State of Washington
Department of Ecology

In the Matter of Remedial Action by:
Green Cove Park LLC
Agreed Order
No. DE 21913

To: Jerry Mahan
Green Cove Park LLC
429 29th Street NE, Suite A
Puyallup, WA 98372

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1. Introduction

The mutual objective of the State of Washington, Department of Ecology (Ecology) and Green Cove Park LLC (Green Cove) under this Agreed Order (Order) is to provide for remedial action at a facility where there has been a release or threatened release of hazardous substances. This Order requires Green Cove to implement the attached Data Gap Report and Remedial Investigation Work Plan, complete a remedial investigation, complete a feasibility study if necessary and prepare a preliminary draft cleanup action plan if necessary. Ecology believes the actions required by this Order are in the public interest.

2. Jurisdiction

This Order is issued pursuant to the Model Toxics Control Act (MTCA), RCW 70A.305.050(1).

3. Parties Bound

This Agreed Order shall apply to and be binding upon the Parties to this Order, their successors and assigns. The undersigned representative of each Party hereby certifies that he or she is fully authorized to enter into this Order and to execute and legally bind such Party to comply with this Order. Green Cove agrees to undertake all actions required by the terms and conditions of this Order. No change in ownership or corporate status shall alter Green Cove's responsibility under this Order. Green Cove shall provide a copy of this Order to all agents, contractors, and subcontractors retained to perform work required by this Order, and shall ensure that all work undertaken by such agents, contractors, and subcontractors complies with this Order.

4. Definitions

Unless otherwise specified herein, the definitions set forth in RCW 70A.305, WAC 173-204 and WAC 173-340 shall control the meanings of the terms in this Order.

4.1 Site

The Site is referred to as Sundberg Gravel Pit. The Site constitutes a facility under RCW 70A.305.020(8). The Site is defined by where a hazardous substance, other than a consumer product in consumer use, has been deposited, stored, disposed of, or placed, or otherwise come to be located. Based upon factors currently known to Ecology, the Site is generally located in the vicinity of 2200 Cooper Point Road NW, Olympia, WA 98502 as shown in the Site Location Map (Exhibit A).

4.2 Parties

Refers to the State of Washington, Department of Ecology and Green Cove.

4.3 Potentially Liable Persons (PLP(s))

Refers to Green Cove.

4.4 Agreed Order or Order

Refers to this Order and each of the exhibits to this Order. All exhibits are integral and enforceable parts of this Order.

5. Findings of Fact

Ecology makes the following findings of fact, without any express or implied admissions of such facts by Green Cove:

5.1

Based upon factors currently known to Ecology, the Site is generally located at 2200 Cooper Point Road NW, Olympia, Thurston County, WA as shown in the Site Location Map (Exhibit A). Properties associated with this site include parcel numbers 81700000000, 74202900000, 74202500200, 74202500100, 50400100100, 50400200100, 50400300100, 50400400100, 50400402000, 50400402100, 50400402300, 50400402500, all owned by Green Cove. The Site boundary, which may include additional parcels, will be identified during the remedial investigation.

5.2

The Site was used as a log storage yard and gravel pit from at least 1960 through the 1990s. Construction debris and random fill events on-site have been reported.

5.3

Green Cove purchased these properties from Westbrook Investments LLC on October 1, 2014. Westbrook Investments is now dissolved but before dissolution had the same address and service agent as Green Cove. The Phase I Environmental Site Assessment (AMEC, April 2, 2004) submitted to Jerry Mahan prior to Green Cove's purchase of the property documented the presence of ground staining in the garage and truck parking area outside the garage, but no sampling to investigate the staining occurred prior to purchase. In 2020, ENPRO Environmental collected six surface soil samples from these areas and found no petroleum or petroleum constituents above MTCA cleanup levels except for a single surface soil sample with total carcinogenic polycyclic aromatic hydrocarbons (cPAH) (as the benzo(a)pyrene toxic equivalent [TEQ]) above the MTCA Method A cleanup level for unrestricted land use.

5.4

A 1993 site assessment by Stemen Environmental, Inc. (Appendix E, Phase 1 Environmental Site Assessment, AMEC, April 2, 2004) conducted during removal of a 12,000-gallon diesel underground storage tank, located northeast of the on-site home,

noted that soil located around the fill pipe was oil stained. Soil samples collected from two soil stockpiles and soil samples collected from the limits of the pit excavated for removal of the UST were below the acceptable action level of 200 parts per million (ppm) in use by Ecology at that time. The soil sample taken from the third stockpile that contained approximately 25 cubic yards of oil-stained soil from around the fill pipe of the tank found 390 ppm total petroleum hydrocarbons (TPH) which was above the acceptable action level of 200 ppm in use by Ecology at that time. The concentration of 390 ppm TPH is below MTCA Method A unrestricted cleanup levels for diesel or heavy oil-range TPH used by Ecology today. The document stated that the contaminated soils would be properly stored until a treatment or disposal method was decided upon. The treatment or disposal of this soil is not documented.

5.5

The Soils investigation preliminary report (Pacific Rim Soils & Water Inc., November 2, 2007) noted odors of diesel or oil in two test pits. This study did not include analytical sampling. One soil boring/monitoring well was completed in each of these two test pit locations by ENPRO in 2020 but did not fully characterize subsurface conditions. Draft Green Cove Park Development Remedial Investigation Report – V. 1 (ENPRO, March 5, 2021), documents the independent work completed by Green Cove in 2020. Soil samples from boring B2, near the first test pit location, did not exceed MTCA Method A or B cleanup levels for unrestricted land use. Arsenic, manganese, and TPH as heavy oil were detected in the groundwater sample at MW2 at the same location above MTCA Method A or B cleanup levels for unrestricted land use. ENPRO soil samples from boring B3, near the second test pit location, exceeded MTCA Method A cleanup levels for unrestricted land use for TPH as heavy oil. TPH as heavy oil was also detected in groundwater below MTCA Method A for unrestricted land use in MW3 at the same location.

5.6

Sundberg Estates Subsurface Investigation Phase II Environmental Assessment (Robinson Noble, March 4, 2008) completed 32 additional test pits and collected 37 soil samples for laboratory analysis by NWTPH-HCID . All soil samples were non-detect for gasoline, diesel, and oil except for one. NWTPA-Dx analysis of that sample contained 370 mg/kg oil-range petroleum hydrocarbons, below the MTCA Method A cleanup level of 2,000 mg/kg.

5.7

Phase I Environmental Site Assessment (Ages Environmental, January 1, 2015) identified an aboveground storage tank with no secondary containment and ground staining near 55-gallon oil drums near/in the garage as recognized environmental conditions. Six surface soil samples collected by Green Cove in 2020 (ENPRO, March 5, 2021) from the former garage, aboveground storage tank, drum storage and vehicle storage areas did

not show the presence of petroleum or petroleum-related contaminants in soil at concentrations exceeding MTCA Method A or B cleanup levels for unrestricted land use with the exception of one exceedance of carcinogenic polycyclic aromatic hydrocarbons (cPAH) TEQ in surface soil sample SS3.

5.8

Historical aerial photos taken between 1973 and 1990 show the subject property was used for log storage. The presence of logs and buried wood debris were identified in multiple records. Reports from concerned citizens allege that some of the logs were creosote poles/pilings. Creosote pilings can be a source of polycyclic aromatic hydrocarbon (PAH) contamination. Additionally, there is a potential for methane gas generation from the breakdown of organic materials (wood debris) buried as fill on the site.

5.9

Reports made to the Environmental Report Tracking System (ERTS) between January 2015 and February 2020 (ERTS #654104, #654938, #687561, and #696417) allege improper storage of hazardous materials and illegal dumping on the subject property.

5.10

The Green Cove Park Development Draft Remedial Investigation Report – V.1. (ENPRO, March 5, 2021) documents the results of remedial investigation activities conducted at the site in 2020 and 2021 as an independent action. The work consisted of drilling 21 soil borings, installing 11 monitoring wells, and collection and laboratory analysis of soil and groundwater samples. The results identified carcinogenic PAHs in soil (in 2 out of 49 total samples), heavy oil-range total petroleum hydrocarbons in soil (in 1 out of 53 samples), and diesel and heavy oil-range total petroleum hydrocarbons, arsenic, iron, and manganese in groundwater (in 8 out of 10 monitoring wells from where groundwater samples were collected and analyzed) at concentrations exceeding MTCA Method A or B soil and groundwater cleanup levels.

6. Ecology Determinations

Ecology makes the following determinations, without any express or implied admissions of such determinations (and underlying facts) by Green Cove.

6.1

Green Cove is an “owner or operator” as defined in RCW 70A.305.020(22) of a “facility” as defined in RCW 70A.305.020(8).

6.2

Based upon all factors known to Ecology, a "release" or "threatened release" of "hazardous substance(s)" as defined in RCW 70A.305.020(32), (13), respectively, has occurred at the Site.

6.3

Based upon credible evidence, Ecology issued a PLP status letter to Green Cove dated August 18, 2021, pursuant to RCW 70A.305.040, .020(26), and WAC 173-340-500. After providing for notice and opportunity for comment, reviewing comments submitted by Green Cove on September 15, 2021, and concluding that credible evidence supported a finding of potential liability, Ecology issued a determination that Green Cove is a PLP under RCW 70A.305.040 and notified Green Cove of this determination by letter dated October 28, 2021.

6.4

Pursuant to RCW 70A.305.030(1), .050(1), Ecology may require PLPs to investigate or conduct other remedial actions with respect to any release or threatened release of hazardous substances, whenever it believes such action to be in the public interest. Based on the foregoing facts, Ecology believes the remedial actions required by this Order are in the public interest.

7. Work to be Performed

Based on the Findings of Fact and Ecology Determinations, it is hereby ordered that Green Cove take the following remedial actions at the Site. These remedial actions must be conducted in accordance with WAC 173-340:

7.1

Green Cove will implement the attached Data Gap Report and Remedial Investigation Work Plan (Exhibit B) and complete a Remedial Investigation, conduct interim actions if required or agreed to by Ecology, complete a Feasibility Study if necessary, and prepare a preliminary draft Cleanup Action Plan for the Site if necessary in accordance with the schedule and terms of the Scope of Work and Schedule, Exhibit C, and all other requirements of this Order.

7.2

If Green Cove learns of a significant change in conditions at the Site, including but not limited to a statistically significant increase in contaminant and/or chemical concentrations in any media, Green Cove, within seven (7) days of learning of the change in condition, shall notify Ecology in writing of said change and provide Ecology with any

reports or records (including laboratory analyses, sampling results) relating to the change in conditions.

7.3

Green Cove shall submit to Ecology written quarterly Progress Reports that describe the actions taken during the previous quarter to implement the requirements of this Order. All Progress Reports shall be submitted by the tenth (10th) day of the first month after the end of the quarter for which they are due after the effective date of this Order. Unless otherwise specified by Ecology, Progress Reports and any other documents submitted pursuant to this Order shall be sent by certified mail, return receipt requested, and email to Ecology's project coordinator. The Progress Reports shall include the following:

7.3.1

A list of on site activities that have taken place during the quarter.

7.3.2

Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests.

7.3.3

Description of all deviations from the Scope of Work and Schedule (Exhibit C) during the current quarter and any planned deviations in the upcoming quarter.

7.3.4

For any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule.

7.3.5

All raw data (including laboratory analyses) received during the previous quarter (if not previously submitted to Ecology), together with a detailed description of the underlying samples collected.

7.3.6

A list of deliverables for the upcoming quarter.

7.4

All plans or other deliverables submitted by Green Cove for Ecology's review and approval under the Scope of Work and Schedule (Exhibit C) shall, upon Ecology's approval, become integral and enforceable parts of this Order. Green Cove shall take any action required by such deliverable.

7.5

Under WAC 173-340-430, an interim action is a remedial action that is technically necessary to reduce a threat to human health or the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance, that corrects a problem that may become substantially worse or cost substantially more to address if the remedial action is delayed, or that is needed to provide for completion of a site hazard assessment, remedial investigation/feasibility study, or design of a cleanup action plan. Any Party may propose an interim action under this Order. If the Parties are in agreement concerning the interim action, Green Cove shall prepare and submit to Ecology an Interim Action Work Plan, including a scope of work and schedule, by the date determined by Ecology. Ecology will provide public notice and opportunity to comment on the Interim Action Work Plan in accordance with WAC 173-340-600(16).

Green Cove shall not conduct the interim action until Ecology approves the Interim Action Work Plan. Upon approval by Ecology, the Interim Action Work Plan becomes an integral and enforceable part of this Order, and Green Cove is required to conduct the interim action in accordance with the approved Interim Action Work Plan. If the Parties are not in agreement, Ecology reserves its authority to require interim action(s) under a separate order or other enforcement action under RCW 70A.305, or to undertake the interim action itself.

7.6

If Ecology determines that Green Cove has failed to make sufficient progress or failed to implement the remedial action, in whole or in part, Ecology may, after notice to Green Cove, perform any or all portions of the remedial action or at Ecology's discretion allow Green Cove the opportunity to correct. In an emergency, Ecology is not required to provide notice to Green Cove, or an opportunity for dispute resolution. Green Cove shall reimburse Ecology for the costs of doing such work in accordance with Section 8.1 (Payment of Remedial Action Costs). Ecology reserves the right to enforce requirements of this Order under Section 10 (Enforcement).

7.7

Except where necessary to abate an emergency situation or where required by law, Green Cove shall not perform any remedial actions at the Site outside those remedial actions required by this Order to address the contamination that is the subject of this Order, unless Ecology concurs, in writing, with such additional remedial actions pursuant to Section 8.11 (Amendment of Order). In the event of an emergency, or where actions are taken as required by law, Green Cove must notify Ecology in writing of the event and remedial action(s) planned or taken as soon as practical but no later than within twenty-four (24) hours of the discovery of the event.

8. Terms and Conditions

8.1 Payment of Remedial Action Costs

Green Cove shall pay to Ecology costs incurred by Ecology pursuant to this Order and consistent with WAC 173-340-550(2). These costs shall include work performed by Ecology or its contractors for, or on, the Site under RCW 70A.305, including remedial actions and Order preparation, negotiation, oversight, and administration. These costs shall include work performed both prior to and subsequent to the issuance of this Order that are directly related to Ecology's oversight of this Order. Ecology's costs shall include costs of direct activities and support costs of direct activities as defined in WAC 173-340-550(2). Ecology has accumulated $58,005.82 in remedial action costs related to this Site as of June 30, 2023. For all Ecology costs incurred, Green Cove shall pay the required amount within thirty (30) days of receiving from Ecology an itemized statement of costs that includes a summary of costs incurred, an identification of involved staff, and the amount of time spent by involved staff members on the project. A general statement of work performed will be provided upon request. Itemized statements shall be prepared quarterly. Pursuant to WAC 173-340-550(4), failure to pay Ecology's costs within ninety (90) days of receipt of the itemized statement of costs will result in interest charges at the rate of twelve percent (12%) per annum, compounded monthly.

In addition to other available relief, pursuant to RCW 19.16.500, Ecology may utilize a collection agency and/or, pursuant to RCW 70A.305.060, file a lien against real property subject to the remedial actions to recover unreimbursed remedial action costs.

8.2 Designated Project Coordinators

The project coordinator for Ecology is:

Connie Groven
PO Box 47775, Olympia WA 98504-7775
(360) 584-7037
connie.groven@ecy.wa.gov

The project coordinator for Green Cove is:

Carla Brock
Aspect Consulting, LLC

710 2nd Avenue, Suite 550
(206)838-6598
cbrock@aspectconsulting.com

Each project coordinator shall be responsible for overseeing the implementation of this Order. Ecology's project coordinator will be Ecology's designated representative for the Site. To the maximum extent possible, communications between Ecology and Green Cove, and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Order shall be directed through the project coordinators. The project coordinators may designate, in writing, working level staff contacts for all or portions of the implementation of the work to be performed required by this Order.

Any Party may change its respective project coordinator. Written notification shall be given to the other Party at least ten (10) calendar days prior to the change.

8.3 Performance

All geologic and hydrogeologic work performed pursuant to this Order shall be under the supervision and direction of a geologist or hydrogeologist licensed by the State of Washington or under the direct supervision of an engineer registered by the State of Washington, except as otherwise provided for by RCW 18.43 and 18.220.

All engineering work performed pursuant to this Order shall be under the direct supervision of a professional engineer registered by the State of Washington, except as otherwise provided for by RCW 18.43.130.

All construction work performed pursuant to this Order shall be under the direct supervision of a professional engineer or a qualified technician under the direct supervision of a professional engineer. The professional engineer must be registered by the State of Washington, except as otherwise provided for by RCW 18.43.130.

Any documents submitted containing geologic, hydrogeologic, or engineering work shall be under the seal of an appropriately licensed professional as required by RCW 18.43 and 18.220.

Green Cove shall notify Ecology in writing of the identity of any engineer(s) and geologist(s), contractor(s), subcontractor(s), and other key personnel to be used in carrying out the terms of this Order, in advance of their involvement at the Site.

8.4 Access

Ecology or any Ecology authorized representative shall have access to enter and freely move about all property at the Site that Green Cove either owns, controls, or has access rights to at all reasonable times for the purposes of, inter alia: inspecting records, operation logs, and contracts related to the work being performed pursuant to this Order; reviewing Green Cove's progress in carrying out the terms of this Order; conducting such tests or collecting such samples as Ecology may deem necessary; using a

camera, sound recording, or other documentary type equipment to record work done pursuant to this Order; and verifying the data submitted to Ecology by Green Cove. Ecology or any Ecology authorized representative shall give reasonable notice before entering any Site property owned or controlled by Green Cove unless an emergency prevents such notice. All persons who access the Site pursuant to this section shall comply with any applicable health and safety plan(s). Ecology employees and their representatives shall not be required to sign any liability release or waiver as a condition of Site property access.

Green Cove shall make best efforts to secure access rights for those properties within the Site not owned or controlled by Green Cove where remedial activities or investigations will be performed pursuant to this Order. As used in this Section, "best efforts" means the efforts that a reasonable person in the position of Green Cove would use so as to achieve the goal in a timely manner, including the cost of employing professional assistance and the payment of reasonable sums of money to secure access and/or use restriction agreements, as required by this Section. If, within 90 days after the effective date of this Order, Green Cove is unable to accomplish what is required through "best efforts," they shall notify Ecology, and include a description of the steps taken to comply with the requirements. If Ecology deems it appropriate, it may assist Green Cove, or take independent action, in obtaining such access and/or use restrictions. Ecology reserves the right to seek payment from Green Cove for all costs, including cost of attorneys' time, incurred by Ecology in obtaining such access or agreements to restrict land, water, or other resource use.

8.5 Sampling, Data Submittal, and Availability

With respect to the implementation of this Order, Green Cove shall make the results of all sampling, laboratory reports, and/or test results generated by it or on its behalf available to Ecology. Pursuant to WAC 173-340-840(5), all sampling data shall be submitted to Ecology in both printed and electronic formats in accordance with Section 7 (Work to be Performed), Ecology's Toxics Cleanup Program Policy 840 (Data Submittal Requirements), and/or any subsequent procedures specified by Ecology for data submittal.

If requested by Ecology, Green Cove shall allow Ecology and/or its authorized representative to take split or duplicate samples of any samples collected by Green Cove pursuant to implementation of this Order. Green Cove shall notify Ecology seven (7) days in advance of any sample collection or work activity at the Site. Ecology shall, upon request, allow Green Cove and/or its authorized representative to take split or duplicate samples of any samples collected by Ecology pursuant to the implementation of this Order, provided that doing so does not interfere with Ecology's sampling. Without

limitation on Ecology's rights under Section 8.4 (Access), Ecology shall notify Green Cove prior to any sample collection activity unless an emergency prevents such notice.

In accordance with WAC 173-340-830(2)(a), all hazardous substance analyses shall be conducted by a laboratory accredited under WAC 173-50 for the specific analyses to be conducted, unless otherwise approved by Ecology.

8.6 Public Participation

Ecology shall maintain the responsibility for public participation at the Site. However, Green Cove shall cooperate with Ecology, and shall:

8.6.1

If agreed to by Ecology, develop appropriate mailing lists and prepare drafts of public notices and fact sheets at important stages of the remedial action, such as the submission of work plans, remedial investigation/feasibility study reports, cleanup action plans, and engineering design reports. As appropriate, Ecology will edit, finalize, and distribute such fact sheets and prepare and distribute public notices of Ecology's presentations and meetings.

8.6.2

Notify Ecology's project coordinator prior to the preparation of all press releases and fact sheets, and before meetings related to remedial action work to be performed at the Site with the interested public and/or local governments. Likewise, Ecology shall notify Green Cove prior to the issuance of all press releases and fact sheets related to the Site, and before meetings related to the Site with the interested public and local governments. For all press releases, fact sheets, meetings, and other outreach efforts by Green Cove that do not receive prior Ecology approval, Green Cove shall clearly indicate to its audience that the press release, fact sheet, meeting, or other outreach effort was not sponsored or endorsed by Ecology.

8.6.3

When requested by Ecology, participate in public presentations on the progress of the remedial action at the Site. Participation may be through attendance at public meetings to assist in answering questions or as a presenter.

8.6.4

When requested by Ecology, arrange and maintain a repository to be located at:

a. Olympia Timberland Regional Library
313 8th Avenue SE

Olympia, WA 98501
(303) 352-0595

b. Ecology's Southwest Regional Office
300 Desmond Drive
Lacey, WA 98503
(360) 407-6365

At a minimum, copies of all public notices, fact sheets, and documents relating to public comment periods shall be promptly placed in these repositories. A copy of all documents related to this Site shall be maintained in the repository at Ecology's Southwest Regional Office in Lacey, Washington.

8.7 Access to Information

Green Cove shall provide to Ecology, upon request, copies of all records, reports, documents, and other information (including records, reports, documents, and other information in electronic form) (hereinafter referred to as "Records") within Green Cove's possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Order, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information regarding the work. Green Cove shall also make available to Ecology, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the work.

Nothing in this Order is intended to waive any right Green Cove may have under applicable law to limit disclosure of Records protected by the attorney work-product privilege and/or the attorney-client privilege. If Green Cove withholds any requested Records based on an assertion of privilege, Green Cove shall provide Ecology with a privilege log specifying the Records withheld and the applicable privilege. No Site-related data collected pursuant to this Order shall be considered privileged, including: (1) any data regarding the Site, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, radiological, biological, or engineering data, or the portion of any other record that evidences conditions at or around the Site; or (2) the portion of any Record that Respondents are required to create or generate pursuant to this Order.

Notwithstanding any provision of this Order, Ecology retains all of its information gathering and inspection authorities and rights, including enforcement actions related thereto, under any other applicable statutes or regulations.

8.8 Retention of Records

During the pendency of this Order, and for ten (10) years from the date of completion of the work performed pursuant to this Order, Green Cove shall preserve all records, reports, documents, and underlying data in its possession relevant to the implementation of this Order and shall insert a similar record retention requirement into all contracts with project contractors and subcontractors.

8.9 Resolution of Disputes

8.9.1

In the event that Green Cove elects to invoke dispute resolution Green Cove must utilize the procedure set forth below.

8.9.1.1 Upon the triggering event (receipt of Ecology's project coordinator's written decision or an itemized billing statement), Green Cove has fourteen (14) calendar days within which to notify Ecology's project coordinator in writing of its dispute (Informal Dispute Notice).

8.9.1.2 The Parties' project coordinators shall then confer in an effort to resolve the dispute informally. The Parties shall informally confer for up to fourteen (14) calendar days from receipt of the Informal Dispute Notice. If the project coordinators cannot resolve the dispute within those fourteen (14) calendar days, then within seven (7) calendar days Ecology's project coordinator shall issue a written decision (Informal Dispute Decision) stating: the nature of the dispute; the [Subject PLP(s)'s] position with regards to the dispute; Ecology's position with regards to the dispute; and the extent of resolution reached by informal discussion.

8.9.1.3 Green Cove may then request regional management review of the dispute. Green Cove must submit this request (Formal Dispute Notice) in writing to the [region] Region Toxics Cleanup Section Manager within seven (7) calendar days of receipt of Ecology's Informal Dispute Decision. The Formal Dispute Notice shall include a written statement of dispute setting forth: the nature of the dispute; Green Cove's position with respect to the dispute; and the information relied upon to support its position.

8.9.1.4 The Section Manager shall conduct a review of the dispute and shall endeavor to issue a written decision regarding the dispute (Decision on Dispute) within thirty (30) calendar days of receipt of the Formal

Dispute Notice. The Decision on Dispute shall be Ecology's final decision on the disputed matter.

8.9.2

The Parties agree to only utilize the dispute resolution process in good faith and agree to expedite, to the extent possible, the dispute resolution process whenever it is used.

8.9.3

Implementation of these dispute resolution procedures shall not provide a basis for delay of any activities required in this Order, unless Ecology agrees in writing to a schedule extension.

8.9.4

In case of a dispute, failure to either proceed with the work required by this Order or timely invoke dispute resolution may result in Ecology's determination that insufficient progress is being made in preparation of a deliverable, and may result in Ecology undertaking the work under Section 7.1 (Work to be Performed) or initiating enforcement under Section 10 (Enforcement).

8.10 Extension of Schedule

8.10.1

Green Cove's request for an extension of schedule shall be granted only when a request for an extension is submitted in a timely fashion, generally at least thirty (30) days prior to expiration of the deadline for which the extension is requested, and good cause exists for granting the extension. All extensions shall be requested in writing. The request shall specify:

8.10.1.1 The deadline that is sought to be extended.

8.10.1.2 The length of the extension sought.

8.10.1.3 The reason(s) for the extension.

8.10.1.4 Any related deadline or schedule that would be affected if the extension were granted.

8.10.2

The burden shall be on Green Cove to demonstrate to the satisfaction of Ecology that the request for such extension has been submitted in a timely fashion and that good cause exists for granting the extension. Good cause may include, but may not be limited to:

8.10.2.1 Circumstances beyond the reasonable control and despite the due diligence of Green Cove including delays caused by unrelated third parties or Ecology, such as (but not limited to) delays by Ecology in reviewing, approving, or modifying documents submitted by Green Cove.

8.10.2.2 A shelter in place or work stoppage mandated by state or local government order due to public health and safety emergencies.

8.10.2.3 Acts of God, including fire, flood, blizzard, extreme temperatures, storm, or other unavoidable casualty.

8.10.2.4 Endangerment as described in Section 8.12 (Endangerment).

However, neither increased costs of performance of the terms of this Order nor changed economic circumstances shall be considered circumstances beyond the reasonable control of Green Cove.

8.10.3

Ecology shall act upon any Green Cove's written request for extension in a timely fashion. Ecology shall give Green Cove written notification of any extensions granted pursuant to this Order. A requested extension shall not be effective until approved by Ecology. Unless the extension is a substantial change, it shall not be necessary to amend this Order pursuant to Section 8.11 (Amendment of Order) when a schedule extension is granted.

8.10.4

At Green Cove's request, an extension shall only be granted for such period of time as Ecology determines is reasonable under the circumstances. Ecology may grant schedule extensions exceeding ninety (90) days only as a result of one of the following:

8.10.4.1 Delays in the issuance of a necessary permit which was applied for in a timely manner.

8.10.4.2 Other circumstances deemed exceptional or extraordinary by Ecology.

8.10.4.3 Endangerment as described in Section 8.12 (Endangerment).

8.11 Amendment of Order

The project coordinators may verbally agree to minor changes to the work to be performed without formally amending this Order. Minor changes will be documented in writing by Ecology within seven (7) days of verbal agreement.

Except as provided in Section 8.13 (Reservation of Rights), substantial changes to the work to be performed shall require formal amendment of this Order. This Order may only be formally amended by the written consent of both Ecology and Green Cove.

Ecology will provide its written consent to a formal amendment only after public notice and opportunity to comment on the formal amendment.

When requesting a change to the Order, Green Cove shall submit a written request to Ecology for approval. Ecology shall indicate its approval or disapproval in writing and in a timely manner after the written request is received. If Ecology determines that the change is substantial, then the Order must be formally amended. Reasons for the disapproval of a proposed change to this Order shall be stated in writing. If Ecology does not agree to a proposed change, the disagreement may be addressed through the dispute resolution procedures described in Section 8.9 (Resolution of Disputes).

8.12 Endangerment

In the event Ecology determines that any activity being performed at the Site under this Order is creating or has the potential to create a danger to human health or the environment on or surrounding the Site, Ecology may direct Green Cove to cease such activities for such period of time as it deems necessary to abate the danger. Green Cove shall immediately comply with such direction.

In the event Green Cove determines that any activity being performed at the Site under this Order is creating or has the potential to create a danger to human health or the environment, Green Cove may cease such activities. Green Cove shall notify Ecology's project coordinator as soon as possible, but no later than twenty-four (24) hours after making such determination or ceasing such activities. Upon Ecology's direction, Green Cove shall provide Ecology with documentation of the basis for the determination or cessation of such activities. If Ecology disagrees with Green Cove's cessation of activities, it may direct Green Cove to resume such activities.

If Ecology concurs with or orders a work stoppage pursuant to this section, Green Cove's obligations with respect to the ceased activities shall be suspended until Ecology determines the danger is abated, and the time for performance of such activities, as well as the time for any other work dependent upon such activities, shall be extended in accordance with Section 8.10 (Extension of Schedule) for such period of time as Ecology determines is reasonable under the circumstances.

Nothing in this Order shall limit the authority of Ecology, its employees, agents, or contractors to take or require appropriate action in the event of an emergency.

