific needs of its clients. For example, an ESA study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and property. Use of this report is not recommended for any purpose or project other than as expressly stated in this report.

This Environmental Report is Based on a Unique Set of Project-Specific Factors

This report has been prepared for a portion of 24300 Pacific Highway South in Kent, Washington, King County Tax Parcel 2122049046, identified by Sound Transit as Federal Way parcel FL-252. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this Project. Unless GeoEngineers specifically indicates

⁵ Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org.

otherwise, it is important not to rely on this report if it was:

- not prepared for you,
- not prepared for your Project,
- not prepared for the specific site explored, or
- completed before Project changes were made.

If changes to the Project or property occur after the date of this report, GeoEngineers cannot be responsible for any consequences of such changes in relation to this report unless we have been given the opportunity to review our interpretations and recommendations in the context of such changes. Based on that review, we can provide written modifications or confirmation, as appropriate.

Reliance Conditions for Third Parties

This report was prepared for the exclusive use of Sound Transit and their authorized agents. No other party may rely on the product of our services unless we agree to such reliance in advance and in writing. Within the limitations of the agreed Project scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and generally accepted environmental practices in this area at the time this report was prepared.

Understand That Geotechnical Issues Have Not Been Addressed

Unless geotechnical engineering was specifically included in our scope of service, this report does not provide any geotechnical findings, conclusions, or recommendations, including but not limited to, the suitability of subsurface materials for construction purposes.

Do Not Separate Documentation from the Report

Environmental reports often include supplemental documentation, such as maps, figures and tables. Do not separate such documentation from the report. Further, do not, and do not permit any other party, to redraw or modify any of the supplemental documentation for incorporation into other professionals' instruments of service.

Environmental Regulations Change and Evolve

Some substances may be present in the vicinity of the subject property in quantities or under conditions that may have led, or may lead, to contamination of the subject property, but are not included in current local, state or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. GeoEngineers cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substances, change or if more stringent environmental standards are developed in the future.

Uncertainty May Remain Even After This Phase II ESA is Completed

Performance of a Phase II ESA is intended to reduce uncertainty regarding the potential for contamination in connection with a property, but no ESA can wholly eliminate that uncertainty. Our interpretation of subsurface conditions in this study is based on field observations and chemical analytical data from widely spaced sampling locations. It is always possible that contamination exists in areas that were not explored, sampled or analyzed.

Information Provided by Others

GeoEngineers has relied upon certain data or information provided or compiled by others in the performance of our services. Although we use sources that we reasonably believe to be trustworthy, GeoEngineers cannot warrant or guarantee the accuracy or completeness of information provided or compiled by others.

Subsurface Conditions Can Change

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by man-made events such as construction on or adjacent to the subject property, by new releases of hazardous substances, new information or technology that become available subsequent to the report date, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. Please contact GeoEngineers before applying this report for its intended purpose so that GeoEngineers may evaluate whether changed conditions affect the continued applicability of the report.

Soil and Groundwater End Use

The cleanup levels referenced in this report are site- and situation-specific. The cleanup levels may not be applicable for other properties or for other on-site uses of the affected soil and/or groundwater. Note that hazardous substances may be present in some of the on-site soil and/or groundwater at detectable concentrations that are less than the referenced cleanup levels. GeoEngineers should be contacted prior to the export of soil or groundwater from the subject property or reuse of the affected soil or groundwater on-site to evaluate the potential for associated environmental liabilities. GeoEngineers will not assume responsibility for potential environmental liability arising out of the transfer of soil and/or groundwater from the subject property to another location, or the reuse of such soil and/or groundwater on-site in any instances that we did not recommend, know of, or control.

Most Environmental Findings Are Professional Opinions

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced sampling locations at the subject property. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted

and/or samples are taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an informed opinion about subsurface conditions throughout the property. Actual subsurface conditions may differ significantly from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

Do Not Redraw the Exploration Logs

Environmental scientists prepare final exploration logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions by others, the logs included in an environmental report should never be redrawn for inclusion in other design documents. Only photographic or electronic reproduction that preserves the entire original exploration log is acceptable, but separating logs from the report can create increase the risk of potential misinterpretation.

Biological Pollutants

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants, and no conclusions or inferences should be drawn regarding Biological Pollutants as they may relate to this Project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria and viruses, and/or any of their byproducts.

A Client that desires these specialized services is advised to obtain them from a consultant who offers services in this specialized field.