8.13 Reservation of Rights

This Order is not a settlement under RCW 70A.305. Ecology's signature on this Order in no way constitutes a covenant not to sue or a compromise of any of Ecology's rights or authority. Ecology will not, however, bring an action against Green Cove to recover remedial action costs paid to and received by Ecology under this Order. In addition, Ecology will not take additional enforcement actions against Green Cove regarding remedial actions required by this Order, provided Green Cove complies with this Order.

Ecology nevertheless reserves its rights under RCW70A.305, including the right to require additional or different remedial actions at the Site should it deem such actions necessary to protect human health or the environment, and to issue orders requiring such remedial actions. Ecology also reserves all rights regarding the injury to, destruction of, or loss of natural resources resulting from the release or threatened release of hazardous substances at the Site.

By entering into this Order, Green Cove does not admit to any liability for the Site. Although Green Cove is committing to conducting the work required by this Order under the terms of this Order, Green Cove expressly reserves all rights available under law, including but not limited to the right to seek cost recovery or contribution against third parties, and the right to assert any defenses to liability in the event of enforcement.

8.14 Transfer of Interest in Property

No voluntary conveyance or relinquishment of title, easement, leasehold, or other interest in any portion of the Site shall be consummated by Green Cove without provision for continued implementation of all requirements of this Order and implementation of any remedial actions found to be necessary as a result of this Order.

Prior to Green Cove's transfer of any interest in all or any portion of the Site, and during the effective period of this Order, Green Cove shall provide a copy of this Order to any prospective purchaser, lessee, transferee, assignee, or other successor in said interest; and, at least thirty (30) days prior to any transfer, Green Cove shall notify Ecology of said transfer. Upon transfer of any interest, Green Cove shall notify all transferees of the restrictions on the activities and uses of the property under this Order and incorporate any such use restrictions into the transfer documents.

8.15 Compliance with Applicable Laws

8.15.1 Applicable Laws

All actions carried out by Green Cove pursuant to this Order shall be done in accordance with all applicable federal, state, and local requirements, including requirements to obtain necessary permits or approvals, except as provided in RCW 70A.305.090. At this time, no federal, state, or local requirements have been identified as being applicable to the actions required by this Order. Green Cove has a continuing obligation to identify additional applicable federal, state, and local requirements which apply to actions carried out pursuant to this Order, and to comply with those requirements. As additional federal, state, and local requirements are identified by Ecology or Green Cove, Ecology will document in writing if they are applicable to actions carried out pursuant to this Order, and Green Cove must implement those requirements.

8.15.2 Relevant and Appropriate Requirements.

All actions carried out by Green Cove pursuant to this Order shall be done in accordance with relevant and appropriate requirements identified by Ecology. At this time, no relevant and appropriate requirements have been identified as being applicable to the actions required by this Order. If additional relevant and appropriate requirements are identified by Ecology or Green Cove, Ecology will document in writing if they are applicable to actions carried out pursuant to this Order and Green Cove must implement those requirements.

8.15.3

Pursuant to RCW 70A.305.090(1), Green Cove may be exempt from the procedural requirements of RCW 70A.15, 70A.205, 70A.300, 77.55, 90.48, and 90.58 and of any laws requiring or authorizing local government permits or approvals. However, Green Cove shall comply with the substantive requirements of such permits or approvals. For permits and approvals covered under RCW 70A.305.090(1) that have been issued by local government, the Parties agree that Ecology has the non-exclusive ability under this Order to enforce those local government permits and/or approvals. At this time, no state or local permits or approvals have been identified as being applicable but procedurally exempt under this section.

8.15.4

Green Cove has a continuing obligation to determine whether additional permits or approvals addressed in RCW 70A.305.090(1) would otherwise be required for the remedial action under this Order. In the event either Ecology or Green Cove determines that additional permits or approvals addressed in RCW

70A.305.090(1) would otherwise be required for the remedial action under this Order, it shall promptly notify the other Party of its determination. Ecology shall determine whether Ecology or Green Cove shall be responsible to contact the appropriate state and/or local agencies. If Ecology so requires, Green Cove shall promptly consult with the appropriate state and/or local agencies and provide Ecology with written documentation from those agencies of the substantive requirements those agencies believe are applicable to the remedial action. Ecology shall make the final determination on the additional substantive requirements that must be met by Green Cove and on how Green Cove must meet those requirements. Ecology shall inform Green Cove in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable requirements of this Order. Green Cove shall not begin or continue the remedial action potentially subject to the additional requirements until Ecology makes its final determination.

Pursuant to RCW 70A.305.090(2), in the event Ecology determines that the exemption from complying with the procedural requirements of the laws referenced in RCW 70A.305.090(1) would result in the loss of approval from a federal agency that is necessary for the state to administer any federal law, the exemption shall not apply and Green Cove shall comply with both the procedural and substantive requirements of the laws referenced in RCW 70A.305.090(1), including any requirements to obtain permits or approvals.

8.16 Indemnification

Green Cove agrees to indemnify and save and hold the State of Washington, its employees, and agents harmless from any and all claims or causes of action (1) for death or injuries to persons, or (2) for loss or damage to property, to the extent arising from or on account of acts or omissions of Green Cove, its officers, employees, agents, or contractors in entering into and implementing this Order. However, Green Cove shall not indemnify the State of Washington nor save nor hold its employees and agents harmless from any claims or causes of action to the extent arising out of the negligent acts or omissions of the State of Washington, or the employees or agents of the State, in entering into or implementing this Order.

9. Satisfaction of Order

The provisions of this Order shall be deemed satisfied upon Green Cove's receipt of written notification from Ecology that Green Cove has completed the remedial activity required by this Order, as amended by any modifications, and that Green Cove has complied with all other provisions of this Agreed Order.

10. Enforcement

Pursuant to RCW 70A.305.050, this Order may be enforced as follows:

10.1

The Attorney General may bring an action to enforce this Order in a state or federal court.

10.2

The Attorney General may seek, by filing an action, if necessary, to recover amounts spent by Ecology for investigative and remedial actions and orders related to the Site.

10.3

A liable party who refuses, without sufficient cause, to comply with any term of this Order will be liable for:

10.3.1

Up to three (3) times the amount of any costs incurred by the State of Washington as a result of its refusal to comply.

10.3.2

Civil penalties of up to twenty-five thousand dollars ($25,000) per day for each day it refuses to comply.

10.4

This Order is not appealable to the Washington Pollution Control Hearings Board. This Order may be reviewed only as provided under RCW 70A.305.070.

Effective date of this Order: _____

Green Cove Park LLC

Jerry Mahan
Owner
Puyallup, WA 98372
(253) 686-1100

1-30-2024

State of Washington
Department of Ecology

Rebecca S. Lawson, PE, LHG
Section Manager
Toxics Cleanup Program
Southwest Regional Office
(360) 407-6241

Exhibit A – Site Location Map

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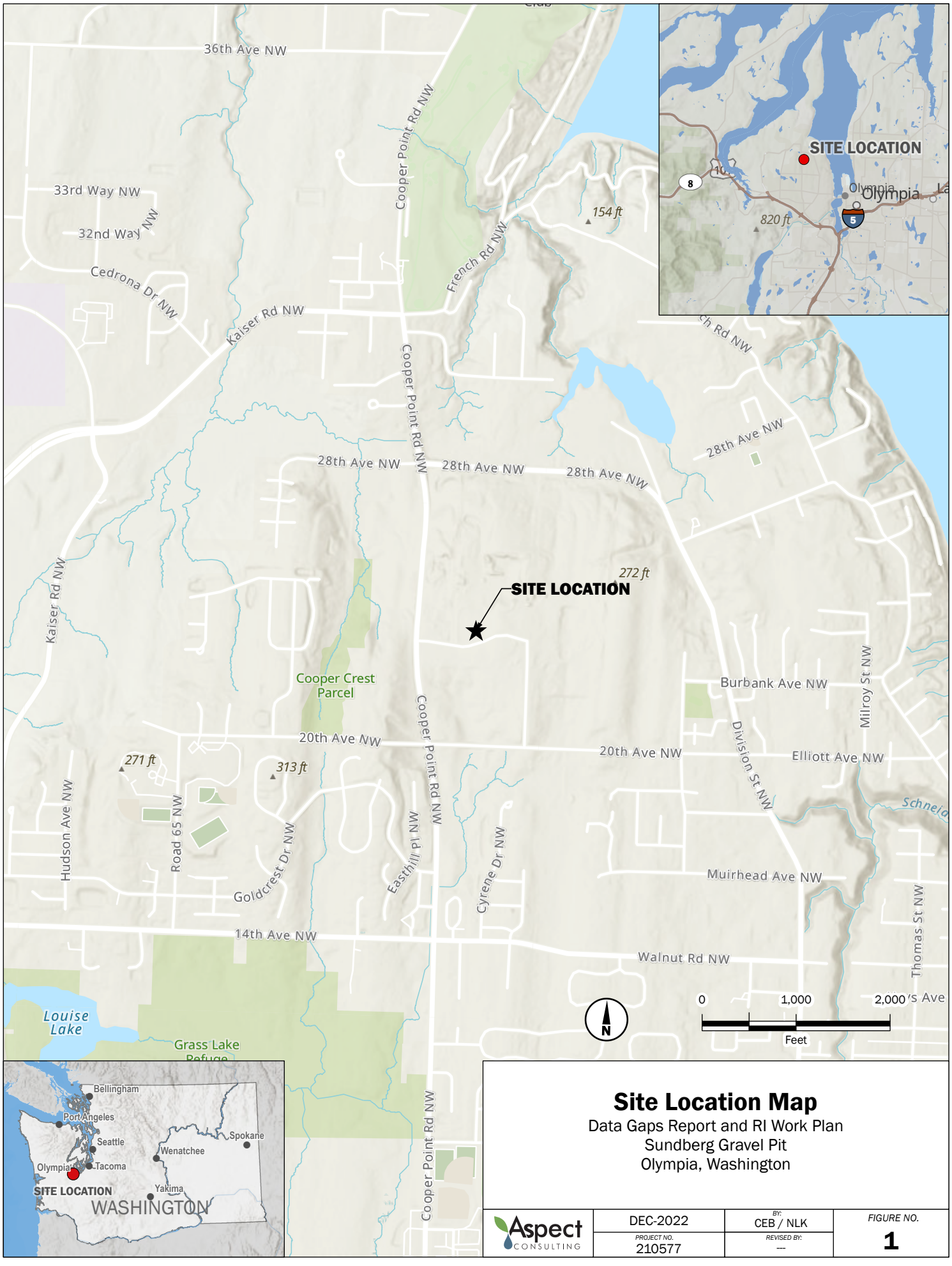

Site Location Map

Data Gaps Report and RI Work Plan
Sundberg Gravel Pit
Olympia, Washington

Aspect CONSULTING	DEC-2022	BY: CEB / NLK	FIGURE NO. 1
	PROJECT NO. 210577	REVISED BY: ---	

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Exhibit B – Data Gap Report and Remedial Investigation Work Plan

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DATA GAP REPORT AND REMEDIAL INVESTIGATION WORK PLAN

Sundberg Gravel Pit

Prepared for: Green Cove Park LLC

Project No. 210577 • June 1, 2023 PUBLIC-REVIEW DRAFT

Aspect CONSULTING

earth + water

DATA GAP REPORT AND REMEDIAL INVESTIGATION WORK PLAN

Sundberg Gravel Pit

Prepared for: Green Cove Park LLC

Project No. 210577 • June 1, 2023 PUBLIC-REVIEW DRAFT

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A Sampling and Analysis Plan

B Previous Exploration Logs

C Initial Draft RI Report, ENPRO, 2021

D Report Limitations and Guidelines for Use

Acronyms

AEG	Associated Environmental Group, LLC
AMEC	AMEC Earth & Environmental
Aspect	Aspect Consulting, LLC
AST	aboveground storage tank
bgs	below ground surface
BETX	benzene, ethylbenzene, toluene, and xylenes
CARA	Critical Aquifer Recharge Area
CLARC	Cleanup Levels and Risk Calculation
COPC	constituent of potential concern
cPAH	carcinogenic PAH
CSM	conceptual site model
DWPA	Drinking Water Protection Area
Ecology	Washington Department of Ecology
ENPRO	ENPRO Environmental
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
LEL	lower explosive limit
LiDAR	light detection and ranging
mg/kg	milligrams/kilograms
mg/L	milligrams per liter
µg/L	micrograms per liter
msl	mean sea level
MTCA	Model Toxics Control Act
mV	millivolts
NAVD88	North American Vertical Datum 1988
ORP	oxidation-reduction potential
Pacific Rim	Pacific Rim Soil & Water
PAH	polycyclic aromatic hydrocarbon

PCB	polychlorinated biphenyl
PCP	pentachlorophenol
PID	photoionization detector
QA/QC	quality assurance/quality control
RCRA	Resource Conservation and Recovery Act
RCW	Revised Code of Washington
RLI	Residential Low Impact
RI	Remedial Investigation
RNS	Robinson, Noble & Saltbush, Inc.
SAP	Sampling and Analysis Plan
SVOC	semivolatile organic compound
SMS	Sediment Management Standards
Soundview	Soundview Consultants LLC
Stemen	Stemen Environmental, Inc.
TAL	Target Analyte List
TEE	terrestrial ecological evaluation
TEQ	toxic equivalent concentration
TPH	total petroleum hydrocarbons
TPH-D+O	total diesel-range extended petroleum hydrocarbons
USGS	U.S. Geological Survey
UST	underground storage tank
VOC	volatile organic compound
WAC	Washington Administrative Code
WRIA	Water Resource Inventory Area

1 Introduction

This Data Gap Report and Remedial Investigation Work Plan (RI Work Plan) presents existing information and data for the Sundberg Gravel Pit, generally located at 2200 Cooper Point Road NW in Olympia, Washington (Subject Property; Figure 1), to identify data gaps and outline the objectives and scope of work to complete the Remedial Investigation (RI) for the Site. The "Site" is defined by any area where a hazardous substance, other than a consumer product in consumer use, has been deposited, stored, disposed of, or placed, or otherwise come to be located (Revised Code of Washington [RCW] 70A.305.020(8)). The RI will define the extent of the Site that is associated with historical operations at the Subject Property.

The Data Gap Report and RI Work Plan has been prepared as an attachment to Agreed Order No. DEXXXX (Agreed Order) between the Washington State Department of Ecology (Ecology) and Green Cove Park LLC. The purpose of the RI is to meet the requirements of Washington Administrative Code (WAC) 173-340-350(7) and WAC 173-204-550 to determine the nature and extent of contamination exceeding Model Toxics Control Act (MTCA) cleanup levels, Sediment Management Standards (SMS), and other applicable regulatory requirements.

1.1 Report Organization

This report is organized as follows.

- Section 2 presents a description of the Subject Property, including the location, history, and current and likely future land use.
- Section 3 describes the environmental setting of the Subject Property, including topography, geology, and hydrogeology, and a discussion of sensitive receptors on or near the Subject Property.
- Section 4 provides a comprehensive description of the previous investigations conducted to date at the Subject Property, and a summary of existing data.
- Section 5 describes the preliminary conceptual site model (CSM), including sources and constituents of potential concern (COPCs), and the potential exposure pathways and receptors.
- Section 6 presents the existing data gaps in the site characterization.
- Section 7 presents the RI work plan to address the data gaps identified in Section 6.
- Section 8 presents an estimate schedule for implementation of this Work Plan.
- Section 9 presents the references used in the preparation of this document.

Several appendices provide additional information:

- Appendix A Sampling and Analysis Plan

- Appendix B Previous Boring Logs
- Appendix C Initial Draft RI Report – V.1 (ENPRO, 2021)
- Appendix D Report Limitations and Guidelines for Use

2 Project Location and History

This section describes the project location, Subject Property history, and current and potential future land use.

2.1 Project Location and Description

The Subject Property is currently vacant, undeveloped land, covered by shrub vegetation and trees (Figure 2). The Subject Property consists of 12 Thurston County tax parcels that together comprise approximately 53 acres of land located within the city of Olympia in Thurston County (Table 1, below). The majority of the Subject Property is zoned Residential Low Impact[1] (RLI) by the City of Olympia; the northeastern-most parcels are zoned Residential 4–8 Units per Acre[2] (R-4-8) (Olympia, 2020).

Table 1. Subject Property Parcel Information

Tax Parcel No	Size (Acres)
81700000000 (Parcel A)	27.4
74202900000 (Parcel B)	6.79
74202500200 (Parcel C)	4.66
74202500100	7.27
50400100100	1.62
50400200100	1.5
50400300100	1.63
50400400100	1.1
50400402000	0.06
50400402100	0.11
50400402300	0.11
50400402500	0.24
Total Subject Property Area	52.49

[1] Residential development within sensitive drainage basins at densities averaging from two (2) to four (4) units per acre.
[2] Residential development at densities ranging from a minimum of four (4) units per acre to a maximum of eight (8) units per acre.

The Subject Property is bound to the west by Cooper Point Road, beyond which is undeveloped, vacant forest land, and to the north, east, and south by rural residential properties, some of which are developed with single-family residences, but many are undeveloped.

Not including wetlands on the Subject Property (which are discussed in Section 3.3), the nearest surface water bodies are a small tributary to Green Cove Creek, located approximately 1,200 feet northwest of the Subject Property, and Kaufman Pond, located approximately 1,300 feet north-northeast of the Subject Property. Budd Inlet of the Puget Sound is located approximately 3,300 feet east of the Subject Property (Figure 3).

2.2 Subject Property History

The largest tax parcel, herein referred to as Parcel A (Figure 2), along with adjoining portions of Parcels B and C, were used for intermittent sand and gravel mining beginning in approximately 1960 through the 1990s (AMEC, 2004; ENPRO, 2020). Although there are no available records, based on the observed fill conditions on the Subject Property, reclamation (filling of mined areas) appears to have also been intermittent, which is consistent with the requirements for segmental reclamation of surface mines (RCW 78.44.111).

Historical land disturbance – which herein refers to grading and filling activities and does not include vegetation clearing or logging – has been evaluated for the Subject Property using a variety of data and information sources, including light detection and ranging (LiDAR) and historical aerial photograph review. LiDAR is a remote sensing method that uses a pulsed laser to measure distances to the Earth's surface and, combined with other recorded data, generates precise, three-dimensional information about surface characteristics. LiDAR can collect elevation data in an area of dense vegetation where traditional photogrammetry fails to reveal the actual terrain surface due to dense cover. The estimated limits of historical land disturbance on the Subject Property are depicted on Figure 4. Portions of the subject Property outside of these limits of land disturbance are treed, forested areas that appear undisturbed in available historical documentation.

A series of historical aerial photographs are provided on Figures 5a and 5b to depict Subject Property conditions over time. A 1942 aerial photograph shows the Subject Property primarily vacant and covered in vegetation except for a small structure located in the south-central portion of the Subject Property. Some clearing is evident in the 1960 aerial photograph along with a small area of land disturbance to the west of the 1942 structure, which is still visible. This is consistent with historical documentation of gravel mining commencing on the Subject Property around 1960. The 1965 aerial photograph shows expansion of land disturbance to the west and north. The 1973 aerial photograph shows further expanded grading and land disturbance to the north along the western Subject Property boundary and log piles in the central portion of the Subject Property. The 1978 aerial photograph shows similar conditions with grading along the western Subject Property boundary and log-pile storage in the central portion.

The aerial photographs available for the Subject Property show that Parcel A was used between approximately 1976 and 1990 for log storage (AMEC, 2004). An oblique aerial photograph taken in 1976, as part of Ecology's coastal atlas program, shows rafted log

storage in the foreground, presumably for use in sawmill operations located along the shoreline of Budd Inlet just outside of the photograph frame. The background of the aerial photograph shows log-pile storage on a portion of the Subject Property (Figure 6).

The 1990 aerial photograph shows reclamation along the western portion of the Subject Property, where previous aerial photographs showed evidence of grading. The small structure first observed in the 1942 aerial photograph is still present, and a new structure is shown in the southwest portion of the Subject Property. Log piles remain in the central portion of the Subject Property in the 1990 aerial photograph, but are fewer than previously depicted. Clearing is evident along the eastern Subject Property boundary in the 1990 aerial photograph. The 1990 aerial photograph also shows clearing and grading that appears to extend off the western portion of the Subject Property to the north. The 2003 aerial photograph shows the largest area of grading in the west-central portion of the Subject Property of any of the aerial photographs and is used to help determine the extent of land disturbance on the Subject Property (Figure 4). The small structure first seen in the 1942 aerial photograph is no longer present on the Subject Property in the 2003 aerial photograph. The aerial photographs dated between 2005 and 2018 show no evidence of additional land disturbance and depict similar conditions with vegetation growing over mined and reclaimed areas and a number of access roads and trails.

The 4.66-acre parcel, herein referred to as Parcel C with a past address of 2721 Park Street NW, was developed between 1983 and 1990 with a mobile home and garage. The potable water supply to the home was a private water supply well located on the same parcel. A septic system was also present on the parcel. During a site reconnaissance for a Phase I Environmental Site Assessment (ESA) in 2004, AMEC Earth & Environmental (AMEC) observed a 500-gallon aboveground storage tank (AST) used for storage of diesel fuel, and documented its condition as being ‘new and in good condition’ (AMEC, 2004). The Phase I ESA also identified the presence of approximately ten, 55-gallon drums of oil and drive train fluid located in and around the garage, and surface staining in the garage and north of the garage, where equipment and vehicles were parked. Each stained area measured approximately 6 feet by 6 feet (AMEC, 2004).

An underground storage tank (UST) is reported to have been historically located to the northeast of the mobile home (AMEC, 2004) on Parcel C. The UST was reported to have a 12,000-gallon capacity and be used for storage of diesel fuel for truck fueling. The UST was permanently decommissioned by removal by Stemen Environmental in 1993 (see Section 4.1 for more information).

2.3 Current and Future Land Use

The current land use for the Subject Property is mine reclamation. At the time of preparation of this document, there is no active gravel mining or other uses of the Subject Property for private or commercial purposes. The portions of the Subject Property that have been used historically for surface sand and gravel mining are being reclaimed in accordance with the Washington State Surface Mining Act, regulated under Chapter 332-18 WAC and RCW 78.44.

Future land use may include redevelopment for residential use.

3 Environmental Setting

The Subject Property's physical characteristics and its immediate vicinity are described in this section. After overviews of topography and surface drainage, the text provides a description of geologic and hydrogeologic conditions, groundwater use, and critical areas in the vicinity of the Subject Property.

3.1 Topography and Surface Drainage

The topography of the area is detailed on the U.S. Geological Survey (USGS) 7.5-minute topographic map Tumwater Quadrangle, Washington – Thurston County (USGS, 2022). The Subject Property is located on the Cooper Point Peninsula, which extends north into the saline waters of the Puget Sound. The peninsula is generally characterized as a low-lying glacial plain with a central topographic high of approximately 300 feet above mean sea level (msl) that terminates in steep bluffs at the shores of Puget Sound (USGS, 2022; Drost et al., 1998).

The Subject Property is located within the Deschutes Watershed (Water Resource Inventory Area [WRIA] 13; Soundview, 2020) and straddles the boundary between the Green Cove Creek Watershed on the south and the Butler Cove Watershed on the north (Figure 3). Green Cove Creek discharges to Eld Inlet on the northwest side of the Cooper Point Peninsula. Butler Creek discharges to Budd Inlet on the east side of the peninsula.

The topography of the Subject Property has been modified over time by sand and gravel mining, and the related filling associated with reclamation (Figure 7). As documented in an Ecology 2016 inspection report, the Subject Property has been graded to form a stormwater detention basin and there is no discharge of stormwater to a surface water of Washington State (Ecology, 2016).

3.2 Geology and Hydrogeology

The geology of the Greater Puget Sound region is characterized by glacially derived sediments, which were deposited during several episodes, concluding with the Vashon Stade of the Fraser Glaciation, which ended approximately 12,500 years ago. The advance of the Vashon glacier deepened and widened north-south trending valleys. Thick bodies of sand, gravel, and till were deposited over the area. With the retreat of the glacier, ice-contact stratified drift was deposited over much of the area, followed by a period of alluvial valley filling, peat deposition, minor erosion, and soil development (AMEC, 2004).

Glacial drift deposits in the Subject Property vicinity consist of two general types, recessional outwash (Qvr; moderately to well-sorted sands and gravels) and till (Qvt; unsorted sand, gravel, and boulders in a silt and clay matrix (Drost et al., 1999). The surficial geology of the Cooper Point Peninsula consists primarily of these two units. Shallow, unconfined groundwater is present in the recessional outwash (Qvr) in the Subject Property vicinity, and perched groundwater conditions (local zones of saturation above the regional water table) may exist because of the low permeability of the

underlying glacial till (Drost et Al., 1998). However, few wells withdraw water from the Qvr because the unit is thin, or it lies above the water table and is unsaturated.

In the Subject Property vicinity, the Qvr is less than 25 feet thick (Drost et al., 1999). The thickness of Qvt, which is considered a confining unit between the overlying Qvr, where present, and the underlying advance outwash deposits (Qva), is mapped at more than 100 feet thick beneath the Subject Property (Drost et al., 1999).

Beneath these glacial drift deposits are advance outwash deposits (Qva; sand and subordinate gravel grading upward to well-rounded gravel in a sandy matrix interbedded with lenses of sand; Drost et al., 1999) overlying a fine-grained assemblage of clays and silt with minor amounts of sand, gravel, peat, and wood of the Kitsap Formation (Drost et al., 1998).

The Qva serve as a significant potable aquifer for the Subject Property region (Drost et al., 1999). The aquifer is confined between the underlying Kitsap Formation and the overlying glacial till and mapped to be more than 50 feet thick in the vicinity of the Subject Property. Groundwater within the Qva aquifer flows radially, from the central portion of the Cooper Point peninsula towards surface water of the Puget Sound on the west, north and east (Drost et al., 1999).

Native subsurface conditions at the Subject Property have been altered by historical sand and gravel mining and ongoing reclamation. Section 4 describes subsurface conditions observed at the Subject Property during previous investigations. In historically mined areas, which comprise the majority of the western portion of the Subject Property (Figure 4), much of the recessional outwash that overlies glacial till has been removed. On the eastern portion of the Subject Property, only a thin layer of recessional outwash overlies glacial till, and there is little to no disturbance of the native soils. Table 2 describes subsurface conditions documented in explorations completed previously by others. The thickness of fill, where present, ranges from a few inches to more than 15 feet and consists of reworked native soil, imported fill soil, woody debris, and construction debris that includes concrete, asphalt, rebar/metal debris, and milled timber. The subsurface observations, including thickness of fill and presence/absence of woody debris and construction debris, are provided on Figure 8.

3.3 Sensitive Receptor Evaluation

Soundview Consultants LLC (Soundview) investigated the Subject Property for potentially regulated wetlands, waterbodies, fish, and wildlife habitat and/or priority species in the fall of 2015. Five wetland areas were identified on the Subject Property (Soundview, 2020). The wetland areas are depicted on Figure 7. Wetlands A, B, and C are Category III wetlands with 140-foot standard buffers and wetlands D and E are Category IV wetlands with 50-foot standard buffers (Soundview, 2020). The primary source of wetland hydrology to wetlands A through D is likely a seasonally high groundwater table, direct precipitation, and surface runoff from adjacent uplands. Wetlands A, B and C discharge to stormwater ditches. Wetland D, which is more of an upland drainage swale than a wetland, is likely hydraulically connected to an adjacent sediment pond and discharges to the ground surface where water infiltrates into the underlying soils. Wetland E is located within a depression created by historical grading activities and drains via sheet flow across the surface to the south where water infiltrates

into the underlying soils. The primary sources of wetland hydrology to Wetland E are a seasonally high groundwater table provided through hillside seeps and surface runoff from adjacent uplands.

No streams or other potentially regulated fish or wildlife habitat were identified on or near the Subject Property (Soundview, 2020). A study completed by EnviroVector evaluated the potential occurrence of steelhead trout, a federally listed species, within 1,000 feet of the Subject Property (EnviroVector, 2020b). The study concluded that no steelhead trout were identified or are expected to occur within 1,000 feet of the Subject Property.

Associated Environmental Group, LLC (AEG) evaluated potential impacts to sensitive receptors, including four wetland areas and two nearby drinking water supply wells, using the existing Subject Property soil and groundwater data (AEG, 2021a). AEG concluded that groundwater is not likely hydraulically connected to surface water in the wetlands—based on the depth to water measured in the wells—so that contaminants in groundwater are unlikely to impact sensitive receptors in the wetland areas (AEG, 2021a). This conclusion is inconsistent with the wetland hydrology interpreted by Soundview to include a seasonally high groundwater table for all five of the wetland areas (Soundview, 2020). In addition, groundwater elevations calculated based on water levels in the monitoring wells indicate that there is potential discharge of shallow groundwater to the wetlands. Groundwater elevations were calculated for water levels measured at the Subject Property in 2020 and 2021 to range from 232 feet North American Vertical Datum 1988 (NAVD88) to 242 feet NAVD88 (Table 7). Except for Wetland E, which is slightly higher in elevation, the ground surface of the wetland areas on the Subject Property is below 230 feet NAVD88 (Figure 7).

AEG also concluded that well logs for surrounding drinking water supply wells indicate static water levels at 149 feet below ground surface (bgs) and that there are not likely to be impacts to drinking water, based on the vertical separation distance between contaminants in shallow groundwater at the Subject Property and the potable groundwater zone.

3.4 Groundwater Use

The potable supply in the Subject Property vicinity is predominantly groundwater (Thurston County, 2022). The entire Cooper Point Peninsula is identified by Thurston County as a Critical Aquifer Recharge Area (CARA), which is an area overlying significant groundwater resources and susceptible to groundwater contamination (Thurston County, 2022). Most of the Subject Property is a Category II CARA, characterized by high aquifer sensitivity (Thurston County, 2022).

Earth Solutions NW, LLC (2016) indicates that the surface mining of the recessional outwash sands and gravels at the Subject Property has resulted in the removal of soil that would exhibit a high susceptibility to shallow interflow aquifer recharge and the underlying, low permeability glacial till prevents direct recharge to the Qva aquifer. They conclude that the historical mining and grading activities at the Subject Property have lowered the susceptibility to adversely impact CARA resources (Earth Solutions NW, 2016).

The City of Olympia further identifies Drinking Water Protection Areas (DWPAs) surrounding each of their water supply wells. The nearest city DWPA is the Kaiser Well DWPA, located approximately 5,200 feet from the Subject Property (Olympia, 2022). The nearest wellhead protection area is located 2,800 feet north of the Subject Property (Figure 3).

One private water supply well is located on the Subject Property, near the location of the former mobile home. The well is not currently in use and the water well log has not been located to determine the well construction detail. The current condition of the water supply well on the Subject Property will be evaluated and it may be decommissioned if concerns about its integrity or its location relative to contaminants in groundwater are identified during the RI.

4 Previous Investigations and Existing Data

The investigation work conducted to date at the Subject Property to evaluate subsurface conditions and assess potential threats to human health and the environment is summarized in the following sections. In addition to this work, there have been several geotechnical investigations and sensitive area surveys and assessments to support planning and permitting for future redevelopment of the Subject Property. Those investigations are not summarized herein, but relevant and applicable data and information is referenced in this document.

4.1 Stemen Interim Action – 1993

In 1993, Stemen Environmental, Inc. (Stemen) decommissioned a 12,000-gallon UST that had been used for the storage of diesel fuel. The UST had reportedly been out of use for 10 years and was decommissioned by permanent removal from the Subject Property. Three soil samples were collected from the limits of the excavation following UST removal at depths of 9 to 13 feet. The samples did not contain diesel-range total petroleum hydrocarbons (TPH) at concentrations exceeding the applicable cleanup levels and Ecology indicated that the excavation could be backfilled (Stemen, 1993).

The report documents that oil-stained soil observed around the fill pipe was segregated and stored in a separate stockpile (Stemen, 1993). One soil sample was collected from the stockpile, which contained an estimated total of 25 cubic yards of soil that contained visible staining and petroleum-like odors. The results identified diesel-range TPH at a concentration of 390 milligrams per kilogram (mg/kg), which exceeded the Ecology cleanup level at the time, but is below the current Ecology MTCA Method A soil cleanup level of 500 mg/kg for unrestricted land uses.

The stockpile is no longer evident on the Subject Property, and there is no available documentation regarding the final disposition of the stockpile. However, the concentrations of TPH detected in the stockpile soil in 1993 are below current Ecology cleanup levels.

Key Findings and Data Gaps: Although oil-stained soil was observed around the fill pipe above the former UST, soil samples collected around the UST at the time of its removal did not contain TPH above the MTCA Method A cleanup level of 500 mg/kg. Ecology's *Site Assessment Guidance for Underground Storage Tank Systems* (Ecology, 2022b) requires collection and analysis of groundwater samples when field screening indicates that a release may have occurred, and the UST system is within 2 feet of the seasonal high-water table. **Groundwater quality in the former UST location is an outstanding data gap for the Subject Property.** Although ENPRO (2021) identified the former UST as a data gap, and completed investigation work to address the data gap, the location of that work is inconsistent with the historical reported location of the UST, and this data gap has not been sufficiently addressed.

4.2 Pacific Rim Test Pit Investigation – 2007

Pacific Rim Soil & Water (Pacific Rim) completed a test pit exploration program, in 2007, in support of a potential stormwater facility design project on the Subject Property. The work provided a narrative description of observed soil conditions in each of the 21 test pits (P1 through P21; Figure 7) and indicated that 'fill in at least two test pits smelled of diesel or oil' (Pacific Rim, 2007). Table 2 presents the Pacific Rim observations, including total exploration depths and observed subsurface conditions.

Soil conditions observed in 19 of 21 test pits consisted of disturbed surface soil or fill, with many test pits containing 10 or more feet of fill and woody debris. Wood, described as coarse, fine and/or loose woody debris, tree boles, large logs, lumber, and bark, was observed in test pits P6, P10, P11, P13, P14, P15, P17, P18, P19, and P20 (Table 2). Fill soil was observed to the total depth of test pit explorations P13, P17, P19, and P20, which range from 10 to 11 feet bgs (Table 2). No soil samples were collected for laboratory analysis during this investigation.

Key Findings and Data Gaps: Petroleum-like odors were noted in fill soil observed in pits P10 and P17 between the ground surface and depths of 10 and 6 feet bgs, respectively. The subsurface conditions at test pits P10 and P17 were further evaluated during the ENPRO 2020/2021 investigation at borings B2/MW2 and B3/MW3, respectively. The ENPRO 2020/2021 investigation also included further evaluation of debris fill areas observed in test pits P11, P12, P13, P15, P18, and P19. The key findings and data gaps from the ENPRO investigation are summarized in Section 4.5.

4.3 RNS Subsurface Investigation – 2008

Robinson, Noble & Saltbush, Inc. (RNS) completed a subsurface investigation, in 2008, to characterize the area of suspected contamination,[3] and the extent and general composition of fill materials present on the Subject Property. The work consisted of the excavation of 32 exploratory test pits (TP1 through TP32; Figure 7) to depths ranging from 8 to 15 feet bgs, and collection and laboratory analysis of 32 soil samples for diesel-range TPH. RNS does not identify the sample collection depths for the 32 soil samples,

[3] Based on the observed subsurface conditions during the Pacific Rim investigation and "eyewitness testimony from an anonymous source that had been employed at the gravel pit when it was active" (RNS, 2008).

but states that they "typically included the fill-native material interface and the capillary fringe above the groundwater surface" (RNS, 2008). The data for soil samples collected by RNS is provided on Table 3.

There are no exploration logs or details in the report pertaining to the observed subsurface conditions except for a map depicting the interpreted surface geology and depth to native soil and the excerpted text below.

> *Fill material was found in all test pits except for Test Pits 13 and 33. These two test pits contained recessional outwash sand only. The majority of the fill on the subject site consists of reworked material from the surrounding region and counts for approximately 70% of the fill found in the test pits. The fill materials range from compact fine silt, fine sand with clay, silty sand and gravel, sand and gravel, and gravel. The remaining portion of the fill consists of wood debris in various forms, construction debris (i.e. asphalt, concrete, brick), and solid waste. While wood debris was found in 20 of the test pits, a considerable amount was found in Test Pits 3, 11, 17, 19, 21, 27, 28, and 31. Test pit 11 has a thick layer of wood chips from five to eight feet bgs, and Test Pit 31 has a layer consisting of approximately 20% wood chips from five to twelve feet bgs. The other types of fill were distributed randomly throughout the site. However, Test Pits 11, 17, and 32 had a higher occurrence of construction debris and/or solid waste than the other pits. Field screening of these pits did not indicate the presence of contaminants.*

Key Findings and Data Gaps: Concentrations of TPH were detected above the laboratory detection limits in only 1 of the 32 soil samples collected as part of the RNS investigation (Table 3). Oil-range TPH were reported in the soil sample collected from test pit TP6 at a concentration of 370 mg/kg, which is below the MTCA Method A cleanup level of 2,000 mg/kg (Table 3). The TPH product was interpreted as "…heavy oil, most likely motor oil for diesel engines…" (RNS, 2008). Test pit TP6 is in the same area as Pacific Rim test pit P17, where petroleum hydrocarbons were also detected in soil; this area was further investigated by ENPRO during their 2020/2021 investigation. The findings of that investigation and any outstanding data gaps pertaining to the observations at RNS test pit TP6 are discussed in Section 4.5.

4.4 Ages Site Investigations – 2015

Ages Engineering, LLC (Ages) conducted site investigation work in 2015 that included a geotechnical subsurface investigation and sampling and testing of "several piles of soil and tree debris" (Ages, 2015a and 2015b).

Eight samples were collected from the piles and submitted for laboratory analysis of petroleum hydrocarbons and/or metals; however, there is poor documentation regarding the sample locations, sampled materials, sampling rationale, approach, and results.[4] Observations made at the time of the sample collection did not identify visual or olfactory evidence of contaminated soil or hazardous waste (Ages, 2015b). Four of the samples were analyzed for diesel-range petroleum hydrocarbons. The laboratory analytical results did not detect concentrations of petroleum hydrocarbons in the samples above the MTCA cleanup levels. The other four samples were analyzed for metals, including all 23 metals

[4] For this reason, these data are not included on figures or maps that accompany this report.

in the U.S. Environmental Protection Agency (EPA) Target Analyte List (TAL) plus boron, lithium, molybdenum, phosphorus, sulfur, silicon, tin, strontium, titanium, and yttrium. Ages concludes that all the heavy metals and petroleum levels detected in the sampled material were well below state and federal cleanup levels (Ages, 2015b).

The geotechnical investigation consisted of the excavation of 13 exploratory test pits to depths ranging from 5 to 13 feet bgs (ATP-1 through ATP-13; Figure 7; Ages, 2015a). Soil conditions observed in the test pits are consistent with subsurface conditions observed by others during previous investigations on the Subject Property and include variable depths of fill soil that contains tree roots and other woody debris overlying native soil that Ages described as outwash (Ages, 2015a).

Key Findings and Data Gaps: Laboratory analytical data for soil and tree debris from the Ages investigation has limited usefulness because there is poor documentation regarding the sample locations and sampled materials. However, the results did not identify TPH or metals in the sampled materials at concentrations that warrant further evaluation.

4.5 ENPRO Investigation – 2020/2021

ENPRO Environmental (ENPRO) conducted investigation activities on the Subject Property, in 2020 and 2021, to address data gaps with respect to contaminant sources, migration, and exposure pathways. The investigation work was described in a Remedial Investigation Work Plan (ENPRO, 2020), which was finalized after incorporating comments from Ecology provided during an informal review of the document.

The work consisted of the drilling of 21 soil borings (B1/MW-1 through B11/MW-11 and B12 through B21), construction of a permanent groundwater monitoring well in 11 of the borings (MW-1 through MW-11), and collection and laboratory analysis of soil and groundwater samples. The exploration locations are shown on Figure 7. A draft Remedial Investigation Report (ENPRO, 2021) was prepared to present the results of most of this work and is included in Appendix C for informational purposes only. The ENPRO draft Report was prepared independently and has not been reviewed or approved by Ecology. Borings B12 through B21 were completed by Associated Environmental Group, LLC (AEG; AEG, 2021) after preparation of the ENPRO report, as discussed further below.

ENPRO identified contaminants of concern for their investigation based on the contaminant source and data gap that the work was investigating. Select soil and groundwater samples collected by ENPRO were analyzed for the following contaminants (collectively, the COPCs):

- Gasoline-, diesel-, and oil-range TPH
- Volatile organic compounds (VOCs), including benzene, toluene, ethylbenzene, and xylenes (BTEX)
- Metals, consisting of the Resource Conservation and Recovery Act (RCRA) 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), copper, and hexavalent chromium in soil

- Total and dissolved metals, consisting of the RCRA 8 metals, copper, iron, and manganese in groundwater
- Polycyclic aromatic hydrocarbons (PAHs)
- Polychlorinated biphenyls (PCBs)
- Pentachlorophenol (PCP)

The specific data gaps identified by ENPRO, the work completed to address the data gaps, and the results of the investigation are as follows:

- **The quality of soil and groundwater in the vicinity of the former UST.** Boring B1 was advanced in the area where ENPRO interpreted the former UST to have been located; a monitoring well (MW-1) was constructed in the boring; two surface soil samples (SS1 and SS2) were collected in the estimated location of a former TPH-impacted soil stockpile; and soil and groundwater samples were submitted for laboratory analysis. However, further evaluation of historical documentation indicates that the former UST was located approximately 700 feet from where the ENPRO explorations were completed. **Groundwater quality in the former UST location is an outstanding data gap for the Subject Property.**
- **The quality of surface soil in the former garage.** Two surface soil samples (SS5 and SS6) were collected from the former interior of the dirt-floored garage where stained gravel/soil was previously observed, and drums were reportedly stored. Concentrations of TPH, metals, and PAHs were detected in both soil samples below the MTCA cleanup levels (Table 4). The surface soil data indicate that operations in the former garage did not result in releases of hazardous substances at concentrations that pose a risk to human health or the environment.
- **The quality of surface soil in the former garage area.** Two surface soil samples (SS3 and SS4) were collected from the north side of the former garage, where a small area (36 square foot) of stained gravel/soil was previously observed. In addition, two surface soil samples (SS7 and SS8) were collected from the former garage area where historical operations included an AST, drum storage, and vehicle maintenance. Concentrations of TPH, metals, and PAHs were detected in both soil samples, below the MTCA cleanup levels with one exception. Concentrations of total carcinogenic PAH (cPAH) toxic equivalent concentration (TEQ) were reported in the sample collected from SS3 at 0.12 mg/kg, which slightly exceeds the MTCA Method A cleanup level of 0.1 mg/kg (Table 4). The presence of cPAHs in soil at these low concentrations can be associated with *de minimus* releases of petroleum products from vehicle access and/or parking near the former garage or fill material. Nearby boring B8/well MW8 was advanced to evaluate the quality of fill soil in this vicinity, as described further below. Concentrations of cPAHs were not detected above the laboratory reporting limits in soil or groundwater samples collected from boring B8/well MW8, suggesting that the cPAHs are attributable to vehicle access and/or parking in the former garage area.
- **Nature and extent of contamination associated with debris fill areas.** Nine soil borings (B2 through B10) were advanced to evaluate fill, wood, construction

debris, and/or petroleum-like odors noted in previous explorations completed on the Site. The borings were completed as monitoring wells (MW2 through MW10) and soil and groundwater samples were collected for laboratory analysis. The explorations and the subject of their completion is as follows:

- Boring B2/well MW2 evaluated soil and groundwater in the vicinity of Pacific Rim's test pit P10, where petroleum-like odors were noted in fill material located between the ground surface and 10 feet bgs. Soil samples collected from boring B2 at depths of 7 and 15 feet bgs did not contain any of the COPCs at concentrations above the MTCA cleanup levels (Table 5). Groundwater samples collected from well MW2 contained TPH D+O, arsenic, iron, and manganese at concentrations exceeding the MTCA cleanup levels (Table 7). The soil data indicate that hazardous substances are not present in soil at the test pit P-10/boring B2 location at concentrations that pose a risk to human health or the environment. Groundwater quality at the Subject Property is discussed in Section 4.6.3.
- Although boring B2/MW2 was completed to evaluate the nature and extent of contamination associated with fill observed in test pit P10, the soil observed in boring B2 consisted of native soil and no debris fill was observed (Table 2). Although the locations of historical explorations are difficult to identify with certainty, it appears that buried debris fill exists on the Subject Property between boring B2/MW2 and the north Subject Property boundary. In addition, groundwater at well MW2 contains concentrations of COPCs above the cleanup levels. **The nature and extent of contamination associated with debris fill in the P10/TP32 area is an outstanding data gap.**
- Boring B3/well MW3 evaluated soil and groundwater in the vicinity of Pacific Rim's test pit P17 and RNS's test pit TP6, where petroleum-like odors were noted in fill material located between the ground surface and 6 feet bgs and concentrations of oil-range TPH were detected below the MTCA cleanup level. Soil samples collected from boring B3 at depths of 7, 10, and 15 feet did not contain concentrations of any of the COPCs with the following exception: TPH D+O was detected in the soil sample collected from a depth of 10 feet bgs at 5,200 mg/kg, which exceeds the MTCA cleanup level of 2,000 mg/kg (Table 5). A deeper soil sample, collected from 15 feet bgs, did not contain TPH D+O above the MTCA cleanup level. Boring B21 was advanced to the south of boring B3, and soil samples collected at depths of 5 and 10 feet bgs did not contain TPH D+O above the MTCA cleanup level, bounding the extent of TPH D+O in soil to the south (Table 5; Figure 9). Groundwater samples collected from well MW3 contain TPH-D+O, iron, and manganese at concentrations exceeding the MTCA cleanup levels (Table 7). **The nature and extent of TPH D+O in soil to the west, north, and east of boring B3 is an outstanding data gap.**
- Boring B4/MW4 was completed near Pacific Rim's test pit P11, where the upper 3 feet of fill, which extends to 12 feet bgs, contains 12- to 18-inch-diameter tree boles. Native gravelly sand was documented at 12 feet bgs (Table 2). Soil samples collected at depths of 7 and 15 feet bgs from boring

B4, in fill and native soil, respectively, did not contain concentrations of the COPCs above the MTCA cleanup levels (Table 5). Groundwater samples collected from well MW4 contain TPH-D+O, iron, and manganese at concentrations exceeding the MTCA cleanup levels (Table 7). The soil data indicate that hazardous substances are not present in soil at the test pit P-11/boring B4 location at concentrations that pose a risk to human health or the environment.

- Boring B5/MW5 was completed near Pacific Rim's test pit P12 where 8 feet of 'massive random fill' was observed overlying a disturbed historical surface of native sand (Table 2). Soil samples collected at depths of 7 and 15 feet bgs at boring B5 did not contain concentrations of the COPCs above the MTCA cleanup levels (Table 5). Groundwater samples collected from well MW5 contain TPH-D+O, iron, and manganese at concentrations exceeding the MTCA cleanup levels (Table 7). The soil data indicate that hazardous substances are not present in soil at the test pit P-12/boring B5 location at concentrations that pose a risk to human health or the environment.
- Boring B6/MW6 was completed near Pacific Rim's test pit P13 where fill material observed between 4 and 10 feet bgs contained asphalt and concrete, and the test pit was terminated in loose 100 percent woody debris at 11 feet bgs (Table 2). Soil samples collected at depths of 7 and 15 feet bgs at boring B6 did not contain concentrations of the COPCs above the MTCA cleanup levels (Table 5). Groundwater samples collected from well MW6 contain TPH-D+O, iron, and manganese at concentrations exceeding the MTCA cleanup levels (Table 7). The soil data indicate that hazardous substances are not present in soil at the test pit P-13/boring B6 location at concentrations that pose a risk to human health or the environment.
- Boring B7/MW7 was completed near Pacific Rim's test pit P14 where mixed fill that includes wood and construction debris were observed between 2 and 12 feet bgs (Table 2). Soil samples collected at depths of 7 and 15 feet bgs at boring B7 did not contain concentrations of the COPCs above the MTCA cleanup levels (Table 5). Groundwater samples collected from well MW7 contain TPH-D+O, iron, and manganese at concentrations exceeding the MTCA cleanup levels (Table 7). The soil data indicate that hazardous substances are not present in soil at the test pit P14/boring B7 location at concentrations that pose a risk to human health or the environment.
- Boring B8/MW8 was completed near Pacific Rim's test pit P15 where 7 feet of fill material containing concrete chunks and woody debris was observed overlying native sand (Table 2). Soil samples collected at depths of 7 and 15 feet bgs at boring B8 did not contain concentrations of the COPCs above the MTCA cleanup levels (Table 5). Concentrations of COPCs were not detected in groundwater samples collected from well MW8 above the MTCA cleanup level except for manganese, which was detected exceeding the cleanup level in the sample collected in November 2020, but was below the cleanup level in the sample collected in May 2021 (Table 7). The soil data indicate that hazardous substances are not present in soil at the test pit P15/boring B8 location at concentrations that pose a risk to human health or the environment.

- Boring B9/MW9 was completed near Pacific Rim's test pit P18 where 9 feet of fill soil contained solid waste (tire fragments and wire) and mixed coarse and fine woody debris (Table 2). Soil samples collected at depths of 7 and 15 feet bgs at boring B9 did not contain concentrations of the COPCs above the MTCA cleanup levels (Table 5). The soil data indicate that hazardous substances are not present in soil at the test pit P18/boring B9 location at concentrations that pose a risk to human health or the environment. Groundwater from well MW9 was collected and analyzed in May 2021 and contained TPH D+O, iron, and manganese at concentrations exceeding the MTCA cleanup levels (Table 7). However, there was insufficient water in well MW9 for collection of a sample in November 2020 and there was very little water in the well in May 2021 (Table 8) so the groundwater data may not be representative of groundwater conditions in the vicinity of the well.
- Boring B10/MW10 was completed near Pacific Rim's test pit P19 where fill material was observed to the total depth of the exploration at 11 feet bgs and contained an estimated 25 percent bark between approximately 3.5 feet and 11 feet bgs (Table 2). Wood debris was observed in the upper 7 feet of boring B10/MW10 with native sand interpreted to be present at approximately 7 feet bgs (Table 2). Soil samples collected at depths of 7 and 15 feet bgs at boring B10 did not contain concentrations of the COPCs above the MTCA cleanup levels (Table 5). The soil data indicate that hazardous substances are not present in soil at the test pit P19/boring B10 location at concentrations that pose a risk to human health or the environment. Groundwater was not observed at the time of drilling at boring B10; however, monitoring well MW10 was installed with a screened interval constructed between 5 and 15 feet bgs. Well MW10 did not contain sufficient water in November 2020 or May 2021 to allow for groundwater sample collection and analysis (Table 8).

- **Nature and extent of contamination associated with fill piles and log/materials storage areas.** Soil samples were collected from one boring (B11) and 14 surface locations (SS9 through SS12 and SS16 through SS25), where fill piles (including imported soil, construction debris, and wood debris) and log/materials storage areas were reported by others or observed in historical aerial photographs. The boring was completed as a monitoring well (MW11) and soil and groundwater samples were submitted for laboratory analysis. The results did not detect any of the COPCs in soil or groundwater at concentrations exceeding the MTCA cleanup levels, including oil-range petroleum hydrocarbons, PAHs, metals, and PCP, which can be associated with treated wood (Tables 4 and 7). The soil data indicate that the fill piles and log/materials storage areas do not represent a source of hazardous substances to the Subject Property.
- **Potential impacts to wetland sediment.** Three surface soil samples (SS13 through SS15) were collected between the buffer area of Wetland B, between areas of historical fill placement and/or ground disturbance, and Wetland B (Figure 9). The results did not detect concentrations of COPCs above the MTCA soil cleanup levels, which indicates that the erosion and transport of fill via overland flow to Wetland B is not a complete contaminant migration pathway at

the Subject Property (Table 4). **The erosion and transport of fill via overland flow to Wetlands A, C, D, and E has not been evaluated as a contaminant migration pathway and is an outstanding data gap. In addition, the discharge of groundwater to all Subject Property wetlands is a potential contaminant migration pathway that has not been evaluated.**

- **Groundwater characteristics of the perched water bearing zone.** A total of eleven groundwater monitoring wells (MW1 through MW11) were installed to address the data gaps regarding groundwater quality and to evaluate groundwater flow direction and gradient across the Subject Property. As discussed in Section 4.6.3, the presence, nature, and extent of contaminants in shallow groundwater has not been fully evaluated and is a data gap for the Subject Property.

Borings B12 through B21 were completed by AEG in June 2021, after the drilling and sampling work that was conducted in November 2020, and two rounds of groundwater monitoring and sampling at the monitoring wells in November 2020 and May 2021. The objectives of the June 2021 work are not clear; however, soil and groundwater sample analyses were limited to diesel-range TPH, arsenic, iron, and manganese (Table 6). Based on this, we presume that the June 2021 work was conducted to further evaluate the nature and extent of TPH in groundwater; however, there are no details pertaining to the groundwater sampling depths from borings B12 through B21. Therefore, the groundwater data from these explorations have limited usefulness in addressing data gaps on the Subject Property.

The surface soil and subsurface soil data collected during the investigation completed by ENPRO and AEG in 2020 and 2021 is summarized in Tables 4 and 5, respectively. Reconnaissance groundwater data, for samples collected from temporary borings, is provided in Table 6. Groundwater data collected from the monitoring wells is summarized in Table 7. Groundwater samples were not collected from well MW-10 because the well did not contain sufficient water during either of the sampling events (Table 8). Well MW-9 was sampled in May 2021; however, the water level was quickly lowering during purging, so a sample was collected before stabilization occurred and may not be representative of groundwater quality. A comprehensive summary of the existing data is provided in the following section.

4.6 Summary of Existing Data

This summary of existing data includes visual observations of subsurface conditions made during previous geotechnical and environmental investigations at the Subject Property, and results for soil and groundwater samples collected between 2008 and 2021.

4.6.1 Soil and Groundwater Conditions

Historically, Parcel A of the Subject Property was used as a gravel pit and a log and lumber storage yard from at least 1960 through the 1990s (ENPRO, 2020). The sands and gravels of the surficial recessional outwash (Qvr) were mined from across portions of the Subject Property beginning in the 1960s (AMEC, 2004). Based on the amount of subsurface fill observed in explorations completed to date on the Subject Property, the premined thickness of the recessional outwash was between approximately 10 and 20 feet. On the eastern portion of the Subject Property, which remains relatively undisturbed, glacial till is generally observed at depths of less than 5 feet bgs, but was

noted as deep as 7.5 feet bgs (RNS, 2008). Mining reclamation included infilling excavations, mostly on Parcels A and B, with fill soils and solid waste (construction debris, wood waste, etc.).

The existing data and information have been compiled to evaluate subsurface conditions at the Subject Property. The subsurface soil conditions documented at each subsurface exploration completed to date are summarized on Table 2; however, the source documents should be referenced for additional detail and information. The data collected during previous investigations has been compiled to evaluate sufficiency of those investigations to characterize the depth and quality of fill at the Subject Property. Where there is conflicting information about subsurface conditions, location accuracy and available backup information were considered in the interpretation of subsurface conditions. For example, there is poor location accuracy for the Pacific Rim test pits so subsurface conditions for nearby explorations with location information (such as the ENPRO and AEG 2020 and 2021 explorations) are considered to provide a better representation of Subject Property conditions. Similarly, many of the fill observations documented by RNS are depicted as depths on a single map and there are no exploration logs, soil descriptions, or details in the report pertaining to the observed subsurface conditions. Therefore, subsurface conditions for nearby explorations that include detailed descriptions of subsurface conditions provide a better representation of Subject Property conditions. **The potential for leaching of contaminants from fill to groundwater in those portions of the Subject Property where the depth and quality of fill has not been fully characterized is a data gap and is discussed in Section 4.6.3.**

Buried wood debris has been sporadically observed in fill across the Subject Property, ranging from bark and wood chips to large logs, roots, and tree boles (trunks). Figure 10 depicts the locations where buried wood debris has been observed in subsurface explorations. The descriptions of observed buried wood debris are provided on Figure 10 for six areas of the Subject Property for spatial reference. For RI purposes, these areas are representative of any location where buried wood debris may be located on the Subject Property because they contain all types, thicknesses, and locations of wood debris that have been observed. The presence and nature of buried wood debris in other locations are described in Table 2. **The potential generation of methane from the degradation of buried wood debris is an outstanding data gap for the Subject Property.**

The depth to groundwater measured in Subject Property monitoring wells during sampling events in November 2020 and May 2021 ranged from 3.2 feet to 14 feet below the top of the monitoring well casings (Table 8). Groundwater elevations calculated using these water level measurements indicate that a groundwater high bisects the Subject Property from southwest to northeast (Figures 11 and 12). Groundwater at the Subject Property appears to flow predominantly towards the northwest (west of the groundwater high) or towards the east-southeast (east of the groundwater high). This may be a localized condition associated with surface drainage and localized groundwater flow towards Wetlands B and C. According to Earth Solutions' Hydrogeologic Report (Earth Solutions, 2016), shallow groundwater at the Subject Property is presumably connected to a perched aquifer, which is hydrologically separated from the larger, deeper regional aquifer by glacial till, which acts as a confining layer between the two aquifer systems.

4.6.2 Soil Quality

The existing soil quality data for the Subject Property consists of the following:

- A total of 33 soil samples collected from 33 RNS test pit locations (Table 3).
- A total of 25 surface soil samples collected from 25 locations by ENPRO in 2020 (Table 4).
- A total of 37 subsurface soil samples collected from 21 soil borings by ENPRO and AEG in 2020 and 2021 at depths ranging from 5 to 18 feet bgs (Table 5).

Concentrations of gasoline-, diesel-, and oil-range TPH were not detected above the laboratory reporting limits in any of the soil samples collected during the 2008 RNS investigation (Table 3). However, these data have limited usefulness because the sample depths are not documented.

The surface soil data did not identify any of the COPCs at concentrations exceeding the MTCA Method A/B soil cleanup levels except for two locations (SS-3 and SS11), where the concentration of total cPAHs is above the MTCA Method A cleanup level (Table 4).

The subsurface soil data includes a total of 37 samples (not including 4 field duplicates), with 6 representing fill soil and 31 representing native soil (Table 5). Of these data, one sample of fill soil collected from 10 feet bgs at boring B3 contained total diesel-range extended petroleum hydrocarbons (TPH-D+O)[5] above the MTCA Method A cleanup level (Table 5). Boring B3 was advanced near the location of Pacific Rim test pit P17, where petroleum-like odors were noted (Figure 9).

4.6.3 Groundwater Quality

The groundwater data for the Subject Property includes eight reconnaissance samples collected from temporary soil borings, and two rounds of groundwater monitoring and sampling at the 11 monitoring wells. The groundwater analytical data is provided in Tables 6 and 7 for the reconnaissance and well samples, respectively. The following analytes have been detected in groundwater at concentrations that exceed the MTCA Method groundwater cleanup levels for unrestricted land uses, as shown on Figure 13:

- TPH-D+O
- Arsenic, iron, and manganese

The reconnaissance groundwater samples collected from borings B12 through B21, and groundwater samples collected from monitoring wells B1/MW1, B8/MW8, AND B11/MW11 did not contain concentrations of TPH-D+O above the laboratory reporting limits (Tables 6 and 7; Figure 13). Concentrations of TPH-D+O were detected above the MTCA Method A groundwater cleanup level of 500 micrograms per liter (µg/L), during one or both sampling events, at wells B2/MW2 through B7/MW7 and B9/MW9 (Table 7; Figure 13).

[5] Ecology requires summing reported concentrations of diesel- and oil-range petroleum hydrocarbons for comparison to the MTCA Method A cleanup level unless it can be determined that two separate petroleum products are present.

The presence of nonpetroleum organic matter (such as leaf litter, bark, and peat) may result in elevated or false positive reported concentrations of TPH-D+O in groundwater. All of the monitoring wells that contain TPH-D+O at concentrations above the MTCA Method A groundwater cleanup level are located within areas of the Subject Property where both peat and buried wood debris have been observed in subsurface explorations.

Arsenic is reported above the MTCA cleanup level of 8 µg/L in wells B2/MW2, B4/MW4, B5/MW5, B6/MW6, and B7/MW7, which are located in the northwest corner of Parcel A and the southeast corner of Parcel B (Figure 13). Iron and manganese were detected in groundwater at concentrations exceeding the MTCA cleanup levels at all Subject Property monitoring wells, except B1/MW1 and B11/MW11 (Table 7). In all well locations where arsenic, iron, and manganese were detected in groundwater above their respectively cleanup levels, there is either organic matter (peat and organic-rich soil) documented in the borehole itself or woody debris observed in nearby subsurface explorations. In addition, concentrations of TPH-D+O are above the MTCA cleanup level in groundwater in most wells (all except well B8/MW8) where iron and manganese are detected above the MTCA cleanup levels. The presence of organic carbon in groundwater, associated with either organic matter and/or petroleum hydrocarbons, may be a source mechanism for mobilization of metals to groundwater as further discussed in Section 5.1.4.

The presence, nature, and extent of contaminants in shallow groundwater has not been fully evaluated and is a data gap for the Subject Property, specifically:

- Petroleum in groundwater. The potential interference of organic matter on reported concentrations of diesel- and oil-range petroleum hydrocarbons in groundwater. Additional groundwater characterization is necessary to evaluate the presence, nature, and extent of petroleum hydrocarbons in groundwater at the Subject Property.
- Nature and extent of contaminants in groundwater. The groundwater flow direction at the Subject Property is predominantly towards the northwest, although existing data suggest that a groundwater high exists on the southeast portion, beyond which, groundwater flows to the east-southeast. Additional data is warranted to evaluate the nature and extent of contaminants in groundwater. Specific groundwater data gaps and the proposed work to address them are identified in Section 7.4.6.
- Fill leaching to groundwater. Presence, nature, and extent of contaminants in groundwater from areas of the Subject Property, where the total depth and quality of fill has not been fully evaluated, including:
    - The northwest corner of the Subject Property at P10, TP32, and TP12.
    - The west-central portion of the Subject Property at ATP-10, P13, and TP11.
    - The east-central portion of the Subject Property at P20, TP27, TP28, P19, and TP31.

- Background groundwater quality. Seven of the existing eleven monitoring wells are partially screened within fill material. Additional groundwater characterization may be necessary to evaluate background groundwater quality to evaluate the source, nature, and extent of contaminants in groundwater attributable to the historical uses of the Subject Property.

5 Preliminary Conceptual Site Model

A preliminary CSM for the Subject Property has been developed to evaluate potential pathways by which receptors can be exposed to hazardous substances and to identify data gaps in the existing site characterization data. The results of the RI will be used to refine this CSM as a basis for defining the extent of the Site, identification of the Site COPCs, and developing the cleanup levels. The preliminary CSM is provided below and includes a discussion of known and suspected source areas on the Subject Property, the preliminary COPCs based on existing data and information, and potential contaminant migration and exposure pathways.

5.1 Known and Suspected Sources

Based on the historical information, the potential known and suspected sources of hazardous substances on the Subject Property consist of the following:

- The former UST and historical structures located in the south-central portion of the Subject Property, which Ecology has suggested may have been used as garage or maintenance areas prior to building the home and garage in the southwest portion of the Subject Property, although there is no historical information to indicate this.
- The former garage area that included an AST, the storage of drums of oil and drive train fluid in and around the garage, and surface staining in the garage and north of the garage, where equipment and vehicles were parked.
- Fill material used in reclamation of the mined areas of the Subject Property, including any hazardous substances generated or mobilized by the decomposition of fill material.

Although there is documentation of the storage of logs on the Subject Property, the historical presence of log piles alone is not an environmental condition that would warrant identification as a known or suspected source of hazardous substances on the Subject Property.

The data from soil and groundwater collected on the Subject Property during previous investigations has not identified the presence of contaminants that would indicate the storage of treated wood, disposal of toxic waste, ‘waste from Weyerhaeuser,’ Agent Orange (reported to Ecology by individuals using the state Environmental Incident Reporting system), or potential dumping into the septic system (identified by Robinson Noble as a potential environmental concern [Robinson Noble, 2019]). The subsurface conditions observed at the Subject Property have indicated significant volumes of fill

soil, in places mixed with construction debris and woody debris. Woody debris consists primarily of tree trunks and bark with some localized areas where milled timber was observed. Treated wood was not observed to be present anywhere on the Subject Property and the laboratory analytical results for soil samples collected during previous investigations, including those from fill horizons containing woody debris, have not detected concentrations of wood-treating chemicals that would suggest the storage or disposal of treated wood. Specifically, surface and subsurface soil samples were collected from 15 locations in 2020, where fill piles and/or log/materials storage areas were reported by others; the results of soil and groundwater samples collected from these locations did not detect any of the COPCs in groundwater above the MTCA cleanup levels. In addition, the soil and groundwater data collected in 2020 and 2021 do not identify the presence of hazardous substances in soil or groundwater that would indicate disposal of other types of waste.

A discussion of the potential known and suspected sources of hazardous substances on the Subject Property is provided in the following subsections.

5.1.1 Former UST

The former diesel fuel UST was decommissioned by permanent removal in 1993 (Stemen, 1993). Soil samples collected at the limits of the excavation did not contain concentrations of petroleum hydrocarbons above cleanup levels, and the excavation was backfilled. Soil removed from the excavation that contained petroleum-like odors was segregated and stockpiled from soil containing no visual or olfactory evidence of petroleum hydrocarbons, and a characterization sample was collected for laboratory analysis. The concentrations of TPH detected in the stockpile soil in 1993 are below current Ecology cleanup levels. However, groundwater quality in the vicinity of the former UST has not been evaluated.

5.1.2 Former Garage Area

The former garage area includes the former, dirt-floored garage where small patches of stained soil were observed, historical locations of approximately 10 55-gallon drums of oil and drive-train fluid stored in and around the garage, areas of surface staining outside of the garage to the north, where equipment and vehicles were reportedly parked, and an AST (AMEC, 2004).

Four subsurface explorations have been advanced in the former garage area, including three exploratory test pits in 2008 (TP1 through TP3) and boring/monitoring well B8/MW8 in 2020 (Figure 7). In addition, six surface soil samples were collected from the former garage area in 2020 (SS3 through SS8; Figure 7). A total of six surface soil and six subsurface soil samples have been collected from the former garage area and submitted for laboratory analysis. The analytical results for these 12 soil samples did not detect petroleum hydrocarbons, BTEX, metals, PAHs, PCBs, or VOCs above the MTCA soil cleanup levels, with one exception. Concentrations of total cPAH TEQ were detected at 0.12 mg/kg in surface soil sample SS3, which is less than two times the MTCA Method A soil cleanup level of 0.1 mg/kg (Table 4).

Groundwater samples were collected from monitoring well B8/MW8 in November 2020 and May 2021. The laboratory analytical results did not detect concentrations of

petroleum hydrocarbons, BTEX, metals, PAHs, PCBs, or VOCs above the MTCA cleanup levels for groundwater, with one exception. Concentrations of manganese (both total and dissolved) were reported at 2,500 µg/L in November 2020, which is above the MTCA cleanup level of 750 µg/L (Table 7). As discussed in Section 5.1.4, manganese can be elevated in the presence of organic-rich sediments and/or organic materials (such as buried wood waste), due to geochemically reducing conditions that result from the depletion of dissolved oxygen during the decomposition of organic carbon.

The data collected from the former garage area do not indicate the presence of petroleum or petroleum-related contaminants in soil or groundwater at concentrations exceeding the MTCA cleanup levels for unrestricted land uses, except for a single, low concentration of total cPAH TEQ that can be attributed to *de minimus* surface soil staining in a former vehicle parking area. Sufficient data has been collected to conclude that the former garage area is not a source of contaminants to soil or groundwater at the Subject Property.

5.1.3 Fill Material

The results of investigations completed to date on the Subject Property show that there is the widespread presence of fill material of variable content. RNS estimates that reworked native soil accounts for approximately 70 percent of the fill observed in their test pit explorations (RNS, 2008). Pacific Rim indicated that much of the fill observed in their test pits was gravel and soil but identified buried debris at the Subject Property that frequently included large chunks of concrete, asphalt, large (12- to 18-inch-diameter) tree boles (trunks), and nondescript construction debris with lesser observations of logs and timber, rebar, wire, metal strips/debris, cedar planks, and bark (Pacific Rim, 2007). ENPRO completed investigation work to evaluate the nature and extent of contamination associated with fill material, including those fill materials identified by Pacific Rim and RNS.

The potential concerns associated with fill material consist of the following:

- The quality of fill soil that may have been imported from unknown sources off the Subject Property, and the potential leaching of contaminants present in imported soil to groundwater.
- The potential leaching of contaminants from buried anthropogenic debris used for fill (concrete, metal, asphalt) to groundwater.
- The generation of methane from the degradation of buried wood waste and the resulting anaerobic, geochemically reducing subsurface conditions.

Samples of fill soil collected and analyzed to date have not contained concentrations of contaminants that pose a risk to human health or the environment, with two exceptions. Surface soil samples collected from two locations contain total cPAHs at concentrations of 0.12 and 0.54 mg/kg, which exceed the MTCA Method A cleanup level of 0.1 mg/kg. PAH compounds have low aqueous solubilities and are hydrophobic, so they do not readily leach from soil to groundwater. Data collected from the Subject Property monitoring wells over two sampling events did not detect total cPAHs in groundwater above the laboratory reporting limits, demonstrating total cPAHs are not leaching from soil at levels that result in exceedances of the MTCA groundwater cleanup level.

A soil sample collected from a depth of 10 feet bgs at boring B3/MW3 contains TPH-D+O at a concentration of 5,200 mg/kg, exceeding the MTCA Method A cleanup level of 2,000 mg/kg. Monitoring well B3/MW3, constructed in the same boring, is screened across the soil sample interval from where the oil-range TPH exceedance was reported, from
5 to 15 feet bgs. The results of two groundwater sampling events at well B3/MW3 reported TPH-D+O below and just above the MTCA Method A cleanup level of 500 µg/L, with reported concentrations of 365 µg/L and 635 µg/L (Table 7). The data indicate that the soil leaching to groundwater pathway may be resulting in exceedances of the MTCA Method A cleanup level for groundwater at this location.

5.1.4 Redox-Sensitive Inorganics

Arsenic, iron, and manganese are naturally occurring in soil, rocks, and minerals, and where water comes into contact with these materials, can be dissolved into groundwater. Biodegradation of organic contaminants, like petroleum hydrocarbons, or the decomposition of organic matter can deplete oxygen in groundwater, creating an environment where metals that are sensitive to redox conditions (like iron and manganese) are reduced to more soluble and mobile valence states. Elevated concentrations of arsenic, iron, and manganese in groundwater, relative to background groundwater quality, can be associated with anaerobic groundwater caused by the contaminant biodegradation and/or the decomposition of organic matter.

Arsenic, iron, and manganese are naturally occurring, redox-sensitive inorganics in soils, which are mobilized into groundwater via reductive dissolution. Local and/or regional background concentrations for metals in groundwater are:

- Arsenic – 8 µg/L for arsenic in the Puget Sound Basin (Ecology, 2022a). The MTCA groundwater cleanup level is based on this background threshold value (Tables 6 and 7).
- Dissolved iron – Ranges from <3 µg/L to 21,000 µg/L in north Thurston County (Drost et al., 1998).
- Dissolved manganese – Ranges from <1 µg/L to 3,400 µg/L in north Thurston County (Drost et al., 1998)

The MTCA groundwater cleanup levels for iron and manganese are 11,000 µg/L and 750 µg/L, respectively, which indicates that naturally occurring concentrations of these metals are present in groundwater in the Subject Property vicinity above the MTCA cleanup levels. However, iron and manganese have been detected in groundwater collected from borings and monitoring wells at the Subject Property at concentrations above the regional background concentration ranges.

The groundwater quality data that is available for the Subject Property (recorded during the May 2021 sampling event) indicates dissolved oxygen that is below 1 milligram per liter (mg/L) and oxidation-reduction potential (ORP) that is between -20 and
-80 millivolts (mV), suggesting anaerobic conditions in all wells, except B11/MW11 (Table 7). Well B11/MW11 is screened mostly within undisturbed glacial till, and no organic matter was documented to be observed in the boring. The groundwater sample

collected from well B11/MW11 in May 2021 had dissolved oxygen at 7 mg/L and ORP at 155 mV. These data suggest reducing conditions are prevalent across the portions of the Subject Property where organic matter has been observed in the subsurface.

5.2 Contaminant Migration and Exposure Pathways

An exposure pathway describes the mechanisms by which human or ecological exposure to a contaminant can occur under current or future conditions, assuming no remedial action or protective control is in place. To be considered complete, an exposure pathway has the following characteristics:

- An identified source of contaminants
- A mechanism for contaminant release and transport from the source
- An exposure route through which contact with the contaminant can occur
- A receptor that can be exposed to the contaminant

An exposure pathway is considered complete if a human or ecological receptor can be exposed to a contaminant via that pathway. Current and potential future exposure pathways consider reasonable anticipate future site uses. The following exposure pathways and receptors are potentially complete at the Subject Property:

- Contaminated soil/fill material leaching to groundwater. Contaminants present in soil and fill material can leach to groundwater by infiltration of precipitation through contaminated soil and fill material, or where groundwater is in contact with contaminated soil or fill material.
- Ingestion of groundwater. Human receptors have the potential to contact contaminants in groundwater via ingestion.
- Direct contact with soil and fill material. Human and terrestrial receptors have the potential to contact contaminants in soil and fill material.
- Contaminated soil/fill material erosion with transport via overland stormwater flow to the wetlands with potential exposure to ecological receptors through direct contact with and/or ingestion of wetland sediment.
- Contaminated groundwater discharge to wetland surface water with potential exposure to ecological receptors through direct contact with and/or ingestion of surface water.
- Methane accumulation in indoor air of future structures. Methane has the potential to be explosive and can migrate from the subsurface into residential structures and expose residents to hazardous conditions.

These potential exposure pathways have been considered in the identification of data gaps for the site characterization and additional data will be collected as part of the RI to determine whether a complete pathway exists at the Subject Property.

5.2.1 Terrestrial Ecological Evaluation

The Subject Property does not qualify for an exclusion from a terrestrial ecological evaluation (TEE) and either a simplified or site-specific TEE is required under MTCA.

An evaluation of the appropriate TEE will be provided in the RI along with the required TEE.

6 Data Gaps

The results of the previous investigations and preliminary CSM have been evaluated with respect to potential outstanding data gaps in the site characterization to:

- Define the extent of the Site.
- Adequately characterize the Site to identify potential risks to human health and the environment in accordance with WAC 173-340.
- If determined to be necessary, select a cleanup action under WAC 173-340-360 through -390.

The Site is defined by any area where a hazardous substance, other than a consumer product in consumer use, has been deposited, stored, disposed of, or placed, or otherwise come to be located (RCW 70A.305.020(8)). The specific outstanding data gaps in the site characterization for the Subject Property, identified in Section 4, consist of the following:

- Groundwater quality in the former UST location.
- The nature and extent of TPH D+O in soil to the west, north, and east of boring B3.
- The nature and extent of contamination associated with debris fill in the P10/TP32 area.
- Potential contaminant migration through erosion and transport of fill via overland flow to Wetlands A, C, D, and E and the discharge of groundwater to all Subject Property wetlands.
- The presence, nature, and extent of contaminants in shallow groundwater, including the potential interference of nonpetroleum organic matter on reported concentrations of diesel- and oil-range hydrocarbons in groundwater, the nature and extent of contaminants in groundwater, potential leaching of contaminants from fill to groundwater, and background groundwater quality.
- Methane generation. Sufficient data has not been collected to determine whether methane is being generated by the degradation of buried wood waste, so methane is a COPC until additional data can be collected to confirm its presence or absence at the Subject Property.

In addition, Ecology has identified the following data gaps:

- The presence, nature, and extent of contaminants in fill and potential migration of contaminants from fill soil to groundwater on the Subject Property.

The RI Work Plan in Section 7 presents a phased approach to address these data gaps.

7 Remedial Investigation Work Plan

7.1 Remedial Investigation Objectives

The RI is intended to collect, develop, and provide sufficient data and information regarding a site to confirm that a release of a hazardous substance has occurred, and, if so, to adequately characterize the nature and extent of the release to enable Ecology to select a cleanup action in accordance with MTCA. The specific objectives of the RI for the Subject Property are to:

- Provide a summary of previous investigations conducted at the Subject Property, including information regarding the nature and extent of fill material and existing chemical data that are relevant to evaluating the extent of contamination and identification of data gaps that require investigation to enable evaluation and selection of a cleanup action.
- Determine the nature and extent of contamination in all relevant media and characterize the fate and transport of identified contaminants, including how contaminants migrate between media.
- Use the information collected to evaluate potential risk to human health and the environment through complete exposure pathways under current and likely future land use scenarios. Identify likely cleanup components, cleanup standards, and applicable state and federal laws that pertain to the cleanup action.
- Report the methods and findings of the RI to Ecology, stakeholders, and the local community.

The RI Work Plan describes the project objectives, functional activities, and quality assurance/quality control (QA/QC) protocols that will be used to complete the RI.

7.2 Preliminary Constituents of Potential Concern

The COPCs for the RI are those chemicals that are potentially present, based on reported and/or documented historical land use at the Subject Property. The sediment COPCs for the RI are those chemicals identified for freshwater sediment in the Sediment Management Standards, WAC 173-204-563 (SMS). The general COPC analytes for the RI are:

- TPH in soil, groundwater, and sediment
- VOCs, including BTEX in soil and groundwater
- Metals in soil, groundwater (total and dissolved), and sediment
- Semivolatile organic compounds (SVOCs) in soil, groundwater, and sediment
- PCBs in soil, groundwater, and sediment
- Pesticides and conventionals (ammonia and total sulfides) in sediment

Tables 9 through 12 present the COPCs by media. In addition, sufficient data has not been collected to determine whether methane is being generated by the degradation of buried wood waste, so methane is a COPC for the RI.

7.3 Proposed Site Screening Levels

This section presents the site screening levels, values that will be used to evaluate data collected during the RI to assess the presence, nature, and extent of contamination at the Subject Property. The site screening levels have been developed based on the current and potential future exposure pathways and receptors discussed in Section 5.2, and applicable regulatory criteria and are presented on Tables 9 through 12. The proposed site screening levels are the same as those used to evaluate existing data and consist of the following.

For soil, the site screening levels include consideration of the following:

- The standard MTCA Method A and B cleanup levels from the Ecology Cleanup Levels and Risk Calculation (CLARC) database. Method B cleanup levels are used for those constituents where Method A cleanup levels have not been established.
- Natural Background Soil Metals Concentrations in Washington State (Ecology, 1994).

For groundwater, the site screening levels are based on the protection of drinking water and consist of the following:

- Standard MTCA Method A and B groundwater cleanup levels from the Ecology CLARC database.
- Natural background groundwater arsenic concentrations in Washington State (Ecology, 2022a)

For sediment, the site screening levels are based on the protection of the benthic community in freshwater sediment and consist of the following:

- Standard Freshwater Sediment Cleanup Objectives and Cleanup Screening Levels Chemical Criteria from the SMS, WAC 173-204-563.
- Sediment screening criteria developed for protection of human health using the beach play equations in Ecology's Sediment Cleanup User's Manual (SCUM; Ecology, 2021c) and toxicity values from Ecology's Cleanup Levels and Risk Calculation (CLARC; Ecology, 2023).

For surface water, the site screening levels and include consideration of the following[6]:

- Standard MTCA Method B surface water cleanup levels from the Ecology CLARC database.
- Water Quality Standards for Surface Waters for the State of Washington, WAC 173-201A.
- National Recommended Water Quality Criteria – Human Health, Section 304(a) of the Clean Water Act (CWA).

[6] In accordance with Ecology's Interim Policy 730: Taking into Account Federal Human Health Surface Water Quality Criteria under MTCA (Ecology, 2021a).

- Federal Water Quality Criteria applicable to Washington, 40 Code of Federal Regulations (CFR) 131.45.
- Concentrations of gasoline and diesel range organics predicted to be protective of aquatic receptors in surface waters (Ecology, 2021b).
- Natural background groundwater arsenic concentrations in Washington State (Ecology, 2022a).

Methane can be produced during decomposition of organic matter. MTCA does not provide cleanup levels for methane but does establish standard Method B air cleanup levels that do not exceed 10 percent of the lower explosive limit (LEL) of any hazardous substance (WAC 173-340-750). The LEL for methane is 5 percent by volume.

7.4 RI Approach

This section presents the approach for addressing the data gaps discussed in Section 6 to meet the RI objectives described in Section 7.1. Some data gaps will be addressed in a phased approach, collecting data and information from each phase that informs the scope of work for the next phase. The CSM will be updated as data is collected and evaluated to modify sampling locations and approaches to meet the objectives of each phase of the investigation. The work to be performed and the process and timeline for decision making based on results of each phase of work is presented, where applicable. The scope of work for the RI field program is presented below and will be implemented in consultation with Ecology, which may include modification or elimination to work phases based on the collection, evaluation, and interpretation of data throughout the RI process.

The preliminary RI sampling locations are depicted on Figure 14. The specific sampling and analysis details, including exploration locations, field sampling, laboratory analytical approach, and quality assurance/quality control (QA/QC) procedures, are presented in Appendix A, the Sampling and Analysis Plan (SAP), which includes the Field Sampling Plan and QA/QC Plan.

7.4.1 Groundwater Quality in Former UST Location

One groundwater monitoring well (MW12) will be installed in the approximate location of the former UST and shack for collection and laboratory analysis of groundwater samples (Figure 14). The nearest subsurface exploration to this location is test pit P16, where less than 3 feet of fill soil, consisting of gravelly loam sand, was observed overlying native gravelly sand and sand to the total exploration depth of 12 feet (Figure 8). The monitoring well will be installed in native soil, with a screened interval constructed to span the water table, as observed at the time of drilling. Based on groundwater observed in surrounding explorations, groundwater is expected to be encountered at depths ranging from 6 to 10 feet bgs.

7.4.2 Boring B3 Area

The nature and extent of TPH D+O in soil to the west, north, and east of boring B3 is an outstanding data gap for the Subject Property (Figure 8). To address this data gap, soil borings will be advanced to the west, north, and southeast of boring B3, at distances of approximately 50 feet, to evaluate the nature and extent of TPH D+O in soil (Figure 14).

The borings will be advanced to a depth corresponding to 2 feet below the fill-native soil contact, as observed at the time of drilling, unless the results of field screening suggest the presence of contamination in native soil. If odors, staining, photoionization detector (PID) readings elevated above background, or sheen is observed in native soil, the boring will be advanced to a depth of 10 feet below the fill-native soil contact. Based on the depth to native soil observed in boring B3 at 11 feet bgs, the additional borings will be advanced to an estimated total depth of 13 feet bgs and a maximum depth of 21 feet bgs. Soil samples will be collected from each boring for laboratory analysis of TPH-D+O. A monitoring well will be constructed in the eastern boring to address a groundwater data gap, as described further in Section 7.4.6.

7.4.3 P10/TP 32 Area

To evaluate the nature and extent of contamination associated with debris fill in the P10/TP32 area (Figure 8), a phased approach will be implemented. The first phase of work will consist of shallow subsurface excavation to confirm the presence/absence of fill, characterize subsurface conditions, and collect samples for laboratory analysis. Subsequent phases of investigation will be conducted following the procedures generally outlined below. The specific scope of work for subsequent work, if necessary, will be determined in consultation with Ecology. The phased approach to address this data gaps is as follows:

1. Excavate four test pit explorations (Figure 14) in accordance with the procedures described in Section A.2.1.1. of the SAP (Appendix A). Soil samples that are representative of the conditions observed in each test pit, including fill soil, debris or soil underlying debris, native soil, and soil where field screening results suggest the presence of contaminants, will be collected for laboratory analysis.

2. One boring will be completed for construction of a monitoring well (MW13) to evaluate groundwater quality to the northwest of well B2/MW2, as discussed in Section 7.4.6. The preliminary location of the monitoring well is shown on Figure 14, and the final location will be determined based on the observations and results of the test pit exploration.

3. If the thickness of fill cannot be fully evaluated using test pit exploration, advance up to three additional soil borings along the north property line to determine the depth to native soil and evaluate the quality of fill and potential presence of debris. The borings will be advanced to total depths corresponding to 2 feet below the fill-native soil contact, as observed at the time of drilling, unless the results of field screening suggest the presence of contamination in native soil, in which case the boring will be advanced to a depth of 10 feet below the fill-native soil contact.

If contaminants are detected in soil, debris fill, or groundwater near the north boundary of the Subject Property, in the P10/TP32 Area, at concentrations above the Site Screening Levels, additional exploration may be necessary on the north-adjoining property. Any off-property work will be described in an Addendum to this Draft RI Work Plan that is prepared in consultation with Ecology.

7.4.4 Eastern Subject Property Area

The results of previous investigations have characterized soil conditions in this part of the Subject Property as consisting of shallow glacial till (Qvt), encountered at depths of 1.5 to 5 feet bgs, underlying fill and/or native soil at explorations (from north to south) TP24, P5, P4, TP30, P3, P2, B20, and P1 (Figure 8). The documented subsurface observations at test pit explorations TP23 and TP22 indicate 8 and 15+ feet of fill, respectively; however, these observations are anomalous with other observations in this area and there is no available documentation of subsurface conditions observed in these explorations, as described in Section 4.3. Based on previous reports, no wood debris, construction debris, or solid waste was observed in any of these explorations (Figure 8). However, there is anecdotal evidence that this area may have historically been used for storage and debarking of logs. Additional work will be completed to evaluate the presence, nature, and extent of contaminants in fill (including buried wood debris) and potential migration of contaminants from fill to groundwater on the eastern portion of the Subject Property.

Glacial till is typically very dense and will limit the vertical migration of contaminants if they are present in overlying fill. Because of the relatively thin layer of permeable soil that is documented to be present over glacial till, which is generally impermeable, shallow groundwater may not exist in the eastern Subject Property area. As discussed in Section 3.2, the thickness of the glacial till, which acts as a confining layer, is mapped at more than 100 feet thick beneath the Subject Property (Drost et al., 1999).

The work to address this data gap will be completed in a phased approach, as described in the following subsections.

7.4.4.1 Shallow Test Pit Exploration

The first phase of work will be conducted to evaluate the presence, nature, and extent of fill. Shallow test pit explorations will be excavated to confirm the presence/absence of fill, characterize subsurface conditions, and collect samples for laboratory analysis (Figure 14). The minimum test pit exploration depth of 6 feet is anticipated to be sufficient to identify the top of native soil and observe overlying soil conditions in the eastern Subject Property Area.

Where fill is observed, one sample of fill soil and one sample of underlying native soil will be collected for laboratory analysis of the COPCs. Where fill soil is not observed, one shallow soil sample will be collected from each test pit for laboratory analysis. The native soil samples will be collected from a depth of 1.5 feet bgs, to evaluate shallow soil quality where logs may have been historically stored.

The total depth will be determined in the field at the time of the excavation based on the observed subsurface conditions. If it is not practicable to determine the thickness of fill through test pit exploration, further investigation using drilling exploration methods will be conducted, as described in Section 7.4.4.2.

If the results of the shallow test pit exploration can fully characterize the presence/absence and thickness of fill (including wood debris, if present), and COPCs are not detected at concentrations that exceed the Site Screening Levels, there is not a complete migration pathway for contaminants to reach groundwater and this data gap will be considered to have been sufficiently addressed. If the extent of fill cannot be fully

characterized and/or if COPCs are detected above Site Screening Levels, additional work will be completed as described in Section 7.4.4.2.

7.4.4.2 Deeper Soil Investigation

The second phase of work will be conducted based on the results of the first phase and consist of deeper soil investigation using drilling methods. The second phase of work will be completed if the results of the shallow test pit exploration indicates either of the following:

- If fill observed in the shallow test pit explorations extends to depths that cannot be practicably or safely determined using excavation methods:
    - Further investigation will consist of soil borings advanced through the fill to native soil to evaluate the vertical extent and quality of fill.
    - Soil borings will be advanced to total depths corresponding to 10 feet below the fill-native soil contact, as identified at the time of drilling.
    - Soil samples will be collected from the fill and underlying native soil for laboratory analysis of the COPCs, as follows:
        - Fill soil samples will be collected from any vertical interval where field screening results suggest the presence of contaminants (such as PID measurements that are elevated above background, staining, and/or sheen) and/or 1 foot below any observed debris.
        - If field screening results do not identify the presence of contaminants and no debris is observed, soil samples will be collected from the mid-point of the fill horizon and 1 foot below the fill-native soil contact.
        - Deeper soil samples will also be collected from the boring and retained for potential laboratory analysis. If the results of the shallowest native soil sample identify COPCs at concentrations above the Site Screening Levels, deeper soil samples will be analyzed to evaluate the vertical extent of COPCs in soil at concentrations exceeding the Site Screening Levels.
- If fill is observed in a test pit and the laboratory analytical results of both the fill and native soil samples indicate the presence of COPCs at concentrations exceeding the Site Screening Levels:
    - Further investigation will consist of advancing soil borings deeper into the native soil to collect soil samples to evaluate the vertical extent of COPCs at concentrations exceeding the Site Screening Levels in soil.
    - Borings will be advanced to a total depth corresponding to 15 feet below the depth of the native soil sample that contained concentrations of COPCs exceeding the Site Screening Levels. For example, if the native soil sample collected from the base of a test pit exploration at a depth of

6 feet bgs contains COPCs at concentrations exceeding the Site Screening Levels, a boring will be subsequently completed to 21 feet bgs.

- Soil samples will be collected in 2.5-foot vertical intervals from the deepest test pit sample to the total depth of the boring for potential laboratory analysis. The shallowest soil sample will be initially submitted for laboratory analysis of the COPCs with samples collected from deeper intervals analyzed until the extent of COPCs exceeding the Site Screening Levels is defined.

- If fill is observed in a test pit and the laboratory analytical results indicate the presence of COPCs at concentrations exceeding the Site Screening Levels in fill, but not in the underlying native soil sample, no further work will be conducted.

7.4.4.3 Groundwater Investigation

As described in Section 5.2, a complete groundwater pathway requires an identified source of contaminants and a mechanism for release and transport of contaminants from the source. Because of the geologic and hydrogeologic conditions on the eastern Subject Property area, where groundwater may not be present because of the absence of permeable (water bearing) subsurface soils types, there may not be a complete transport pathway for contaminants present in shallow fill to reach groundwater.

However, if COPCs are detected in fill or native soil at concentrations exceeding the Site Screening Levels and groundwater is observed to be present within 15 feet of the deepest soil exceedances, monitoring wells will be installed and sampled to evaluate potential migration of contaminants from fill/native soil to groundwater. Monitoring well installation and groundwater sampling are discussed in Appendix A.

7.4.5 Wetland

Sediment and surface water samples will be collected from Subject Property wetlands to evaluate the potential for contaminant migration through erosion and transport of fill via overland flow to Wetlands A, C, D, and E, and the discharge of groundwater. The preliminary locations for wetland sediment and surface water sampling are depicted on Figure 14.

Sediment samples will be collected from each of Wetlands A through E for laboratory analysis of the sediment COPCs (Table 11). Two to three sediment samples will be collected from within each of the delineated wetland boundaries based on the size of the wetland estimated by Soundview (2020). Wetlands A, D, and E are estimated to be less than 0.25 acres in size; two sediment samples will be collected from each of these wetlands. Wetlands B and C are estimated to be slightly greater than 0.25 acres in size, at 0.326 and 0.251 acres, respectively; three sediment samples will be collected from each of these wetlands. At each sampling location, a sediment sample will be collected from the upper 4 inches and from 4- to 8 inches.

Surface water samples will also be collected from each of Wetlands A through E. Surface water in wetlands A, B, and C discharges to ditches or culverts that drain surface water off the Subject Property. The sample location for surface water in wetlands A, B, and C will be near the discharge point. Wetland D is an upland drainage swale with surface

water that drains to the north and infiltrates within the Subject Property. The sample location for surface water in Wetland D will be upgradient of the infiltration area. Wetland E is a small, slope wetland located within the buffer of Wetland B. It drains via sheet flow across the slope and infiltrates. The sample location for surface water in Wetland E will be upgradient of the infiltration area. Surface water samples will be submitted for laboratory analysis of the surface water COPCs (Table 12).

7.4.6 Groundwater

The presence, nature, and extent of contaminants in groundwater, including the potential interference of nonpetroleum organic matter on reported concentrations of diesel- and oil-range hydrocarbons in groundwater, and background groundwater quality.

The work to address this data gap will consist of the following:

- Installation of two additional monitoring wells, one each downgradient of existing wells MW2/MW4 (MW13) and MW6 (MW14), to evaluate the nature and extent of TPH-D+O in groundwater.

  Well MW13 will also evaluate groundwater quality downgradient of previous exploration TP12, which was terminated in fill at a depth of 15 feet bgs.

  Well MW14 will also evaluate groundwater quality downgradient of previous explorations ATP-10, P13, and TP11, which were terminated in fill containing woody debris at depths ranging from 8 to 15 feet bgs, respectively.

- Install one additional monitoring well (MW15) downgradient of existing well MW9 to evaluate the nature and extent of TPH-D+O detected above the cleanup level in groundwater there. This well will also evaluate groundwater quality downgradient of previous explorations P19 and TP31, which were terminated in fill containing woody debris at depths of 11 and 15 feet bgs, respectively.

- Install one monitoring well (MW16) in the east-central portion of the Subject Property to evaluate groundwater quality downgradient of previous explorations P20 and TP27, which were terminated in fill containing woody debris at depths of 11 and 15 feet bgs, respectively.

- Install one monitoring well (MW17) in the east-central portion of the Subject Property to evaluate groundwater quality near previous exploration TP28, which was terminated in fill containing woody debris at 15 feet bgs.

- Install one monitoring well (MW18) downgradient of existing well MW3 to evaluate the nature and extent of TPH-D+O in groundwater.

- Install one monitoring well (MW19) to evaluate groundwater quality near previous explorations P6 and TP25 where up to 6 feet of fill was observed.

- Install one monitoring well (MW20) in the southeast portion of Parcel C to evaluate groundwater quality south of previous explorations where fill was observed.

- Conduct an initial round of groundwater monitoring and sampling for the groundwater COPCs, extractable and volatile petroleum hydrocarbons (EPH/VPH), total and dissolved organic carbon, and geochemical indicator parameters (Appendix A). Groundwater samples submitted for TPH-D+O analysis will be analyzed both with and without a silica gel cleanup.
- Collect monthly groundwater level measurements from all Subject Property monitoring wells.

Following completion of the work described in Sections 7.4.1 through 7.4.5 to evaluate soil, groundwater, wetland sediment, and surface water quality, the data will be reviewed to determine an ongoing program for quarterly groundwater monitoring and sampling at the Subject Property, as discussed further in Section 7.4.9. Groundwater monitoring and sampling will be completed for a minimum of four quarters to evaluate seasonal variability in groundwater characteristics and quality.

7.4.7 Methane Investigation

The methane investigation will evaluate whether the degradation of buried wood waste is generating methane. The methane investigation will target seven areas of the Subject Property with significant amounts of buried wood debris encountered in previous investigations, as shown on Figure 10. Three monitoring locations will be at existing monitoring wells, and four locations will require installation of new gas probes (Figure 14). The existing monitoring wells consist of MW-2 (near P11 and ATP-8), MW-9 (near P18), and MW-10 (near P19). The existing wells will be monitored for methane by installing wellhead caps with a gas sample port. Four new gas probes will be installed as follows:

- GP-1 with a 3- to 8-foot screen (near ATP-10)
- GP-2 with a 3- to 11-foot screen (near P14)
- GP-3 with a 3- to 8-foot screen (near SS6)
- GP-4 with a 6- to 11-foot screen (near B21)

Methane monitoring will occur under falling barometric conditions. During the baseline monitoring, each monitoring well/gas probe will be monitored for methane, carbon dioxide, oxygen, and hydrogen sulfide. The sampling details are further described in Section A.2.4 of Appendix A.

7.4.8 Fill Soil Investigation and Characterization

Ecology has identified additional areas of the Subject Property where investigation into the presence and quality of fill soil is required to meet the requirements of MTCA. The preliminary locations are depicted on Figure 14 as Fill Investigation Locations and may be modified in the field at the time of the investigation based on access limitations (such as steep grades and/or significant large trees or vegetation) or surface conditions (such as standing water in a wetland or drainage area). A phased approach will be implemented at these locations to understand the nature and extent of fill, as follows:

- A shallow test pit will be excavated to confirm the presence/absence of fill.

  - If fill is not present in the shallow test pit, the field observations will be documented in field notes and photos, the test pit will be backfilled with excavated soil, the objectives of the work will have been met and no further work will be completed.
  - Where fill is observed, the test pit will be advanced to practicable depths to identify the thickness of the fill and the depth to native soil. If native soil is encountered in a test pit, one fill sample will be collected from just above the fill-native soil interface for laboratory analysis of the COPCs.
  - Where fill soil is observed and it is not practicable to determine the thickness of fill through test pit exploration, further investigation will be conducted using drilling exploration methods.

- Drilling exploration will be completed where fill observed in the shallow test pit explorations extends to depths that cannot be practicably or safely determined using excavation methods. Further investigation will consist of advancing soil borings through the fill to native soil.
  - Soil borings will be advanced to total depths corresponding to at least 2 feet below the fill-native soil contact, as identified at the time of drilling.
  - Soil samples will be collected from the fill soil for laboratory analysis of the COPCs, as follows:
    - Fill soil samples will be collected from any vertical interval where field screening results suggest the presence of contaminants (such as PID measurements that are elevated above background, staining, and/or sheen) and/or 1 foot below any observed debris.
    - If field screening results do not identify the presence of contaminants and no debris is observed, one soil sample will be collected from just above the fill-native soil interface for laboratory analysis of the COPCs.

The fill soil investigation results will be used to evaluate the adequacy of the monitoring well network to characterize groundwater at the Subject Property.

7.4.9 Interim Groundwater Network Evaluation

The results of the RI work described in Sections 7.4.1. through 7.4.8, including the initial groundwater monitoring and sampling event at all existing and new monitoring wells, will be summarized in an RI deliverable, the Groundwater Monitoring Well Network Evaluation. A draft report will be submitted to Ecology to describe the nature and extent of fill soil at the Subject Property and evaluate whether the existing monitoring well network is adequate to characterize potential leaching of contaminants from fill to groundwater. The draft report will include exploration logs of test pit and borings, cross sections depicting the understanding of fill and groundwater on the Subject Property, and recommendations for additional monitoring wells that may be warranted to characterize groundwater quality at the Subject Property. This evaluation will include consideration of the lateral and vertical extent of contaminants in groundwater and additional work may

be necessary to evaluate deeper groundwater quality if contaminants are confirmed to be present in shallow groundwater and there is the potential for deeper water-bearing units to be affected. The draft report will also outline the approach for ongoing groundwater monitoring and sampling at the Subject Property.

8 Schedule

The overall project schedule, including due dates for project deliverables, is described in Exhibit C of the Agreed Order. The Agreed Order schedule requires that work described in this RI Work Plan commence within 90 days of the effective date of the Agreed Order. A preliminary RI schedule is provided below.

RI Deliverables/Action	Due Dates
Monthly Progress Reports	By the tenth (10th) day of each month following the effective date of the Agreed Order
Complete test pit explorations	Within 60 days of the effective date of the Agreed Order
Complete wetland surface water and sediment sampling	Within 90 days of the effective date of the Agreed Order (as seasonal conditions allow)
Drilling of soil borings for soil sampling, monitoring well and gas monitoring probe construction	Begin within 90 days of the effective date of the Agreed Order
Monitoring well development	Within 10 days of well construction
Initial groundwater monitoring and sampling	No sooner than 10 days but within 30 days of well development
Methane monitoring	Within 30 days of probe construction, as atmospheric conditions allow
Prepared a draft Groundwater Monitoring Well Network Evaluation report	Within 60 days of receipt of validated data from test pits, soil borings, and initial groundwater sampling
Prepare a final Groundwater Monitoring Well Network Evaluation report	Within 30 days of receiving final comments from Ecology on the draft document
Implement any additional tasks identified in the final Groundwater Monitoring Well Network Evaluation report	Within 60 days of Ecology's approval of the final report
Quarterly groundwater monitoring	Every 90 days following completion of initial groundwater monitoring and sampling

RI Deliverables/Action	Due Dates
*Prepare and submit a draft RI Work Plan Addendum, if required by Ecology	Within 60 days of Ecology's determination
*Prepare and submit a final RI Work Plan Addendum, if required by Ecology	Within 30 days of receiving final comments from Ecology on the draft document
*Implement the RI Work Plan Addendum	Within 90 days of Ecology's approval

*These actions may be repeated if additional RI work is needed to complete the RI.

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Limitations

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

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

Please refer to Appendix D titled "Report Limitations and Guidelines for Use" for additional information governing the use of this report.

TABLES

Table 2. Subsurface Conditions Summary

Project No. 210577, 2200 Cooper Point Road NW, Olympia, WA

Exploration Identification	Exploration Date	Source	Fill Present? (Y/N)	Category 1 - reworked soil 2 - wood waste/wood debris 3 - construction debris and/or other debris	Total Depth of Exploration (feet)	Depth to Native (feet bgs)	Presence of Fill (feet, unless noted otherwise)	Fill Thickness (feet)	Subsequent Exploration	Subsurface Observation Notes
P1	10/15/2007[1]	PR-2007	N	none	4	At surface	none	0	--	All native soil, dense till at 27" and harder till at 48"
P2	10/15/2007[1]	PR-2007	Y	1 1	5	33-inches	0-23" 23-33"	2.75	--	Reworked fill and native surface (0-33") over dense till and with loamy fine sand below (33-60")
P3	10/15/2007[1]	PR-2007	Y	1	4	19-inches	0-19"	1.6	--	Fill (0-19") over gravelly over dense till (19-48").
P4	10/15/2007[1]	PR-2007	N	none	5.5	At surface	none	0	--	All native soil, very gravelly dense till at 27"
P5	10/15/2007[1]	PR-2007	Y	1	10	30-inches	0-30"	2.5	--	From 0-30" is old fill - estimated at 50-100 years old. Below that, the buried surface is full of charcoal. The fill is about 40% coarse fragments with sandy loam fine fraction texture and weakly cemented zones.
P6	10/15/2007[1]	PR-2007	Y	1, 2, 3	16	6 feet	0-6	6	--	gravel, sandy loam, woody debris, concrete chunks... Six feet of mixed fill (not structural) overlying very to extremely gravelly sandy substrates.
P7	10/15/2007[1]	PR-2007	Y	1	7	3 feet	0-3	3	--	The surface to about 3 feet depth was mixed from gravel pit activities
P8	10/15/2007[1]	PR-2007	Y	1	15	9-inches	0-9"	0.75	--	The surface was saturated and compacted fill
P9	10/15/2007[1]	PR-2007	N	none	14.5	At surface	none	0	TP-33	The substrate is medium to fine sand from surface to 14.5 feet depth. No gravels. Saturated at 14.5 feet. There was a buried, green plastic, 6" diameter perforated pipe extending to about 15 feet depth that appears to have been either an old monitoring well of some sort or a drain. There was no silica sand screen and no bentonite. Estimated to have been in place at least l 0-20 years. It was full of sand, so long since non-functional.
P10	10/15/2007[1]	PR-2007	Y	1, 2, 3	11	11 feet	0-11	11	B2/MW2; (RI)	Mixed fill (non-structural) to 10 feet depth. Possibly disturbed native at 11 feet. The fill smells of diesel or oil; it has large chunks of concrete, asphalt, large boles of wood and construction debris.
P11	10/15/2007[1]	PR-2007	Y	1, 2	13.5	12 feet	0-12	12	B4/MW4	black, non-native material pushed out of scattered mole holes. Fill to 12 feet depth. Surface 3 feet is compacted and saturated; has a lot of coarse woody debris - 12-18 inch diameter tree boles that may have been placed to create a "corduroy" road surface across the saturated fill. The lowest fill contained oyster shells.
P12	10/15/2007[1]	PR-2007	Y	1 1	10	8 feet	0-8 8-10	8	B5/MW5	0-8 feet of massive random fill; severely compacted and completely impermeable. From 8-10 feet, an old disturbed sandy native surface.
P13	10/15/2007[1]	PR-2007	Y	1 3 2	11	Not encountered	0-4 4-10 10-11+	11+	B6/MW6; (RI)	0-4 feet was relatively clean loamy sand fill. From 4-10 feet, the fill was old asphalt and concrete-structural fill. From 10-11 feet (pit base) - loose 100% woody debris. Did not reach native material.
P14	10/15/2007[1]	PR-2007	Y	1 2, 3 3	12	12	0-2 2-12 8-11	11	B7/MW7	0-2 feet is mottled sandy loam and loam sand mixed; no woody debris. From 2- 12 feet - mixed fill with large logs, chunks of concrete and asphalt (2 feet or more in diameter), rebar; metal strips, cedar planks. Most of the asphalt and concrete debris is at 8-11 feet depth. The substrate below 12 feet was coarse sand, and appears to be native material.

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Exploration Identification	Exploration Date	Source	Fill Present? (Y/N)	Category 1 - reworked soil 2 - wood waste/wood debris 3 - construction debris and/or other debris	Total Depth of Exploration (feet)	Depth to Native (feet bgs)	Presence of Fill (feet, unless noted otherwise)	Fill Thickness (feet)	Subsequent Exploration	Subsurface Observation Notes
P15	10/15/2007[1]	PR-2007	Y	1 1, 2, 3	7	7 feet	0-1 1-7	7	B8/MW8	Top foot is mottled sandy loam. From 1-7 feet, mixed extremely gravelly sandy loam fill with about 15% woody debris. Fill includes concrete chunks; burn debris, and the base of the fill slopes deeper to the south. So it appears we are digging at the northern edge of a deeper fill hole. Below 7 feet depth, the substrate is native material - extremely gravelly loamy sand with color suggesting that it might once have been within about 3 feet of a native surface. The substrates are seeping rapidly and saturated below 7 feet depth (fill interface).
P16	10/15/2007[1]	PR-2007	Y	1	12	32-inches	0-32"	2.7	--	The surface is clean fill - extremely gravelly loam sand with no wood and no garbage
P17	10/15/2007[1]	PR-2007	Y	1, 3 1, 2	10	Not encountered	0-6 6-10+	11	B3/MW3	This pit had fill to 10+ feet. From 0-6 feet, the upper fill was mixed sandy loam with construction debris and a strong odor of diesel or oil. Below 6 feet, the fill was mostly large logs and lumber, possibly from an old log building. The lumber was squared off logs with notched ends - most pieces about 6-8 feet long (RR ties?). The pit base at 10 feet was still in fill, but was saturated, so we stopped digging since the fill pit sidewalls were unstable.
P18	10/15/2007[1]	PR-2007	Y	1, 2, 3 1, 2, 3 1	15	9 feet	0-7 7-9 9-15	9	B9/MW9	0-7 feet: Relatively clean very gravelly sandy loam fill, massive and mixed with minor amounts of wire, coarse wood, etc. Seeping at 7 feet. 7-9 feet: Older fill with about 60% by volume coarse and fine woody debris and other fill material, including an old tire sidewall. 9-15 feet: The substrate was gleyed and mottled massive coarse sandy loam. Colors indicate saturation, but it is not saturated today. This material is possibly a native material base, but is disturbed and mixed.
P19	10/15/2007[1]	PR-2007	Y	1 1 1, 2	11	Not encountered	0-30" 30-40" 40"-11+ ft	11	B10/MW10; (RI)	0-30 inches: Massive, dark-brown fine sandy loam fill. 30-40 inches: Massive, severely gleyed silt loam fill. 40 inches to 11 feet: Older fill with dark brownish black color and a great deal of bark (about 25%). The balance is very gravelly sandy loam fill. Possibly a place where logs were stripped of bark?
P20	10/15/2007[1]	PR-2007	Y	1 1 1, 2 1, 3	11	Not encountered	0-26" 26-36" 36"-11 ft 11 ft +	15	(RI)	0-26 inches: Massive, dark-brown fine sandy loam fill. 26-36 inches: Massive, severely gleyed silt loam fill. 36 inches to 11 feet: Older fill with dark brownish black color and a great deal of bark (about 25%). The balance is very gravelly sandy loam fill. 11 feet+: started to hit a lighter colored layer with concrete chunks.

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Project No. 210577, 2200 Cooper Point Road NW, Olympia, WA

Exploration Identification	Exploration Date	Source	Fill Present? (Y/N)	Category 1 - reworked soil 2 - wood waste/wood debris 3 - construction debris and/or other debris	Total Depth of Exploration (feet)	Depth to Native (feet bgs)	Presence of Fill (feet, unless noted otherwise)	Fill Thickness (feet)	Subsequent Exploration	Subsurface Observation Notes
P21	10/15/2007[1]	PR-2007	Y	1	12	6 feet	0-13"	6	--	0-13 in: Very gravelly sandy loam/ loamy sand fill surface; brown colored 13-30 in: Very gravelly sandy loam/ loamy sand fill; gleyed and mottled (suggesting seasonal saturation) 30 in to 6 ft: dark brown very gravelly sandy loam with about 10% metal debris 6 ft to 12 ft: Extremely gravelly coarse sand - almost blue in color
				1			13-30"			
				1, 3			30" - 6 ft			
TP1	1/7/2008	RNS-2008	Y	NA	Unknown	7 feet	0-7	7	--	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP2	1/7/2008	RNS-2008	Y	NA	Unknown	3 feet	0-3	3	--	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP3	1/7/2008	RNS-2008	Y	1, 2	Unknown	3 feet	0-3	3	--	"...while wood debris was found in 20 of the test pits, a considerable amount was found in Test Pits 3, 11, 17, 19, 21, 27, 28, and 31."
TP4	1/7/2008	RNS-2008	Y	NA	Unknown	9 feet	0-9	9	--	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP5	1/7/2008	RNS-2008	Y	NA	Unknown	Not encountered	0-15+	15	B3/MW3	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP6	1/7/2008	RNS-2008	Y	NA	Unknown	Not encountered	0-15+	15	B3/MW3	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP7	1/7/2008	RNS-2008	Y	NA	Unknown	Not encountered	0-15+	15	--	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP8	1/7/2008	RNS-2008	Y	NA	Unknown	9 feet	0-9	9	--	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP9	1/11/2008	RNS-2008	Y	NA	Unknown	7 feet	0-7	7	--	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP10	1/11/2008	RNS-2008	Y	NA	Unknown	Not encountered	0-15+?	15?	B7/MW7; B17	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP11	1/11/2008	RNS-2008	Y	1, 2	Unknown	Not encountered	0-15+	15	(RI)	"...while wood debris was found in 20 of the test pits, a considerable amount was found in Test Pits 3, 11, 17, 19, 21, 27, 28, and 31. Test Pit 11 has a thicker layer of wood chips from five to eight feet bgs...Field screening of these pits did not indicate the presence of contaminants".
TP12	1/11/2008	RNS-2008	Y	NA	Unknown	Not encountered	0-15+	15	(RI)	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP13	1/11/2008	RNS-2008	N	none	Unknown	At surface	none	0	--	Recessional outwash (native)
TP14	1/11/2008	RNS-2008	Y	NA	Unknown	9 feet	0-9	9	--	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP15	1/11/2008	RNS-2008	Y	NA	Unknown	7 feet	0-7	7	--	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP16	1/11/2008	RNS-2008	Y	NA	Unknown	3.5 feet	0-3.5	3.5	--	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP17	1/11/2008	RNS-2008	Y	1, 2	Unknown	7 feet	0-7	7	--	while wood debris was found in 20 of the test pits, a considerable amount was found in Test Pits 3, 11, 17, 19, 21, 27, 28, and 31...Test Pits 11, 17, and 32 had a higher occurrence of construction debris and/or solid waste than the other test pits. Field screening of these pits did not indicate the presence of contaminants."
TP18	1/11/2008	RNS-2008	Y	NA	Unknown	3 feet	0-3	3	--	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP19	1/11/2008	RNS-2008	Y	1, 2	Unknown	3 feet	0-3	3	--	"...while wood debris was found in 20 of the test pits, a considerable amount was found in Test Pits 3, 11, 17, 19, 21, 27, 28, and 31".
TP20	1/11/2008	RNS-2008	Y	NA	Unknown	7 feet	0-7	7	--	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP21	1/11/2008	RNS-2008	Y	1, 2	Unknown	9 feet	0-9	9	--	"...while wood debris was found in 20 of the test pits, a considerable amount was found in Test Pits 3, 11, 17, 19, 21, 27, 28, and 31".
TP22	1/11/2008	RNS-2008	Y	NA	Unknown	Not encountered	0-15+	15	(RI)	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP23	1/11/2008	RNS-2008	Y	NA	Unknown	8 feet	0-8	8	--	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP24	1/11/2008	RNS-2008	Y	NA	Unknown	3 to 5 feet	3-5	3-5	--	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP25	1/11/2008	RNS-2008	Y	NA	Unknown	3 to 5 feet	3-5	3-5	--	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP26	1/11/2008	RNS-2008	Y	NA	Unknown	7.5 feet	7.5	7.5	--	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP27	1/11/2008	RNS-2008	Y	1, 2	Unknown	Not encountered	0-15+	15	(RI)	"...while wood debris was found in 20 of the test pits, a considerable amount was found in Test Pits 3, 11, 17, 19, 21, 27, 28, and 31".
TP28	1/11/2008	RNS-2008	Y	1, 2	Unknown	Not encountered	0-15+	15	(RI)	"...while wood debris was found in 20 of the test pits, a considerable amount was found in Test Pits 3, 11, 17, 19, 21, 27, 28, and 31".

Table 2. Subsurface Conditions Summary

Project No. 210577, 2200 Cooper Point Road NW, Olympia, WA

Exploration Identification	Exploration Date	Source	Fill Present? (Y/N)	Category 1 - reworked soil 2 - wood waste/wood debris 3 - construction debris and/or other debris	Total Depth of Exploration (feet)	Depth to Native (feet bgs)	Presence of Fill (feet, unless noted otherwise)	Fill Thickness (feet)	Subsequent Exploration	Subsurface Observation Notes
TP29	1/11/2008	RNS-2008	Y	NA	Unknown	Not encountered	0-15+	15	(RI)	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP30	1/11/2008	RNS-2008	Y	NA	Unknown	3 to 5 feet	3-5	3-5	--	no soil descriptions provided, fill thickness approx. from Fig. 4 (RNS 2008)
TP31	1/11/2008	RNS-2008	Y	1, 2	Unknown	Not encountered	0-15+	15	(RI)	"...while wood debris was found in 20 of the test pits, a considerable amount was found in Test Pits 3, 11, 17, 19, 21, 27, 28, and 31...Test Pit 31 has a layer consisting of approximately 20% wood chips from five to twelve feet bgs".
TP32	1/11/2008	RNS-2008	Y	1, 3	Unknown	Not encountered	0-15+	15	(RI)	"Test Pits 11, 17, and 32 had a higher occurrence of construction debris and/or solid waste than the other test pits. Field screening of these pits did not indicate the presence of contaminants".
TP33	1/11/2008	RNS-2008	N	none	Unknown	At surface	none	0	--	Recessional outwash (native)
ATP-1	12/23/2014	Ages 2015	Y	1	10	1 foot	0-1	1	--	Fill: sand with silt and gravel, trace topsoil, loose, moist.
ATP-2	12/23/2014	Ages 2015	Y	1, 2	9	4 feet	0-4	4	--	Fill: topsoil, sand, gravel, tree roots, woody debris, loose, moist.
ATP-3	12/23/2014	Ages 2015	Y	1	9	4	0-4	4	--	Gray mottled orange SAND with silt and gravel, cobbles to 6 inches, medium dense, moist, (SP-SM) (Outwash) (Possible Old Fill).
				1			4-5			Gray SAND with silt and gravel, medium dense, moist, (SP-SM) (Outwash) (Possible Old Fill).
ATP-4	12/23/2014	Ages 2015	Y	1	9	4	0-1.5	4	--	Fill: Brown and tan silty sand with gravel, loose, moist.
				1			1.5-2.5			Fill: Brown sand with silt and gravel, some topsoil, loose, moist.
				1			2.5-4			Fill: Blueish-gray sandy silt, loose, moist.
ATP-5	12/23/2014	Ages 2015	Y	1	12	11	0-3	11	B12	Fill: Alternating layers of Brown silty sand with gravel and bluish-gray silt with sand, loose, moist.
				1, 2			3-11			Fill: Topsoil, gravel, sand, tree roots, woody debris, and occasional large pieces of wood, loose, moist. Native outwash at 11.
ATP-6	12/24/2014	Ages 2015	Y	1, 2	10	Not encountered	0-10+	10+	--	Fill: Topsoil, gravel, sand, garbage, tree roots, woody debris, loose, moist.
ATP-7	12/24/2014	Ages 2015	Y	1	10	1	0-1	1	--	Fill: Sand, silt, gravel, and topsoil, loose, moist.
ATP-8	12/24/2014	Ages 2015	Y	1, 2	13	12	0-12	12	--	Fill: Alternating layers of brown silty gravel with sand, brown silty sand with gravel, bluish-gray silt with sand and gravel, and topsoil with woody debris, loose, moist. Native outwash at 12 feet.
ATP-9	12/24/2014	Ages 2015	Y	1	8	6.5	0-3	6.5	--	Tan, SAND with silt and gravel, cobbles to 3 inches, medium dense, moist. (SP-SM) (Outwash) (Possible Old Fill)
				1			3-6.5			Gray SAND with silt and gravel, medium dense, moist. (SP-SM) (Outwash) (Possible Old Fill).
ATP-10	12/24/2014	Ages 2015	Y	1, 2	8	Not encountered	0-1	8+	(RI)	Fill: Topsoil, woody debris
				1			1-2.5			Fill: Brown to reddish-orange silty sand with gravel, loose, moist.
				1, 2			2.5-8+			Fill: Topsoil, gravel, sand, silt, cobbles to 6 inches, woody debris, loose, moist. Large logs from 7 to 8 feet. Test Hole terminated at a depth of 8.0 feet due to large logs.
ATP-11	12/24/2014	Ages 2015	N	none	8	At surface	none	0	--	Topsoil (0-0.5'). Reddish-orange silty SAND with gravel, medium dense, moist. (SM)
ATP-12	12/24/2014	Ages 2015	N	none	7	0	none	0	--	Outwash
ATP-13	12/24/2014	Ages 2015	N	none	5	0	none	0	--	Outwash
B1/MW1	11/9/2020	ENPRO 2021	N	none	15	0	none	0	--	Topsoil (organic silts with gravel) overlying silt and sand with rounded gravel and cobbles (all native).
B2/MW2	11/10/2020	ENPRO 2021	N	none	15	0	none	0	--	Sandy silt overlying clay, both with gravel and cobbles, to 9 ft bgs, overlying sand (all native).
B3/MW3	11/9/2020	ENPRO 2021	Y	1, 2	15	11	0-11	11	--	Fill: 2 feet topsoil over 9 feet of organic silt, buried wood, and cobbles. Native at 11 feet is silty, sandy gravel.
B4/MW4	11/9/2020	ENPRO 2021	N	none	15	0	none	0	--	Topsoil (native silty sand and gravel) over 13 feet of well-sorted sand (all native).
B5/MW5	11/10/2020	ENPRO 2021	Y	1,2,3	15	5.5	0-5.5	5.5	--	Fill: 2 feet silty, sandy gravel over 3.5 feet of black clay with gravel (interpreted as buried fill with wood) and small metal fragments. Native at 5.5 feet bgs is sand.
B6/MW6	11/10/2020	ENPRO 2021	Y	1	15	7	0-7	7	--	Fill: sandy silt with gravel, cobbles, and asphalt. Native at 7 feet bgs is sand.
B7/MW7	11/10/2020	ENPRO 2021	Y	1,2,3	15	10	0-10	10	--	Fill: sandy silt, clay, and gravel with concrete and woody debris. Native at 10 feet bgs is sand.
B8/MW8	11/9/2020	ENPRO 2021	Y	1,2,3	15	6	0-6	6	--	Fill: silt and sand with gravel and cobbles, woody debris/fragments, and concrete. Native at 6 feet is gravel with silt and sand.

Table 2. Subsurface Conditions Summary

Project No. 210577, 2200 Cooper Point Road NW, Olympia, WA

Exploration Identification	Exploration Date	Source	Fill Present? (Y/N)	Category 1 - reworked soil 2 - wood waste/wood debris 3 - construction debris and/or other debris	Total Depth of Exploration (feet)	Depth to Native (feet bgs)	Presence of Fill (feet, unless noted otherwise)	Fill Thickness (feet)	Subsequent Exploration	Subsurface Observation Notes
B9/MW9	11/9/2020	ENPRO 2021	Y	1,2,3	15	7.5	0-7.5	7.5	--	Fill: silty sand with gravel, woody debris/fragments, and concrete. Native at 7.5 feet bgs is silt and silty sand with sand and gravel.
B10/MW10	11/9/2020	ENPRO 2021	Y	1,2	15	7	0-7	7	--	Fill: organic clay with gravel over gravelly fill with woody debris. Native at 7 feet bgs is poorly-graded gravel and sand.
B11/MW11	11/9/2020	ENPRO 2021	N	none	15	0	none	0	--	Silty gravel over clean, dense clay grading to sand.
B12	6/24/2021	AEG 2021	NA	NA	15	3.5	0-3.5	3.5	--	0-3.5': sand with gravel and silt (SP/SP-SM) (fill or reworked native) 3.5-15': gravel with sand (GP) (native outwash)
B13	6/24/2021	AEG 2021	NA	NA	15	At surface	none	0	--	0-15': sand with gravel (SP) (native outwash)
B14	6/24/2021	AEG 2021	NA	NA	15	3.5	0-3.5	3.5	--	0-3.5': sand with gravel and silt (SP/SP-SM) (fill or reworked native) 3.5-10.5': gravel with sand (GP) (native outwash) 10.5-15': sand (SW) (native outwash)
B15	6/24/2021	AEG 2021	NA	NA	15	3.5	0-3.5	3.5	--	0-3.5': sand with gravel and silt (SP/SP-SM) (fill or reworked native) 3.5-10.5': gravel with sand (GP) (native outwash) 10.5-15': sand with gravel (SP) (native outwash)
B16	6/24/2021	AEG 2021	NA	NA	15	At surface	none	0	--	0-5.5': sand with gravel (SP) (reworked native) 5.5-10.5': gravel with sand (GP) (native outwash) 10.5-15': sand (SP) (native outwash)
B17	6/25/2021	AEG 2021	NA	NA	15	At surface	none	0	--	0-15': sand and gravel (SP/GP) (native outwash)
B18	6/25/2021	AEG 2021	NA	NA	20	6	0-6	6	--	0-6': sand with gravel and silt (SP/SP-SM) (fill or reworked native) 6-20': sand and gravel (SP/GP) (native outwash)
B19	6/25/2021	AEG 2021	NA	NA	20	6	0-6	6	--	0-6': sand with gravel and silt (SP/SP-SM) (fill or reworked native) 6-20': sand and gravel (SP/GP) (native outwash)
B20	6/25/2021	AEG 2021	NA	NA	15	6	0-6	6	--	0-6': sand with gravel and silt (SP/SP-SM) (fill or reworked native) 6-9': gravel with sand (GP) (native outwash) 9-15': clay (native)
B21	6/25/2021	AEG 2021	NA	NA	NA	6	0-6	6	--	0-6': sand with gravel and silt (SP/SP-SM) (fill or reworked native) 6-15': sand and gravel (SP/GP) (native outwash)

Notes

"--" - not applicable

bgs - below ground surface

NA - not available

(RI) - indicates proposed exploration

This table presents a summary of subsurface conditions observed in previous explorations completed by others. The source documents should be referenced for additional details.

[1]The Pacific Rim soils report indicates that the investigation work was conducted '…over a period of about a week in mid-October, 2007". The exact dates are not known.

Table 3. Summary of Historical Soil Data

Project No. 220577 , 2200 Cooper Point Road NW, Olympia, Washington

Sample Location		TP1	TP2	TP2	TP3	TP4	TP5	TP6	TP7	TP8	TP9	TP11	TP12	TP13	TP14
Sample Date		01/07/2008	01/07/2008	01/07/2008	01/07/2008	01/07/2008	01/07/2008	01/07/2008	01/07/2008	01/07/2008	01/11/2008	01/11/2008	01/11/2008	01/11/2008	01/11/2008
Sample Identification		SETP1-1	SETP2-1	SETP2-2	SETP3-1	SETP4-1	SETP5-1	SETP6-1	SETP7-1	SETP8-1	SETP9-1	SETP11-1	SETP12-1	SETP13-1	SETP14-1
Sample Depth		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Analyte (by constituent group)	MTCA Soil Cleanup Levels for Unrestricted Land Use[1]														
Total Petroleum Hydrocarbons															
Gasoline-Range Organics	100	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Diesel-Range Organics	2000	50 U	50 U	50 U	50 U	50 U	50 U	25 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Motor Oil-Range Organics	2000	100 U	100 U	100 U	100 U	100 U	100 U	**370**	100 U	100 U	100 U	100 U	100 U	100 U	100 U

Notes

All results in milligrams per kilogram

[1]Washington State Model Toxics Control Act (MTCA) Method A or B Soil Cleanup Levels for Unrestricted Land Uses (WAC 173-340)

U - Analyte not detected at or above the RL shown

Table 3. Summary of Historical Soil Data

Project No. 220577 , 2200 Cooper Point Road NW, Olympia, Washington

Sample Location		TP15	TP16	TP17	TP18	TP19	TP20	TP21	TP22	TP23	TP24	TP25	TP26	TP27	TP28
Sample Date		01/11/2008	01/11/2008	01/11/2008	01/11/2008	01/11/2008	01/11/2008	01/11/2008	01/11/2008	01/11/2008	01/11/2008	01/11/2008	01/11/2008	01/11/2008	01/11/2008
Sample Identification		SETP15-1	SETP16-1	SETP17-1	SETP18-1	SETP19-1	SETP20-1	SETP21-1	SETP22-1	SETP23-1	SETP24-1	SETP25-1	SETP26-1	SETP27-1	SETP28-1
Sample Depth		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Analyte (by constituent group)	MTCA Soil Cleanup Levels for Unrestricted Land Use[1]														
Total Petroleum Hydrocarbons															
Gasoline-Range Organics	100	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Diesel-Range Organics	2000	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Motor Oil-Range Organics	2000	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U

Notes

All results in milligrams per kilogram

[1]Washington State Model Toxics Control Act (MTCA) Method A or B Soil Cleanup Levels for Unrestricted Land Uses (WAC 173-340)

U - Analyte not detected at or above the RL shown

Table 3. Summary of Historical Soil Data

Project No. 220577 , 2200 Cooper Point Road NW, Olympia, Washington

	Sample Location	TP29	TP30	TP31	TP32	TP32	TP33
	Sample Date	01/11/2008	01/11/2008	01/11/2008	01/11/2008	01/11/2008	01/11/2008
	Sample Identification	SETP29-1	SETP30-1	SETP31-1	SETP32-1	SETP32-2	SETP33-1
	Sample Depth	-	-	-	-	-	-
Analyte (by constituent group)	MTCA Soil Cleanup Levels for Unrestricted Land Use[1]						
Total Petroleum Hydrocarbons							
Gasoline-Range Organics	100	20 U	20 U	20 U	20 U	20 U	20 U
Diesel-Range Organics	2000	50 U	50 U	50 U	50 U	50 U	50 U
Motor Oil-Range Organics	2000	100 U	100 U	100 U	100 U	100 U	100 U

Notes

All results in milligrams per kilogram

[1]Washington State Model Toxics Control Act (MTCA) Method A or B Soil Cleanup Levels for Unrestricted Land Uses (WAC 173-340)

U - Analyte not detected at or above the RL shown

Table 4. Surface Soil Data

Project No. 210577, 2200 Cooper Point Road NW, Olympia, Washington

Analyte (by constituent group)	MTCA Soil Cleanup Levels for Unrestricted Land Use[3]	SS1	SS2	SS2A	SS3	SS4	SS5	SS6	SS7	SS8	SS9	SS10	SS11	SS12	SS13	SS14	SS15	SS16	SS17	SS18	SS19	SS20	SS20A	SS21	SS22	SS23	SS24	SS25
Sample Location		SS1	SS2	SS2A	SS3	SS4	SS5	SS6	SS7	SS8	SS9	SS10	SS11	SS12	SS13	SS14	SS15	SS16	SS17	SS18	SS19	SS20	SS20A	SS21	SS22	SS23	SS24	SS25
Sample Date		11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020
Sample Identification		SS1	SS2	SS2-A[2]	SS3	SS4	SS5	SS6	SS7	SS8	SS9	SS10	SS11	SS12	SS13	SS14	SS15	SS16	SS17	SS18	SS19	SS20	SS20-A	SS21	SS22	SS23	SS24	SS25
Sample Depth[1]		0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Total Petroleum Hydrocarbons																												
Gasoline-Range Organics	100	6.8 U	5.1 U	4.5 U	5.5 U	3.9 U	4.4 U	4.6 U	12 U	6.1 U	4.0 U	7.8 U	12 U	9.9 U	4.9 U	6.0 U	8.1 U	7.1 U	5.0 U	4.2 U	3.8 U	4.7 U	6.0 U	3.5 U	4.5 U	6.4 U	4.5 U	5.5 U
Diesel-Range Organics	2000	**150**	31 U	29 U	30 U	28 U	28 U	31 U	43 U	34 U	28 U	36 U	**65**	38 U	31 U	30 U	32 U	30 U	29 U	28 U	27 U	31 U	31 U	27 U	29 U	35 U	32 U	32 U
Motor Oil-Range Organics	2000	**1800**	63 U	57 U	**130**	**77**	**80**	**73**	**190**	69 U	57 U	**170**	**650**	**130**	61 U	**69**	**95**	60 U	57 U	57 U	53 U	62 U	62 U	54 U	59 U	70 U	**280**	**160**
TPH-D+O (ND = 1/2 RL)	2000	**1950**	**ND**	**ND**	**145**	**91**	**94**	**88.5**	**212**	**ND**	**ND**	**188**	**715**	**130**	**ND**	**84**	**111**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**296**	**176**
Benzene, Toluene, Ethylbenzene, and Xylenes																												
Benzene	0.03	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.024 U	0.020 U	0.020 U	0.020 U	0.024 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Toluene	7	0.068 U	0.051 U	0.045 U	0.055 U	0.039 U	0.044 U	0.046 U	0.12 U	0.061 U	0.040 U	0.078 U	0.12 U	0.099 U	0.049 U	0.060 U	0.081 U	0.071 U	0.050 U	0.042 U	0.038 U	0.047 U	0.060 U	0.035 U	0.045 U	0.064 U	0.045 U	0.055 U
Ethylbenzene	6	0.068 U	0.051 U	0.045 U	0.055 U	0.039 U	0.044 U	0.046 U	0.12 U	0.061 U	0.040 U	0.078 U	0.12 U	0.099 U	0.049 U	0.060 U	0.081 U	0.071 U	0.050 U	0.042 U	0.038 U	0.047 U	0.060 U	0.035 U	0.045 U	0.064 U	0.045 U	0.055 U
Total Xylenes	9	0.068 U	0.051 U	0.045 U	0.055 U	0.039 U	0.044 U	0.046 U	0.12 U	0.061 U	0.04 U	0.078 U	0.12 U	0.099 U	0.049 U	0.06 U	0.081 U	0.071 U	0.05 U	0.042 U	0.038 U	0.047 U	0.06 U	0.035 U	0.045 U	0.064 U	0.045 U	0.055 U
Metals																												
Arsenic	20	--	--	--	**15**	11 U	11 U	12 U	17 U	14 U	11 U	14 U	18 U	15 U	12 U	12 U	13 U	12 U	11 U	11 U	11 U	12 U	12 U	11 U	12 U	14 U	13 U	13 U
Barium	16000	--	--	--	**84**	**60**	**44**	**63**	**110**	**85**	**40**	**180**	**89**	**70**	**28**	**55**	**64**	**30**	**48**	**37**	**46**	**66**	**71**	**28**	**57**	**56**	**48**	**61**
Cadmium	2	--	--	--	**0.62**	0.56 U	0.56 U	**0.84**	0.85 U	0.69 U	0.57 U	0.72 U	0.90 U	0.75 U	0.61 U	0.61 U	0.64 U	0.60 U	0.57 U	0.57 U	0.53 U	0.62 U	0.62 U	0.54 U	0.58 U	0.70 U	0.65 U	0.64 U
Chromium	--	--	--	--	**31**	**21**	**16**	**21**	**34**	**24**	**16**	**39**	**21**	**20**	**16**	**23**	**25**	**31**	**20**	**21**	**17**	**29**	**29**	**18**	**26**	**25**	**23**	**23**
Copper	3200	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**11**	**12**	**17**	**17**	**7.5**	**19**	**13**	--	--
Lead	250	**17**	--	--	**130**	**18**	5.6 U	**16**	**15**	**9**	5.7 U	**17**	**11**	**8.5**	6.1 U	**8.1**	**11**	6.0 U	5.7 U	5.7 U	5.3 U	6.2 U	6.2 U	5.4 U	5.8 U	7.0 U	**8.5**	**35**
Mercury	2	--	--	--	0.30 U	0.28 U	0.28 U	0.31 U	0.42 U	0.34 U	0.28 U	0.36 U	0.45 U	0.38 U	0.31 U	0.30 U	0.32 U	0.30 U	0.28 U	0.28 U	0.27 U	0.31 U	0.31 U	0.27 U	0.29 U	0.35 U	0.32 U	0.32 U
Selenium	400	--	--	--	12 U	11 U	11 U	12 U	17 U	14 U	11 U	14 U	18 U	15 U	12 U	12 U	13 U	12 U	11 U	11 U	11 U	12 U	12 U	11 U	12 U	14 U	13 U	13 U
Silver	400	--	--	--	1.2 U	1.1 U	1.1 U	1.2 U	1.7 U	1.4 U	1.1 U	1.4 U	1.8 U	1.5 U	1.2 U	1.2 U	1.3 U	1.2 U	1.1 U	1.1 U	1.1 U	1.2 U	1.2 U	1.1 U	1.2 U	1.4 U	1.3 U	1.3 U
Chromium (VI)	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Semivolatile Organic Compounds																												
Hexachlorobutadiene	13	0.0067 U	--	--	0.0052 U	0.0058 U	0.0051 U	0.0062 U	0.60 U	--	--	0.39 U	0.59 U	0.31 U	--	0.0025 U	--	--	--	--	--	--	--	--	--	--	0.0024 U	0.0027 U
Pentachlorophenol	2.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.19 U	0.18 U	0.21 U	0.21 U	0.18 U	0.19 U	0.23 U	--	--
Polycyclic Aromatic Hydrocarbons (PAHs)																												
1-Methylnaphthalene	34	0.0080 U	--	--	0.016 U	0.0075 U	0.0075 U	0.0082 U	0.011 U	--	0.0076 U	0.0096 U	**0.037**	**0.026**	0.0081 U	0.0081 U	0.0086 U	0.0080 U	0.0076 U	0.0076 U	0.0071 U	0.0083 U	0.0083 U	0.0072 U	0.0078 U	0.0093 U	**0.13**	0.0085 U
2-Methylnaphthalene	320	0.0080 U	--	--	**0.044**	0.0075 U	0.0075 U	0.0082 U	0.011 U	--	0.0076 U	0.0096 U	**0.078**	**0.017**	0.0081 U	0.0081 U	0.0086 U	0.0080 U	0.0076 U	0.0076 U	0.0071 U	0.0083 U	0.0083 U	0.0072 U	0.0078 U	0.0093 U	**0.090**	0.0085 U
Acenaphthene	4800	0.0080 U	--	--	0.016 U	0.0075 U	0.0075 U	0.0082 U	0.011 U	--	0.0076 U	0.0096 U	**0.027**	0.010 U	0.0081 U	0.0081 U	0.0086 U	0.0080 U	0.0076 U	0.0076 U	0.0071 U	0.0083 U	0.0083 U	0.0072 U	0.0078 U	0.0093 U	**0.036**	0.0085 U
Acenaphthylene	--	0.0080 U	--	--	**0.045**	**0.017**	0.0075 U	0.0082 U	0.011 U	--	0.0076 U	**0.024**	**0.089**	0.010 U	0.0081 U	0.0081 U	0.0086 U	0.0080 U	0.0076 U	0.0076 U	0.0071 U	0.0083 U	0.0083 U	0.0072 U	0.0078 U	0.0093 U	**0.040**	0.0085 U
Anthracene	24000	0.0080 U	--	--	**0.056**	**0.014**	0.0075 U	**0.011**	**0.013**	--	0.0076 U	**0.026**	**0.22**	0.010 U	0.0081 U	0.0081 U	0.0086 U	0.0080 U	0.0076 U	0.0076 U	0.0071 U	0.0083 U	0.0083 U	0.0072 U	**0.014**	0.0093 U	**0.033**	0.0085 U
Benzo(g,h,i)perylene		0.0080 U	--	--	**0.074**	**0.028**	0.0075 U	**0.037**	0.011 U	--	0.0076 U	**0.055**	**0.19**	0.010 U	0.0081 U	0.0081 U	**0.024**	0.0080 U	0.0076 U	0.0076 U	0.0071 U	0.0083 U	0.0083 U	0.0072 U	**0.042**	0.0093 U	**0.023**	0.0085 U
Fluoranthene	3200	**0.014**	--	--	**0.17**	**0.066**	**0.012**	**0.077**	**0.043**	--	0.0076 U	**0.050**	**0.52**	**0.015**	0.0081 U	**0.012**	**0.060**	0.0080 U	0.0076 U	0.0076 U	0.0071 U	0.0083 U	0.0083 U	0.0072 U	**0.17**	0.0093 U	**0.062**	0.0085 U
Fluorene	3200	0.0080 U	--	--	0.016 U	0.0075 U	0.0075 U	0.0082 U	0.011 U	--	0.0076 U	0.0096 U	**0.042**	0.010 U	0.0081 U	0.0081 U	0.0086 U	0.0080 U	0.0076 U	0.0076 U	0.0071 U	0.0083 U	0.0083 U	0.0072 U	0.0078 U	0.0093 U	**0.046**	0.0085 U
Naphthalene	5	**0.010**	--	--	**0.081**	0.0075 U	0.0075 U	**0.015**	0.011 U	--	0.0076 U	0.0096 U	**0.12**	**0.014**	0.0081 U	0.0081 U	0.0086 U	0.0080 U	0.0076 U	0.0076 U	0.0071 U	0.0083 U	0.0083 U	0.0072 U	0.0078 U	**0.016**	**0.078**	0.0085 U
Phenanthrene	--	**0.013**	--	--	**0.10**	**0.037**	**0.011**	**0.053**	**0.016**	--	0.0076 U	**0.016**	**0.40**	**0.054**	0.0081 U	**0.012**	**0.036**	0.0080 U	0.0076 U	0.0076 U	0.0071 U	0.0083 U	0.0083 U	0.0072 U	**0.11**	0.0093 U	**0.25**	0.0085 U
Pyrene	2400	**0.015**	--	--	**0.17**	**0.090**	**0.014**	**0.081**	**0.042**	--	0.0076 U	**0.042**	**0.39**	**0.022**	0.0081 U	**0.013**	**0.066**	0.0080 U	0.0076 U	0.0076 U	0.0071 U	0.0083 U	0.0083 U	0.0072 U	**0.15**	0.0093 U	**0.11**	0.0085 U
Carcinogenic PAHs																												
Benz(a)anthracene	--	0.0080 U	--	--	**0.074**	**0.037**	0.0075 U	**0.044**	**0.019**	--	0.0076 U	**0.058**	**0.61**	0.010 U	0.0081 U	0.0081 U	**0.032**	0.0080 U	0.0076 U	0.0076 U	0.0071 U	0.0083 U	0.0083 U	0.0072 U	**0.051**	0.0093 U	**0.032**	0.0085 U
Benzo(a)pyrene	0.1	**0.0093**	--	--	**0.089**	**0.046**	**0.0084**	**0.050**	**0.016**	--	0.0076 U	**0.056**	**0.33**	0.010 U	0.0081 U	0.0081 U	**0.039**	0.0080 U	0.0076 U	0.0076 U	0.0071 U	0.0083 U	0.0083 U	0.0072 U	**0.062**	0.0093 U	**0.029**	0.0085 U
Benzo(b)fluoranthene	--	**0.014**	--	--	**0.10**	**0.044**	**0.012**	**0.071**	**0.033**	--	0.0076 U	**0.15**	**0.89**	0.010 U	0.0081 U	**0.011**	**0.048**	0.0080 U	0.0076 U	0.0076 U	0.0071 U	0.0083 U	0.0083 U	0.0072 U	**0.081**	0.0093 U	**0.031**	0.0085 U
Benzo(j,k)fluoranthene	--	0.0080 U	--	--	**0.031**	**0.016**	0.0075 U	**0.019**	0.011 U	--	0.0076 U	**0.031**	**0.26**	0.010 U	0.0081 U	0.0081 U	**0.015**	0.0080 U	0.0076 U	0.0076 U	0.0071 U	0.0083 U	0.0083 U	0.0072 U	**0.031**	0.0093 U	0.0086 U	0.0085 U
Chrysene	--	**0.015**	--	--	**0.081**	**0.044**	**0.0083**	**0.049**	**0.042**	--	0.0076 U	**0.088**	**0.99**	**0.011**	0.0081 U	**0.0085**	**0.040**	0.0080 U	0.0076 U	0.0076 U	0.0071 U	0.0083 U	0.0083 U	0.0072 U	**0.067**	0.0093 U	**0.048**	**0.012**
Dibenzo(a,h)anthracene	--	0.0080 U	--	--	0.016 U	0.0075 U	0.0075 U	0.0082 U	0.011 U	--	0.0076 U	**0.016**	**0.06**	0.010 U	0.0081 U	0.0081 U	0.0086 U	0.0080 U	0.0076 U	0.0076 U	0.0071 U	0.0083 U	0.0083 U	0.0072 U	**0.010**	0.0093 U	0.0086 U	0.0085 U
Indeno(1,2,3-cd)pyrene	--	0.0080 U	--	--	**0.067**	**0.028**	0.0075 U	**0.038**	**0.013**	--	0.0076 U	**0.066**	**0.15**	0.010 U	0.0081 U	0.0081 U	**0.024**	0.0080 U	0.0076 U	0.0076 U	0.0071 U	0.0083 U	0.0083 U	0.0072 U	**0.041**	0.0093 U	**0.014**	0.0085 U
Total cPAHs TEQ[4]	0.1	**0.012**	--	--	**0.12**	**0.059**	**0.011**	**0.068**	**0.024**	--	ND	**0.089**	**0.54**	**0.00761**	ND	**0.0069**	**0.052**	ND	ND	ND	ND	ND	ND	ND	**0.081**	ND	**0.038**	**0.0065**
Polychlorinated Biphenyls																												
Aroclor 1016	5.6	0.060 U	--	--	0.059 U	0.056 U	0.056 U	0.061 U	0.085 U	--	--	0.072 U	0.090 U	0.075 U	--	0.061 U	--	--	--	--	--	--	--	--	--	--	0.065 U	0.064 U
Aroclor 1221	--	0.060 U	--	--	0.059 U	0.056 U	0.056 U	0.061 U	0.085 U	--	--	0.072 U	0.090 U	0.075 U	--	0.061 U	--	--	--	--	--	--	--	--	--	--	0.065 U	0.064 U
Aroclor 1232	--	0.060 U	--	--	0.059 U	0.056 U	0.056 U	0.061 U	0.085 U	--	--	0.072 U	0.090 U	0.075 U	--	0.061 U	--	--	--	--	--	--	--	--	--	--	0.065 U	0.064 U
Aroclor 1242	--	0.060 U	--	--	0.059 U	0.056 U	0.056 U	0.061 U	0.085 U	--	--	0.072 U	0.090 U	0.075 U	--	0.061 U	--	--	--	--	--	--	--	--	--	--	0.065 U	0.064 U
Aroclor 1248	--	0.060 U	--	--	0.059 U	0.056 U	0.056 U	0.061 U	0.085 U	--	--	0.072 U	0.090 U	0.075 U	--	0.061 U	--	--	--	--	--	--	--	--	--	--	0.065 U	0.064 U
Aroclor 1254	0.5	0.060 U	--	--	0.059 U	0.056 U	0.056 U	0.061 U	0.085 U	--	--	0.072 U	0.090 U	0.075 U	--	0.061 U	--	--	--	--	--	--	--	--	--	--	0.065 U	0.064 U
Aroclor 1260	0.5	0.060 U	--	--	0.059 U	0.056 U	0.056 U	0.061 U	0.085 U	--	--	0.072 U	0.090 U	0.075 U	--	0.061 U	--	--	--	--	--	--	--	--	--	--	0.065 U	0.064 U
Volatile Organic Compounds																												
1,1,1,2-Tetrachloroethane	38	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
1,1,1-Trichloroethane	2	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
1,1,2,2-Tetrachloroethane	5	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.12 U	--	--	0.078 U	0.12 U	0.062 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
1,1,2-Trichloroethane	18	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
1,1-Dichloroethane	180	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
1,1-Dichloroethene	4000	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
1,1-Dichloropropene	--	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
1,2,3-Trichlorobenzene	--	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.12 U	--	--	0.078 U	0.12 U	0.062 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
1,2,3-Trichloropropane	0.0063	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.12 U	--	--	0.078 U	0.12 U	0.062 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
1,2,4-Trichlorobenzene	34	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.12 U	--	--	0.078 U	0.12 U	0.062 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
1,2-Dibromo-3-chloropropane	1.3	0.0067 U	--	--	0.0052 U	0.0058 U	0.0051 U	0.0062 U	0.60 U	--	--	0.39 U	0.59 U	0.31 U	--	0.0025 U	--	--	--	--	--	--	--	--	--	--	0.0024 U	0.0027 U
1,2-Dibromoethane (EDB)	0.005	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
1,2-Dichlorobenzene	7200	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.12 U	--	--	0.078 U	0.12 U	0.062 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
1,2-Dichloroethane (EDC)	11	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
1,2-Dichloropropane	27	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
1,3-Dichlorobenzene	--	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.12 U	--	--	0.078 U	0.12 U	0.062 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
1,3-Dichloropropane	--	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U

Table 4. Surface Soil Data

Project No. 210577, 2200 Cooper Point Road NW, Olympia, Washington

Analyte (by constituent group)	MTCA Soil Cleanup Levels for Unrestricted Land Use[3]	SS1 11/11/2020 SS1 0-0.5	SS2 11/11/2020 SS2 0-0.5	SS2A 11/11/2020 SS2-A[2] 0-0.5	SS3 11/11/2020 SS3 0-0.5	SS4 11/11/2020 SS4 0-0.5	SS5 11/11/2020 SS5 0-0.5	SS6 11/11/2020 SS6 0-0.5	SS7 11/11/2020 SS7 0-0.5	SS8 11/11/2020 SS8 0-0.5	SS9 11/11/2020 SS9 0-0.5	SS10 11/11/2020 SS10 0-0.5	SS11 11/11/2020 SS11 0-0.5	SS12 11/11/2020 SS12 0-0.5	SS13 11/11/2020 SS13 0-0.5	SS14 11/11/2020 SS14 0-0.5	SS15 11/11/2020 SS15 0-0.5	SS16 11/11/2020 SS16 0-0.5	SS17 11/11/2020 SS17 0-0.5	SS18 11/11/2020 SS18 0-0.5	SS19 11/11/2020 SS19 0-0.5	SS20 11/11/2020 SS20 0-0.5	SS20A 11/11/2020 SS20-A 0-0.5	SS21 11/11/2020 SS21 0-0.5	SS22 11/11/2020 SS22 0-0.5	SS23 11/11/2020 SS23 0-0.5	SS24 11/11/2020 SS24 0-0.5	SS25 11/11/2020 SS25 0-0.5
1,4-Dichlorobenzene	190	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.12 U	--	--	0.078 U	0.12 U	0.062 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
2,2-Dichloropropane	--	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
2-Chloroethyl Vinyl Ether	--	0.0067 U	--	--	0.0052 U	0.0058 U	0.0051 U	0.0062 U	0.0079 U	--	--	0.0054 U	0.0085 U	0.0047 U	--	0.0025 U	--	--	--	--	--	--	--	--	--	--	0.0024 U	0.0027 U
2-Chlorotoluene	1600	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.12 U	--	--	0.078 U	0.12 U	0.062 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
4-Chlorotoluene	--	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.12 U	--	--	0.078 U	0.12 U	0.062 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
Bromobenzene	640	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.12 U	--	--	0.078 U	0.12 U	0.062 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
Bromochloromethane	--	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
Bromodichloromethane	16	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
Bromoform	130	0.0067 U	--	--	0.0052 U	0.0058 U	0.0051 U	0.0062 U	0.0079 U	--	--	0.0054 U	0.0085 U	0.0047 U	--	0.0025 U	--	--	--	--	--	--	--	--	--	--	0.0024 U	0.0027 U
Bromomethane	110	0.0067 U	--	--	0.0052 U	0.0058 U	0.0051 U	0.0062 U	0.0079 U	--	--	0.0054 U	0.0085 U	0.0047 U	--	0.0025 U	--	--	--	--	--	--	--	--	--	--	0.0024 U	0.0027 U
Carbon Tetrachloride	14	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
Chlorobenzene	1600	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
Chloroethane	--	0.0067 U	--	--	0.0052 U	0.0058 U	0.0051 U	0.0062 U	0.0079 U	--	--	0.0054 U	0.0085 U	0.0047 U	--	0.0025 U	--	--	--	--	--	--	--	--	--	--	0.0024 U	0.0027 U
Chloroform	32	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
Chloromethane	--	0.010 U	--	--	0.0081 U	0.0089 U	0.0078 U	0.0095 U	0.012 U	--	--	0.0083 U	0.013 U	0.0072 U	--	0.0039 U	--	--	--	--	--	--	--	--	--	--	0.0024 U	0.0027 U
cis-1,2-Dichloroethene (cDCE)	160	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
cis-1,3-Dichloropropene	--	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
Dibromochloromethane	12	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
Dibromomethane	800	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
Dichlorodifluoromethane	16000	0.0024 U	--	--	0.0019 U	0.0021 U	0.0018 U	0.0022 U	0.0028 U	--	--	0.0019 U	0.0031 U	0.0017 U	--	0.00091 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
m,p-Xylenes	16000	0.068 U	0.051 U	0.045 U	0.055 U	0.039 U	0.044 U	0.046 U	0.12 U	0.061 U	0.040 U	0.078 U	0.12 U	0.099 U	0.049 U	0.060 U	0.081 U	0.071 U	0.050 U	0.042 U	0.038 U	0.047 U	0.060 U	0.035 U	0.045 U	0.064 U	0.045 U	0.055 U
Methyl tert-butyl ether (MTBE)	0.1	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
Methylene Chloride	0.02	0.0067 U	--	--	0.0052 U	0.0058 U	0.0051 U	0.0062 U	0.0079 U	--	--	0.0054 U	0.0085 U	0.0047 U	--	0.0025 U	--	--	--	--	--	--	--	--	--	--	0.0024 U	0.0027 U
Methyliodide	--	0.0067 U	--	--	0.0052 U	0.0058 U	0.0051 U	0.0062 U	0.0079 U	--	--	0.0054 U	0.0085 U	0.0047 U	--	0.0025 U	--	--	--	--	--	--	--	--	--	--	0.0024 U	0.0027 U
o-Xylene	16000	0.068 U	0.051 U	0.045 U	0.055 U	0.039 U	0.044 U	0.046 U	0.12 U	0.061 U	0.040 U	0.078 U	0.12 U	0.099 U	0.049 U	0.060 U	0.081 U	0.071 U	0.050 U	0.042 U	0.038 U	0.047 U	0.060 U	0.035 U	0.045 U	0.064 U	0.045 U	0.055 U
Tetrachloroethene (PCE)	0.05	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
trans-1,2-Dichloroethene	1600	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
trans-1,3-Dichloropropene	--	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
Trichloroethene (TCE)	0.03	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
Trichlorofluoromethane	24000	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U
Vinyl Chloride	0.67	0.0013 U	--	--	0.0010 U	0.0012 U	0.0010 U	0.0012 U	0.0016 U	--	--	0.0011 U	0.0017 U	0.00094 U	--	0.00051 U	--	--	--	--	--	--	--	--	--	--	0.00047 U	0.00055 U

Notes

All results in milligrams per kilogram

Results in **bold** indicate concentrations of the analyte detected above the reporting limit (RL)

Blue shaded cells indicate concentrations of the analyte detected above the MTCA cleanup level

ND - individual compounds not detected above the laboratory RL so a total concentration is not calculated

[1]Depth of sample collected in feet below ground surface (bgs)

[2]Sample identifications that include an "A" indicate a field duplicate of the primary sample of the same name without an "A"

[3]Washington State Model Toxics Control Act (MTCA) Method A or B Soil Cleanup Levels for Unrestricted Land Uses (WAC 173-340)

[4]Total carcinogenic polycyclic aromatic hydrocarbon (cPAH) toxicity equivalent concentration (TEQ) calcualted per WAC 173-340-708(8) using 1/2 the RL for non-detect (ND) results.

U - Analyte not detected at or above the RL shown

"--" - indicates data not available

Table 5. Subsurface Soil Data

Project No. 210577, 2200 Cooper Point Road NW, Olympia, Washington

Sample Location		B1	B1	B2	B2	B2	B2	B3	B3	B3	B3	B3	B4	B4	B5	B5
Sample Date		11/09/2020	11/09/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/09/2020	11/09/2020	11/09/2020	11/09/2020	11/09/2020	11/09/2020	11/09/2020	11/10/2020	11/10/2020
Sample Identification		B1-7	B1-15	B2-7	B2-7A[2]	B2-15	B2-15A	B3-7	B3-7A	B3-10	B3-15	B3-15A	B4-7	B4-15	B5-7	B5-15
Sample Depth (feet bgs)[1]		7	15	7	7	15	15	7	7	10	15	15	7	15	7	15
Interpreted Lithology of Sampled Unit		Qvr	Qvr	Qvr	Qvr	Qvr	Qvr	Fill	Fill	Fill	Qt	Qt	Qvr	Qvr	Qvr	Qvr
Analyte (by constituent group)	MTCA Soil Cleanup Levels for Unrestricted Land Use[3]															
Total Petroleum Hydrocarbons																
Gasoline-Range Organics	100	5.5 U	5.5 U	4.9 U	5.9 U	5.3 U	6.5 U	9.8 U	11 U	**21**	5.6 U	4.7 U	6.5 U	7.1 U	5.4 U	6.2 U
Diesel-Range Organics	2000	28 U	27 U	28 U	28 U	29 U	30 U	39 U	**120**	**700**	28 U	28 U	32 U	31 U	27 U	32 U
Motor Oil-Range Organics	2000	56 U	55 U	**170**	**97**	58 U	60 U	**530**	**960**	**4500**	56 U	57 U	65 U	63 U	54 U	63 U
TPH-D+O (ND = 1/2 RL)	2000	ND	ND	**184**	**111**	ND	ND	**549.5**	**1080**	**5200**	ND	ND	ND	ND	ND	ND
Benzene, Toluene, Ethylbenzene and Xylenes																
Benzene	0.03	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.022 U	0.040 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Toluene	7	0.055 U	0.055 U	0.049 U	0.059 U	0.053 U	0.065 U	0.098 U	0.11 U	0.20 U	0.056 U	0.047 U	0.065 U	0.071 U	0.054 U	0.062 U
Ethylbenzene	6	0.055 U	0.055 U	0.049 U	0.059 U	0.053 U	0.065 U	0.098 U	0.11 U	0.20 U	0.056 U	0.047 U	0.065 U	0.071 U	0.054 U	0.062 U
Total Xylenes	9	0.055 U	0.055 U	0.049 U	0.059 U	0.053 U	0.065 U	0.098 U	0.11 U	0.2 U	0.056 U	0.047 U	0.065 U	0.071 U	0.054 U	0.062 U
Metals																
Arsenic	20	--	--	11 U	11 U	12 U	12 U	15 U	15 U	25 U	11 U	11 U	13 U	13 U	11 U	13 U
Barium	16000	--	--	**56**	**65**	**31**	**36**	**96**	**61**	**140**	**20**	**27**	**33**	**36**	**53**	**26**
Cadmium	2	--	--	0.57 U	0.56 U	0.58 U	0.60 U	0.77 U	0.77 U	1.2 U	0.56 U	0.57 U	0.65 U	0.63 U	0.54 U	0.63 U
Chromium	--	--	--	**19**	**23**	**18**	**18**	**26**	**19**	**30**	**7.3**	**12**	**20**	**22**	**17**	**18**
Copper	3200	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	250	--	--	5.7 U	**7**	5.8 U	6.0 U	**10**	**26**	**100**	5.6 U	5.7 U	6.5 U	6.3 U	5.4 U	6.3 U
Mercury	2	--	--	0.28 U	0.28 U	0.29 U	0.30 U	0.38 U	0.38 U	0.62 U	0.28 U	0.28 U	0.32 U	0.31 U	0.27 U	0.31 U
Selenium	400	--	--	11 U	11 U	12 U	12 U	15 U	15 U	25 U	11 U	11 U	13 U	13 U	11 U	13 U
Silver	400	--	--	1.1 U	1.1 U	1.2 U	1.2 U	1.5 U	1.5 U	2.5 U	1.1 U	1.1 U	1.3 U	1.3 U	1.1 U	1.3 U
Chromium (VI)	19	--	--	1.1 U	1.1 U	--	--	1.5 U	1.5 U	2.5 U	--	--	1.3 U	1.3 U	--	--
Semivolatile Organic Compounds																
Hexachlorobutadiene	13	--	--	0.0053 U	0.0054 U	--	--	0.0075 U	0.45 U	1.0 U	--	--	--	--	--	--
Pentachlorophenol	2.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (PAHs)																
1-Methylnaphthalene	34	--	--	0.0076 U	0.0074 U	0.0078 U	0.0080 U	0.010 U	0.010 U	**0.019**	0.0075 U	0.0076 U	0.0086 U	0.0083 U	0.0072 U	0.0084 U
2-Methylnaphthalene	320	--	--	0.0076 U	0.0074 U	0.0078 U	0.0080 U	0.010 U	0.010 U	**0.030**	0.0075 U	0.0076 U	0.0086 U	0.0083 U	0.0072 U	0.0084 U
Acenaphthene	4800	--	--	0.0076 U	0.0074 U	0.0078 U	0.0080 U	0.010 U	0.010 U	**0.021**	0.0075 U	0.0076 U	0.0086 U	0.0083 U	0.0072 U	0.0084 U
Acenaphthylene	--	--	--	0.0076 U	0.0074 U	0.0078 U	0.0080 U	0.010 U	0.010 U	0.016 U	0.0075 U	0.0076 U	0.0086 U	0.0083 U	0.0072 U	0.0084 U
Anthracene	24000	--	--	0.0076 U	0.0074 U	0.0078 U	0.0080 U	0.010 U	0.010 U	0.016 U	0.0075 U	0.0076 U	0.0086 U	0.0083 U	0.0072 U	0.0084 U
Benzo(g,h,i)perylene	--	--	--	0.0076 U	0.0074 U	0.0078 U	0.0080 U	0.010 U	0.010 U	0.016 U	0.0075 U	0.0076 U	0.0086 U	0.0083 U	0.0072 U	0.0084 U
Fluoranthene	3200	--	--	**0.013**	0.0074 U	0.0078 U	0.0080 U	0.010 U	0.010 U	**0.053**	0.0075 U	0.0076 U	0.0086 U	0.0083 U	0.0072 U	0.0084 U
Fluorene	3200	--	--	0.0076 U	0.0074 U	0.0078 U	0.0080 U	0.010 U	0.010 U	**0.021**	0.0075 U	0.0076 U	0.0086 U	0.0083 U	0.0072 U	0.0084 U
Naphthalene	5	--	--	0.0076 U	0.0074 U	0.0078 U	0.0080 U	0.010 U	0.010 U	**0.083**	0.0075 U	0.0076 U	0.0086 U	0.0083 U	0.0072 U	0.0084 U
Phenanthrene	--	--	--	**0.013**	0.0074 U	0.0078 U	0.0080 U	0.010 U	**0.013**	**0.063**	0.0075 U	0.0076 U	0.0086 U	0.0083 U	0.0072 U	0.0084 U
Pyrene	2400	--	--	**0.016**	0.0074 U	0.0078 U	0.0080 U	0.010 U	0.010 U	**0.053**	0.0075 U	0.0076 U	0.0086 U	0.0083 U	0.0072 U	0.0084 U

Table 5. Subsurface Soil Data

Project No. 210577, 2200 Cooper Point Road NW, Olympia, Washington

Analyte (by constituent group)	MTCA Soil Cleanup Levels for Unrestricted Land Use[3]	B1 11/09/2020 B1-7 7 Qvr	B1 11/09/2020 B1-15 15 Qvr	B2 11/10/2020 B2-7 7 Qvr	B2 11/10/2020 B2-7A[2] 7 Qvr	B2 11/10/2020 B2-15 15 Qvr	B2 11/10/2020 B2-15A 15 Qvr	B3 11/09/2020 B3-7 7 Fill	B3 11/09/2020 B3-7A 7 Fill	B3 11/09/2020 B3-10 10 Fill	B3 11/09/2020 B3-15 15 Qt	B3 11/09/2020 B3-15A 15 Qt	B4 11/09/2020 B4-7 7 Qvr	B4 11/09/2020 B4-15 15 Qvr	B5 11/10/2020 B5-7 7 Qvr	B5 11/10/2020 B5-15 15 Qvr
Carcinogenic PAHs																
Benz(a)anthracene	--	--	--	**0.0077**	0.0074 U	0.0078 U	0.0080 U	0.010 U	0.010 U	0.016 U	0.0075 U	0.0076 U	0.0086 U	0.0083 U	0.0072 U	0.0084 U
Benzo(a)pyrene	0.1	--	--	**0.0086**	0.0074 U	0.0078 U	0.0080 U	0.010 U	0.010 U	**0.018**	0.0075 U	0.0076 U	0.0086 U	0.0083 U	0.0072 U	0.0084 U
Benzo(b)fluoranthene	--	--	--	**0.011**	0.0074 U	0.0078 U	0.0080 U	**0.013**	0.010 U	**0.022**	0.0075 U	0.0076 U	0.0086 U	0.0083 U	0.0072 U	0.0084 U
Benzo(j,k)fluoranthene	--	--	--	0.0076 U	0.0074 U	0.0078 U	0.0080 U	0.010 U	0.010 U	0.016 U	0.0075 U	0.0076 U	0.0086 U	0.0083 U	0.0072 U	0.0084 U
Chrysene	--	--	--	**0.0096**	0.0074 U	0.0078 U	0.0080 U	0.010 U	**0.011**	**0.027**	0.0075 U	0.0076 U	0.0086 U	0.0083 U	0.0072 U	0.0084 U
Dibenzo(a,h)anthracene	--	--	--	0.0076 U	0.0074 U	0.0078 U	0.0080 U	0.010 U	0.010 U	0.016 U	0.0075 U	0.0076 U	0.0086 U	0.0083 U	0.0072 U	0.0084 U
Indeno(1,2,3-cd)pyrene	--	--	--	0.0076 U	0.0074 U	0.0078 U	0.0080 U	0.010 U	0.010 U	0.016 U	0.0075 U	0.0076 U	0.0086 U	0.0083 U	0.0072 U	0.0084 U
Total cPAHs TEQ[4]	0.1	--	--	**0.012**	ND	ND	ND	**0.0084**	**0.0076**	**0.024**	ND	ND	ND	ND	ND	ND
Polychlorinated Biphenyls																
Aroclor 1016	5.6	--	--	0.057 U	0.056 U	--	--	0.077 U	0.077 U	0.12 U	--	--	--	--	--	--
Aroclor 1221	--	--	--	0.057 U	0.056 U	--	--	0.077 U	0.077 U	0.12 U	--	--	--	--	--	--
Aroclor 1232	--	--	--	0.057 U	0.056 U	--	--	0.077 U	0.077 U	0.12 U	--	--	--	--	--	--
Aroclor 1242	--	--	--	0.057 U	0.056 U	--	--	0.077 U	0.077 U	0.12 U	--	--	--	--	--	--
Aroclor 1248	--	--	--	0.057 U	0.056 U	--	--	0.077 U	0.077 U	0.12 U	--	--	--	--	--	--
Aroclor 1254	0.5	--	--	0.057 U	0.056 U	--	--	0.077 U	0.077 U	0.12 U	--	--	--	--	--	--
Aroclor 1260	0.5	--	--	0.057 U	0.056 U	--	--	0.077 U	0.077 U	0.12 U	--	--	--	--	--	--
Volatile Organic Compounds																
1,1,1,2-Tetrachloroethane	38	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
1,1,1-Trichloroethane	2	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	5	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.091 U	0.20 U	--	--	--	--	--	--
1,1,2-Trichloroethane	18	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
1,1-Dichloroethane	180	--	--	0.0014 U	0.0014 U	--	--	0.0020 U	0.0017 U	0.0036 U	--	--	--	--	--	--
1,1-Dichloroethene	4000	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
1,1-Dichloropropene	--	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
1,2,3-Trichlorobenzene	--	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.091 U	0.20 U	--	--	--	--	--	--
1,2,3-Trichloropropane	0.0063	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.091 U	0.20 U	--	--	--	--	--	--
1,2,4-Trichlorobenzene	34	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.091 U	0.20 U	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	1.3	--	--	0.0053 U	0.0054 U	--	--	0.0075 U	0.45 U	1.0 U	--	--	--	--	--	--
1,2-Dibromoethane (EDB)	0.005	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
1,2-Dichlorobenzene	7200	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.091 U	0.20 U	--	--	--	--	--	--
1,2-Dichloroethane (EDC)	11	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
1,2-Dichloropropane	27	--	--	0.0014 U	0.0014 U	--	--	0.0020 U	0.0017 U	0.0036 U	--	--	--	--	--	--
1,3-Dichlorobenzene	--	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.091 U	0.20 U	--	--	--	--	--	--
1,3-Dichloropropane	--	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
1,4-Dichlorobenzene	190	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.091 U	0.20 U	--	--	--	--	--	--
2,2-Dichloropropane	--	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
2-Chloroethyl Vinyl Ether	--	--	--	0.0053 U	0.0054 U	--	--	0.0075 U	0.0064 U	0.014 U	--	--	--	--	--	--
2-Chlorotoluene	1600	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.091 U	0.20 U	--	--	--	--	--	--

Table 5. Subsurface Soil Data

Project No. 210577, 2200 Cooper Point Road NW, Olympia, Washington

Sample Location		B1	B1	B2	B2	B2	B2	B3	B3	B3	B3	B3	B4	B4	B5	B5
Sample Date		11/09/2020	11/09/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/09/2020	11/09/2020	11/09/2020	11/09/2020	11/09/2020	11/09/2020	11/09/2020	11/10/2020	11/10/2020
Sample Identification		B1-7	B1-15	B2-7	B2-7A[2]	B2-15	B2-15A	B3-7	B3-7A	B3-10	B3-15	B3-15A	B4-7	B4-15	B5-7	B5-15
Sample Depth (feet bgs)[1]		7	15	7	7	15	15	7	7	10	15	15	7	15	7	15
Interpreted Lithology of Sampled Unit		Qvr	Qvr	Qvr	Qvr	Qvr	Qvr	Fill	Fill	Fill	Qt	Qt	Qvr	Qvr	Qvr	Qvr
Analyte (by constituent group)	MTCA Soil Cleanup Levels for Unrestricted Land Use[3]															
4-Chlorotoluene	--	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.091 U	0.20 U	--	--	--	--	--	--
Bromobenzene	640	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.091 U	0.20 U	--	--	--	--	--	--
Bromochloromethane	--	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
Bromodichloromethane	16	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
Bromoform	130	--	--	0.0053 U	0.0054 U	--	--	0.0075 U	0.0064 U	0.014 U	--	--	--	--	--	--
Bromomethane	110	--	--	0.0053 U	0.0054 U	--	--	0.0075 U	0.0064 U	0.014 U	--	--	--	--	--	--
Carbon Tetrachloride	14	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
Chlorobenzene	1600	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
Chloroethane	--	--	--	0.0053 U	0.0054 U	--	--	0.0075 U	0.0064 U	0.014 U	--	--	--	--	--	--
Chloroform	32	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
Chloromethane	--	--	--	0.0079 U	0.0080 U	--	--	0.011 U	0.0096 U	0.021 U	--	--	--	--	--	--
cis-1,2-Dichloroethene (cDCE)	160	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
cis-1,3-Dichloropropene	--	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
Dibromochloromethane	12	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
Dibromomethane	800	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
Dichlorodifluoromethane	16000	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
m,p-Xylenes	16000	0.055 U	0.055 U	0.049 U	0.059 U	0.053 U	0.065 U	0.098 U	0.11 U	0.20 U	0.056 U	0.047 U	0.065 U	0.071 U	0.054 U	0.062 U
Methyl tert-butyl ether (MTBE)	0.1	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
Methylene Chloride	0.02	--	--	0.0068 U	0.0068 U	--	--	0.0096 U	0.0082 U	0.018 U	--	--	--	--	--	--
Methyliodide	--	--	--	0.0053 U	0.0054 U	--	--	0.0075 U	0.0064 U	0.014 U	--	--	--	--	--	--
o-Xylene	16000	0.055 U	0.055 U	0.049 U	0.059 U	0.053 U	0.065 U	0.098 U	0.11 U	0.20 U	0.056 U	0.047 U	0.065 U	0.071 U	0.054 U	0.062 U
Tetrachloroethene (PCE)	0.05	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
trans-1,2-Dichloroethene	1600	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
trans-1,3-Dichloropropene	--	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
Trichloroethene (TCE)	0.03	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
Trichlorofluoromethane	24000	--	--	0.0011 U	0.0011 U	--	--	0.0015 U	0.0013 U	0.0028 U	--	--	--	--	--	--
Vinyl Chloride	0.67	--	--	0.0015 U	0.0015 U	--	--	0.0021 U	0.0018 U	0.0039 U	--	--	--	--	--	--

Notes

All results in milligrams per kilogram

Results in **bold** indicate concentrations of the analyte detected above the reporting limit (RL)

Blue shaded cells indicate concentrations of the analyte detected above the MTCA cleanup level

Qt/Qvr - native glacial deposits consisting of either Quaternary glacial till (Qt) or Quaternary recessional outwash (Qvr)

unk - indicates information not available to determine lithologic unit

ND - individual compounds not detected above the laboratory RL so a total concentration is not calculated

[1]Depth of sample collected in feet below ground surface (bgs)

[2]Sample identifications that include an "A" indicate a field duplicate of the primary sample of the same name without an "A"

[3]Washington State Model Toxics Control Act (MTCA) Method A or B Soil Cleanup Levels for Unrestricted Land Uses (WAC 173-340)

[4]Total carcinogenic polycyclic aromatic hydrocarbon (cPAH) toxicity equivalent concentration (TEQ) calcualted per WAC 173-340-708(8) using 1/2 the RL for non-detect (ND) results.

U - Analyte not detected at or above the RL shown

"--" - indicates data not available

Table 5. Subsurface Soil Data

Project No. 210577, 2200 Cooper Point Road NW, Olympia, Washington

Sample Location		B6	B6	B7	B7	B8	B8	B9	B9	B10	B10	B11	B11	B12	B13	B14
Sample Date		11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/09/2020	11/09/2020	11/09/2020	11/09/2020	11/09/2020	11/09/2020	11/09/2020	11/09/2020	06/24/2021	06/24/2021	06/24/2021
Sample Identification		B6-7	B6-15	B7-7	B7-15	B8-7	B8-15	B9-7	B9-15	B10-7	B10-15	B11-7	B11-15	B12-8	B13-8	B14-8
Sample Depth (feet bgs)[1]		7	15	7	15	7	15	7	15	7	15	7	15	8	8	8
Interpreted Lithology of Sampled Unit		Fill	Qvr	Fill	Qvr	Qvr	Qvr	Fill	Qvr	Qt	Qt	Qt	Qt	Qvr	Qvr	Qvr
Analyte (by constituent group)	MTCA Soil Cleanup Levels for Unrestricted Land Use[3]															
Total Petroleum Hydrocarbons																
Gasoline-Range Organics	100	7.4 U	5.8 U	14 U	4.7 U	4.1 U	4.0 U	7.1 U	5.3 U	6.4 U	5.8 U	5.4 U	6.6 U	--	--	--
Diesel-Range Organics	2000	29 U	28 U	**140**	29 U	27 U	29 U	**280**	30 U	30 U	27 U	29 U	30 U	50 U	50 U	50 U
Motor Oil-Range Organics	2000	59 U	56 U	**1300**	59 U	53 U	58 U	**1200**	60 U	**75**	54 U	**67**	59 U	250 U	250 U	250 U
TPH-D+O (ND = 1/2 RL)	2000	ND	ND	**1440**	ND	ND	ND	**1480**	ND	**90**	ND	**81.5**	ND	ND	ND	ND
Benzene, Toluene, Ethylbenzene and Xylenes																
Benzene	0.03	0.020 U	0.020 U	0.029 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	--	--	--
Toluene	7	0.074 U	0.058 U	0.14 U	0.047 U	0.041 U	0.040 U	0.071 U	0.053 U	0.064 U	0.058 U	0.054 U	0.066 U	--	--	--
Ethylbenzene	6	0.074 U	0.058 U	0.14 U	0.047 U	0.041 U	0.040 U	0.071 U	0.053 U	0.064 U	0.058 U	0.054 U	0.066 U	--	--	--
Total Xylenes	9	0.074 U	0.058 U	0.14 U	0.047 U	0.041 U	0.04 U	0.071 U	0.053 U	0.064 U	0.058 U	0.054 U	0.066 U	--	--	--
Metals																
Arsenic	20	12 U	11 U	19 U	12 U	11 U	12 U	13 U	12 U	12 U	11 U	11 U	12 U	--	--	--
Barium	16000	**64**	**31**	**35**	**31**	**35**	**28**	**63**	**74**	**67**	**58**	**58**	**36**	--	--	--
Cadmium	2	0.59 U	0.56 U	0.95 U	0.59 U	0.53 U	0.58 U	0.64 U	0.60 U	0.61 U	0.54 U	0.57 U	0.59 U	--	--	--
Chromium	--	**26**	**14**	**19**	**19**	**14**	**13**	**16**	**24**	**19**	**14**	**23**	**22**	--	--	--
Copper	3200	--	--	--	--	--	--	--	--	--	--	**19**	**9.2**	--	--	--
Lead	250	**5.9**	5.6 U	**16**	5.9 U	5.3 U	5.8 U	**6.5**	6.0 U	6.1 U	5.4 U	5.7 U	5.9 U	--	--	--
Mercury	2	0.29 U	0.28 U	**1.3**	0.29 U	0.27 U	0.29 U	0.32 U	0.30 U	0.30 U	0.27 U	0.29 U	0.30 U	--	--	--
Selenium	400	12 U	11 U	19 U	12 U	11 U	12 U	13 U	12 U	12 U	11 U	11 U	12 U	--	--	--
Silver	400	1.2 U	1.1 U	1.9 U	1.2 U	1.1 U	1.2 U	1.3 U	1.2 U	1.2 U	1.1 U	1.1 U	1.2 U	--	--	--
Chromium (VI)	19	1.2 U	--	1.9 U	1.2 U	--	--	--	1.2 U	1.2 U	--	1.1 U	1.2 U	--	--	--
Semivolatile Organic Compounds																
Hexachlorobutadiene	13	--	--	0.65 U	--	--	--	0.35 U	--	0.0058 U	--	0.0045 U	--	--	--	--
Pentachlorophenol	2.5	--	--	--	--	--	--	--	--	--	--	0.19 U	0.20 U	--	--	--
Polycyclic Aromatic Hydrocarbons (PAHs)																
1-Methylnaphthalene	34	0.0078 U	0.0075 U	**0.018**	0.0078 U	0.0071 U	0.0077 U	0.0085 U	0.0080 U	0.0081 U	0.0072 U	0.0076 U	0.0079 U	--	--	--
2-Methylnaphthalene	320	0.0078 U	0.0075 U	**0.034**	0.0078 U	0.0071 U	0.0077 U	0.0085 U	0.0080 U	0.0081 U	0.0072 U	0.0076 U	0.0079 U	--	--	--
Acenaphthene	4800	0.0078 U	0.0075 U	**0.067**	0.0078 U	0.0071 U	0.0077 U	0.0085 U	0.0080 U	0.0081 U	0.0072 U	0.0076 U	0.0079 U	--	--	--
Acenaphthylene	--	0.0078 U	0.0075 U	**0.013**	0.0078 U	0.0071 U	0.0077 U	0.0085 U	0.0080 U	0.0081 U	0.0072 U	0.0076 U	0.0079 U	--	--	--
Anthracene	24000	0.0078 U	0.0075 U	**0.11**	0.0078 U	0.0071 U	0.0077 U	0.0085 U	0.0080 U	0.0081 U	0.0072 U	0.0076 U	0.0079 U	--	--	--
Benzo(g,h,i)perylene	--	**0.012**	0.0075 U	**0.019**	0.0078 U	0.0071 U	0.0077 U	0.0085 U	0.0080 U	0.0081 U	0.0072 U	0.0076 U	0.0079 U	--	--	--
Fluoranthene	3200	**0.039**	0.0075 U	**0.35**	0.0078 U	0.0071 U	0.0077 U	0.0085 U	0.0080 U	0.0081 U	0.0072 U	0.0076 U	0.0079 U	--	--	--
Fluorene	3200	0.0078 U	0.0075 U	**0.10**	0.0078 U	0.0071 U	0.0077 U	0.0085 U	0.0080 U	0.0081 U	0.0072 U	0.0076 U	0.0079 U	--	--	--
Naphthalene	5	0.0078 U	0.0075 U	**0.059**	0.0078 U	0.0071 U	0.0077 U	0.0085 U	0.0080 U	0.0081 U	0.0072 U	0.0076 U	0.0079 U	--	--	--
Phenanthrene	--	**0.027**	0.0075 U	**0.18**	0.0078 U	0.0071 U	0.0077 U	**0.014**	0.0080 U	0.0081 U	0.0072 U	0.0076 U	0.0079 U	--	--	--
Pyrene	2400	**0.037**	0.0075 U	**0.35**	0.0078 U	0.0071 U	0.0077 U	**0.034**	0.0080 U	0.0081 U	0.0072 U	0.0076 U	0.0079 U	--	--	--

Table 5. Subsurface Soil Data

Project No. 210577, 2200 Cooper Point Road NW, Olympia, Washington

Sample Location		B6	B6	B7	B7	B8	B8	B9	B9	B10	B10	B11	B11	B12	B13	B14
Sample Date		11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/09/2020	11/09/2020	11/09/2020	11/09/2020	11/09/2020	11/09/2020	11/09/2020	11/09/2020	06/24/2021	06/24/2021	06/24/2021
Sample Identification		B6-7	B6-15	B7-7	B7-15	B8-7	B8-15	B9-7	B9-15	B10-7	B10-15	B11-7	B11-15	B12-8	B13-8	B14-8
Sample Depth (feet bgs)[1]		7	15	7	15	7	15	7	15	7	15	7	15	8	8	8
Interpreted Lithology of Sampled Unit		Fill	Qvr	Fill	Qvr	Qvr	Qvr	Fill	Qvr	Qt	Qt	Qt	Qt	Qvr	Qvr	Qvr
Analyte (by constituent group)	MTCA Soil Cleanup Levels for Unrestricted Land Use[3]															
Carcinogenic PAHs																
Benz(a)anthracene	--	**0.015**	0.0075 U	**0.067**	0.0078 U	0.0071 U	0.0077 U	0.0085 U	0.0080 U	0.0081 U	0.0072 U	0.0076 U	0.0079 U	--	--	--
Benzo(a)pyrene	0.1	**0.017**	0.0075 U	**0.041**	0.0078 U	0.0071 U	0.0077 U	0.0085 U	0.0080 U	0.0081 U	0.0072 U	0.0076 U	0.0079 U	--	--	--
Benzo(b)fluoranthene	--	**0.022**	0.0075 U	**0.077**	0.0078 U	0.0071 U	0.0077 U	0.0085 U	0.0080 U	0.0081 U	0.0072 U	0.0076 U	0.0079 U	--	--	--
Benzo(j,k)fluoranthene	--	**0.009**	0.0075 U	**0.02**	0.0078 U	0.0071 U	0.0077 U	0.0085 U	0.0080 U	0.0081 U	0.0072 U	0.0076 U	0.0079 U	--	--	--
Chrysene	--	**0.021**	0.0075 U	**0.083**	0.0078 U	0.0071 U	0.0077 U	0.0085 U	0.0080 U	0.0081 U	0.0072 U	0.0076 U	0.0079 U	--	--	--
Dibenzo(a,h)anthracene	--	0.0078 U	0.0075 U	0.013 U	0.0078 U	0.0071 U	0.0077 U	0.0085 U	0.0080 U	0.0081 U	0.0072 U	0.0076 U	0.0079 U	--	--	--
Indeno(1,2,3-cd)pyrene	--	**0.012**	0.0075 U	**0.02**	0.0078 U	0.0071 U	0.0077 U	0.0085 U	0.0080 U	0.0081 U	0.0072 U	0.0076 U	0.0079 U	--	--	--
Total cPAHs TEQ[4]	0.1	**0.023**	ND	**0.061**	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--
Polychlorinated Biphenyls																
Aroclor 1016	5.6	--	--	0.095 U	--	--	--	0.064 U	--	0.061 U	--	0.057 U	--	--	--	--
Aroclor 1221	--	--	--	0.095 U	--	--	--	0.064 U	--	0.061 U	--	0.057 U	--	--	--	--
Aroclor 1232	--	--	--	0.095 U	--	--	--	0.064 U	--	0.061 U	--	0.057 U	--	--	--	--
Aroclor 1242	--	--	--	0.095 U	--	--	--	0.064 U	--	0.061 U	--	0.057 U	--	--	--	--
Aroclor 1248	--	--	--	0.095 U	--	--	--	0.064 U	--	0.061 U	--	0.057 U	--	--	--	--
Aroclor 1254	0.5	--	--	0.095 U	--	--	--	0.064 U	--	0.061 U	--	0.057 U	--	--	--	--
Aroclor 1260	0.5	--	--	0.095 U	--	--	--	0.064 U	--	0.061 U	--	0.057 U	--	--	--	--
Volatile Organic Compounds																
1,1,1,2-Tetrachloroethane	38	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
1,1,1-Trichloroethane	2	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
1,1,2,2-Tetrachloroethane	5	--	--	0.13 U	--	--	--	0.070 U	--	0.0012 U	--	0.00091 U	--	--	--	--
1,1,2-Trichloroethane	18	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
1,1-Dichloroethane	180	--	--	0.0025 U	--	--	--	0.0017 U	--	0.0015 U	--	0.0012 U	--	--	--	--
1,1-Dichloroethene	4000	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
1,1-Dichloropropene	--	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
1,2,3-Trichlorobenzene	--	--	--	0.13 U	--	--	--	0.070 U	--	0.0012 U	--	0.00091 U	--	--	--	--
1,2,3-Trichloropropane	0.0063	--	--	0.13 U	--	--	--	0.070 U	--	0.0012 U	--	0.00091 U	--	--	--	--
1,2,4-Trichlorobenzene	34	--	--	0.13 U	--	--	--	0.070 U	--	0.0012 U	--	0.00091 U	--	--	--	--
1,2-Dibromo-3-chloropropane	1.3	--	--	0.65 U	--	--	--	0.35 U	--	0.0058 U	--	0.0045 U	--	--	--	--
1,2-Dibromoethane (EDB)	0.005	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
1,2-Dichlorobenzene	7200	--	--	0.13 U	--	--	--	0.070 U	--	0.0012 U	--	0.00091 U	--	--	--	--
1,2-Dichloroethane (EDC)	11	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
1,2-Dichloropropane	27	--	--	0.0025 U	--	--	--	0.0017 U	--	0.0015 U	--	0.0012 U	--	--	--	--
1,3-Dichlorobenzene	--	--	--	0.13 U	--	--	--	0.070 U	--	0.0012 U	--	0.00091 U	--	--	--	--
1,3-Dichloropropane	--	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
1,4-Dichlorobenzene	190	--	--	0.13 U	--	--	--	0.070 U	--	0.0012 U	--	0.00091 U	--	--	--	--
2,2-Dichloropropane	--	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
2-Chloroethyl Vinyl Ether	--	--	--	0.0095 U	--	--	--	0.0067 U	--	0.0058 U	--	0.0045 U	--	--	--	--
2-Chlorotoluene	1600	--	--	0.13 U	--	--	--	0.070 U	--	0.0012 U	--	0.00091 U	--	--	--	--

Table 5. Subsurface Soil Data

Project No. 210577, 2200 Cooper Point Road NW, Olympia, Washington

Analyte (by constituent group)	MTCA Soil Cleanup Levels for Unrestricted Land Use[3]	B6 11/10/2020 B6-7 7 Fill	B6 11/10/2020 B6-15 15 Qvr	B7 11/10/2020 B7-7 7 Fill	B7 11/10/2020 B7-15 15 Qvr	B8 11/09/2020 B8-7 7 Qvr	B8 11/09/2020 B8-15 15 Qvr	B9 11/09/2020 B9-7 7 Fill	B9 11/09/2020 B9-15 15 Qvr	B10 11/09/2020 B10-7 7 Qt	B10 11/09/2020 B10-15 15 Qt	B11 11/09/2020 B11-7 7 Qt	B11 11/09/2020 B11-15 15 Qt	B12 06/24/2021 B12-8 8 Qvr	B13 06/24/2021 B13-8 8 Qvr	B14 06/24/2021 B14-8 8 Qvr
4-Chlorotoluene	--	--	--	0.13 U	--	--	--	0.070 U	--	0.0012 U	--	0.00091 U	--	--	--	--
Bromobenzene	640	--	--	0.13 U	--	--	--	0.070 U	--	0.0012 U	--	0.00091 U	--	--	--	--
Bromochloromethane	--	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
Bromodichloromethane	16	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
Bromoform	130	--	--	0.0095 U	--	--	--	0.0067 U	--	0.0058 U	--	0.0045 U	--	--	--	--
Bromomethane	110	--	--	0.0095 U	--	--	--	0.0067 U	--	0.0058 U	--	0.0045 U	--	--	--	--
Carbon Tetrachloride	14	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
Chlorobenzene	1600	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
Chloroethane	--	--	--	0.0095 U	--	--	--	0.0067 U	--	0.0058 U	--	0.0045 U	--	--	--	--
Chloroform	32	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
Chloromethane	--	--	--	0.014 U	--	--	--	0.010 U	--	0.0086 U	--	0.0068 U	--	--	--	--
cis-1,2-Dichloroethene (cDCE)	160	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
cis-1,3-Dichloropropene	--	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
Dibromochloromethane	12	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
Dibromomethane	800	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
Dichlorodifluoromethane	16000	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
m,p-Xylenes	16000	0.074 U	0.058 U	0.14 U	0.047 U	0.041 U	0.040 U	0.071 U	0.053 U	0.064 U	0.058 U	0.054 U	0.066 U	--	--	--
Methyl tert-butyl ether (MTBE)	0.1	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
Methylene Chloride	0.02	--	--	0.012 U	--	--	--	0.0085 U	--	0.0074 U	--	0.0058 U	--	--	--	--
Methyliodide	--	--	--	0.0095 U	--	--	--	0.0067 U	--	0.0058 U	--	0.0045 U	--	--	--	--
o-Xylene	16000	0.074 U	0.058 U	0.14 U	0.047 U	0.041 U	0.040 U	0.071 U	0.053 U	0.064 U	0.058 U	0.054 U	0.066 U	--	--	--
Tetrachloroethene (PCE)	0.05	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
trans-1,2-Dichloroethene	1600	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
trans-1,3-Dichloropropene	--	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
Trichloroethene (TCE)	0.03	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
Trichlorofluoromethane	24000	--	--	0.0019 U	--	--	--	0.0013 U	--	0.0012 U	--	0.00091 U	--	--	--	--
Vinyl Chloride	0.67	--	--	0.0027 U	--	--	--	0.0019 U	--	0.0016 U	--	0.0013 U	--	--	--	--

Notes

All results in milligrams per kilogram

Results in **bold** indicate concentrations of the analyte detected above the reporting limit (RL)

Blue shaded cells indicate concentrations of the analyte detected above the MTCA cleanup level

Qt/Qvr - native glacial deposits consisting of either Quaternary glacial till (Qt) or Quaternary recessional outwash (Qvr)

unk - indicates information not available to determine lithologic unit

ND - individual compounds not detected above the laboratory RL so a total concentration is not calculated

[1]Depth of sample collected in feet below ground surface (bgs)

[2]Sample identifications that include an "A" indicate a field duplicate of the primary sample of the same name without an "A"

[3]Washington State Model Toxics Control Act (MTCA) Method A or B Soil Cleanup Levels for Unrestricted Land Uses (WAC 173-340)

[4]Total carcinogenic polycyclic aromatic hydrocarbon (cPAH) toxicity equivalent concentration (TEQ) calcualted per WAC 173-340-708(8) using 1/2 the RL for non-detect (ND) results.

U - Analyte not detected at or above the RL shown

"--" - indicates data not available

Table 5. Subsurface Soil Data

Project No. 210577, 2200 Cooper Point Road NW, Olympia, Washington

Sample Location		B15	B16	B17	B18	B18	B19	B19	B20	B20	B21	B21
Sample Date		06/24/2021	06/24/2021	06/24/2021	06/25/2021	06/25/2021	06/25/2021	06/25/2021	06/25/2021	06/25/2021	06/25/2021	06/25/2021
Sample Identification		B15-9	B16-8	B17-8	B18-8	B18-18	B19-10	B19-17	B20-10	B20-15	B21-5	B21-10
Sample Depth (feet bgs)[1]		9	8	8	8	18	10	17	10	15	5	10
Interpreted Lithology of Sampled Unit		Qvr	Qvr	Qvr	Qvr	Qvr	Qvr	Qvr	Qvr	Qvr	Fill	Qvr
Analyte (by constituent group)	MTCA Soil Cleanup Levels for Unrestricted Land Use[3]											
Total Petroleum Hydrocarbons												
Gasoline-Range Organics	100	--	--	--	--	--	--	--	--	--	--	--
Diesel-Range Organics	2000	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Motor Oil-Range Organics	2000	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
TPH-D+O (ND = 1/2 RL)	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene, Toluene, Ethylbenzene and Xylenes												
Benzene	0.03	--	--	--	--	--	--	--	--	--	--	--
Toluene	7	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	6	--	--	--	--	--	--	--	--	--	--	--
Total Xylenes	9	--	--	--	--	--	--	--	--	--	--	--
Metals												
Arsenic	20	--	--	--	--	--	--	--	--	--	--	--
Barium	16000	--	--	--	--	--	--	--	--	--	--	--
Cadmium	2	--	--	--	--	--	--	--	--	--	--	--
Chromium	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3200	--	--	--	--	--	--	--	--	--	--	--
Lead	250	--	--	--	--	--	--	--	--	--	--	--
Mercury	2	--	--	--	--	--	--	--	--	--	--	--
Selenium	400	--	--	--	--	--	--	--	--	--	--	--
Silver	400	--	--	--	--	--	--	--	--	--	--	--
Chromium (VI)	19	--	--	--	--	--	--	--	--	--	--	--
Semivolatile Organic Compounds												
Hexachlorobutadiene	13	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	2.5	--	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (PAHs)												
1-Methylnaphthalene	34	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	4800	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	24000	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3200	--	--	--	--	--	--	--	--	--	--	--
Fluorene	3200	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	5	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	2400	--	--	--	--	--	--	--	--	--	--	--

Table 5. Subsurface Soil Data

Project No. 210577, 2200 Cooper Point Road NW, Olympia, Washington

Sample Location		B15	B16	B17	B18	B18	B19	B19	B20	B20	B21	B21
Sample Date		06/24/2021	06/24/2021	06/24/2021	06/25/2021	06/25/2021	06/25/2021	06/25/2021	06/25/2021	06/25/2021	06/25/2021	06/25/2021
Sample Identification		B15-9	B16-8	B17-8	B18-8	B18-18	B19-10	B19-17	B20-10	B20-15	B21-5	B21-10
Sample Depth (feet bgs)[1]		9	8	8	8	18	10	17	10	15	5	10
Interpreted Lithology of Sampled Unit		Qvr	Qvr	Qvr	Qvr	Qvr	Qvr	Qvr	Qvr	Qvr	Fill	Qvr
Analyte (by constituent group)	MTCA Soil Cleanup Levels for Unrestricted Land Use[3]											
Carcinogenic PAHs												
Benz(a)anthracene	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.1	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(j,k)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAHs TEQ[4]	0.1	--	--	--	--	--	--	--	--	--	--	--
Polychlorinated Biphenyls												
Aroclor 1016	5.6	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	0.5	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	0.5	--	--	--	--	--	--	--	--	--	--	--
Volatile Organic Compounds												
1,1,1,2-Tetrachloroethane	38	--	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	2	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	5	--	--	--	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	18	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	180	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	4000	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloropropene	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3-Trichlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3-Trichloropropane	0.0063	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	34	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	1.3	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane (EDB)	0.005	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	7200	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane (EDC)	11	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	27	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichloropropane	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	190	--	--	--	--	--	--	--	--	--	--	--
2,2-Dichloropropane	--	--	--	--	--	--	--	--	--	--	--	--
2-Chloroethyl Vinyl Ether	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorotoluene	1600	--	--	--	--	--	--	--	--	--	--	--

Table 5. Subsurface Soil Data

Project No. 210577, 2200 Cooper Point Road NW, Olympia, Washington

	Sample Location	B15	B16	B17	B18	B18	B19	B19	B20	B20	B21	B21
	Sample Date	06/24/2021	06/24/2021	06/24/2021	06/25/2021	06/25/2021	06/25/2021	06/25/2021	06/25/2021	06/25/2021	06/25/2021	06/25/2021
	Sample Identification	B15-9	B16-8	B17-8	B18-8	B18-18	B19-10	B19-17	B20-10	B20-15	B21-5	B21-10
	Sample Depth (feet bgs)[1]	9	8	8	8	18	10	17	10	15	5	10
	Interpreted Lithology of Sampled Unit	Qvr	Qvr	Qvr	Qvr	Qvr	Qvr	Qvr	Qvr	Qvr	Fill	Qvr
Analyte (by constituent group)	MTCA Soil Cleanup Levels for Unrestricted Land Use[3]											
4-Chlorotoluene	--	--	--	--	--	--	--	--	--	--	--	--
Bromobenzene	640	--	--	--	--	--	--	--	--	--	--	--
Bromochloromethane	--	--	--	--	--	--	--	--	--	--	--	--
Bromodichloromethane	16	--	--	--	--	--	--	--	--	--	--	--
Bromoform	130	--	--	--	--	--	--	--	--	--	--	--
Bromomethane	110	--	--	--	--	--	--	--	--	--	--	--
Carbon Tetrachloride	14	--	--	--	--	--	--	--	--	--	--	--
Chlorobenzene	1600	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	32	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	--	--	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene (cDCE)	160	--	--	--	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	12	--	--	--	--	--	--	--	--	--	--	--
Dibromomethane	800	--	--	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	16000	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylenes	16000	--	--	--	--	--	--	--	--	--	--	--
Methyl tert-butyl ether (MTBE)	0.1	--	--	--	--	--	--	--	--	--	--	--
Methylene Chloride	0.02	--	--	--	--	--	--	--	--	--	--	--
Methyliodide	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	16000	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene (PCE)	0.05	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	1600	--	--	--	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	--	--	--	--	--	--	--	--	--	--	--	--
Trichloroethene (TCE)	0.03	--	--	--	--	--	--	--	--	--	--	--
Trichlorofluoromethane	24000	--	--	--	--	--	--	--	--	--	--	--
Vinyl Chloride	0.67	--	--	--	--	--	--	--	--	--	--	--

Notes

All results in milligrams per kilogram

Results in **bold** indicate concentrations of the analyte detected above the reporting limit (RL)

Blue shaded cells indicate concentrations of the analyte detected above the MTCA cleanup level

Qt/Qvr - native glacial deposits consisting of either Quaternary glacial till (Qt) or Quaternary recessional outwash (Qvr)

unk - indicates information not available to determine lithologic unit

ND - individual compounds not detected above the laboratory RL so a total concentration is not calculated

[1]Depth of sample collected in feet below ground surface (bgs)

[2]Sample identifications that include an "A" indicate a field duplicate of the primary sample of the same name without an "A"

[3]Washington State Model Toxics Control Act (MTCA) Method A or B Soil Cleanup Levels for Unrestricted Land Uses (WAC 173-340)

[4]Total carcinogenic polycyclic aromatic hydrocarbon (cPAH) toxicity equivalent concentration (TEQ) calcualted per WAC 173-340-708(8) using 1/2 the RL for non-detect (ND) results.

U - Analyte not detected at or above the RL shown

"--" - indicates data not available

Table 6. Reconnaissance Groundwater Data

Project No. 210577, 2200 Cooper Point Road NW, Olympia, Washington

	Sample Location	B12	B13	B14	B15	B16	B17	B19	B21
	Sample Date	06/24/2021	06/24/2021	06/24/2021	06/24/2021	06/24/2021	06/24/2021	06/24/2021	06/24/2021
	Sample Identification	B12-W	B13-W	B14-W	B15-W	B16-W	B17-W	B19-W	B21-W
Analyte (by constituent group)	**MTCA Cleanup Levels for Ground Water[1]**								
Total Petroleum Hydrocarbons									
Gasoline-Range Organics	800	--	--	--	--	--	--	--	--
Diesel-Range Organics	500	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
Motor Oil-Range Organics	500	400 U	400 U	400 U	400 U	400 U	400 U	400 U	400 U
TPH-D+O (ND = 1/2 RL)	500	ND	ND	ND	ND	ND	ND	ND	ND
Metals									
Arsenic, dissolved	8	**9.99**	1 U	1 U	**6.24**	**2.66**	1 U	--	--
Arsenic, total	8	**48.2**	**4.04**	**10.6**	**7.32**	**11.9**	**15.9**	**1.71**	**26.5**
Iron, dissolved	11000	**109**	100 U	100 U	**409**	100 U	**102**	--	--
Iron, total	11000	**321000**	**14900**	**61100**	**3680**	**41400**	**73100**	--	--
Manganese, dissolved	750	**7430**	**199**	**1790**	**9200**	**2600**	**75.6**	--	--
Manganese, total	750	**36100**	**491**	**12600**	**9150**	**4460**	**5930**	**6690**	**5390**

Notes

All results in micrograms per liter.

Results in **bold** indicate concentrations of the analyte detected above the reporting limit (RL).

Blue shaded cells indicate concentrations of the analyte detected above the MTCA cleanup level.

ND - individual compounds not detected above the laboratory reporting limit (RL) so a total concentration is not calculated.

[1]Washington State Model Toxics Control Act (MTCA) Method A or B Cleanup Levels forGroundwater (WAC 173-340)

U - Analyte not detected at or above the RL shown.

"--" - indicates data not available

Table 7. Groundwater Data from Monitoring Wells

Project No. 210577, 2200 Cooper Point Road NW, Olympia, Washington

	Sample Location	B1/MW1		B2/MW2		B3/MW3		B4/MW4		B5/MW5		B6/MW6	
	Sample Date	11/12/2020	05/06/2021	11/13/2020	05/06/2021	11/14/2020	05/06/2021	11/13/2020	05/06/2021	11/12/2020	05/06/2021	11/12/2020	05/06/2021
	Sample Identification	MW1-111220	MW1-050621	MW2-111320	MW2-050621	MW3-111420	MW3-050621	MW4-111320	MW4-050621	MW5-111220	MW5-050621	MW6-111220	MW6-050621
Analyte (by constituent group)	MTCA Cleanup Levels for Ground Water[1]												
Conventionals													
Ammonia as Nitrogen	--	50 U	**56**	**130**	**3600**	**960**	**1300**	50 U	**1100**	**810**	**1600**	**1200**	50 U
Field Parameters													
pH (pH units)	--	--	5.55	--	7.03	--	5.31	--	7.07	--	7.08	--	6.79
Conductivity (microsiemens/centimeter)	--	--	133	--	1180	--	109	--	1341	--	522	--	356
Dissovled Oxygen (milligrams/liter)	--	--	0.07	--	0.21	--	0.10	--	0.17	--	0.14	--	0.64
Oxidation Reduction Potential (milliVolts)	--	--	-77.7	--	-87.8	--	-15.9	--	-89.6	--	-59.6	--	-59.8
Total Petroleum Hydrocarbons													
Gasoline-Range Organics	800	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Diesel-Range Organics	500	220 U	210 U	210 U	**570**	210 U	210 U	220 U	**520**	210 U	210 U	210 U	210 U
Motor Oil-Range Organics	500	220 U	210 U	**540**	**1600**	**260**	**530**	**310**	**1600**	**270**	**510**	**230**	**490**
TPH D+O (ND=1/2 RL)	500	ND	ND	**645**	**2170**	**365**	**635**	**420**	**2120**	**375**	**615**	**335**	**595**
Benzene, Toluene, Ethylbenzene, and Xylenes													
Benzene	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	1000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	1000	1 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U	1.0 U
Metals													
Arsenic, dissolved	8	3.0 U	3.0 U	**7.4**	**12**	3.0 U	3.0 U	3.0 U	**11**	**42**	**11**	**15**	3.0 U
Arsenic, total	8	3.3 U	3.3 U	**8.2**	**10**	3.3 U	3.3 U	3.3 U	**11**	**73**	**13**	**18**	3.3 U
Barium, dissolved	3200	25 U	25 U	**38**	25 U	25 U	25 U	**52**	**59**	**26**	**170**	25 U	25 U
Barium, total	3200	**30**	28 U	**55**	28 U	28 U	28 U	**90**	**68**	**50**	**200**	**33**	28 U
Cadmium, dissolved	5	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	5.0 U
Cadmium, total	5	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U
Chromium, dissolved	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chromium, total	50	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Copper, dissolved	640	--	10 U	--	10 U	--	10 U	--	10 U	--	10 U	--	10 U
Copper, total	640	--	11 U	--	11 U	--	11 U	--	11 U	--	11 U	--	11 U
Iron, dissolved	11000	56 U	--	**2100**	--	**9400**	--	**260**	--	**42000**	--	**16000**	--
Iron, total	11000	**2700**	**270**	**4600**	**48000**	**13000**	**15000**	**7300**	**19000**	**58000**	**41000**	**18000**	**770**
Lead, dissolved	15	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Lead, total	15	1.1 U	1.1 U	1.1 U	1.1 U	**1.2**	1.1 U	**5.9**	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Manganese, dissolved	750	**560**	--	**18000**	--	**1000**	--	**6200**	--	**13000**	--	**4500**	--
Manganese, total	750	**630**	**130**	**17000**	**15000**	**1000**	**1000**	**6200**	**28000**	**11000**	**1900**	**4500**	**320**
Mercury, dissolved	2	0.50 U	0.5 U	0.50 U	0.5 U	0.50 U	0.5 U	0.50 U	0.5 U	0.50 U	0.5 U	0.50 U	0.5 U
Mercury, total	2	0.50 U	0.5 U	0.50 U	0.5 U	0.50 U	0.5 U	0.50 U	0.5 U	0.50 U	0.5 U	0.50 U	0.5 U
Selenium, dissolved	80	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Selenium, total	80	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U
Silver, dissolved	80	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Silver, total	80	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U

Table 7. Groundwater Data from Monitoring Wells

Project No. 210577, 2200 Cooper Point Road NW, Olympia, Washington

	Sample Location	B1/MW1		B2/MW2		B3/MW3		B4/MW4		B5/MW5		B6/MW6	
	Sample Date	11/12/2020	05/06/2021	11/13/2020	05/06/2021	11/14/2020	05/06/2021	11/13/2020	05/06/2021	11/12/2020	05/06/2021	11/12/2020	05/06/2021
	Sample Identification	MW1-111220	MW1-050621	MW2-111320	MW2-050621	MW3-111420	MW3-050621	MW4-111320	MW4-050621	MW5-111220	MW5-050621	MW6-111220	MW6-050621
Analyte (by constituent group)	**MTCA Cleanup Levels for Ground Water[1]**												
Other SVOCs													
Benzoic acid	64000	26 U	--	27 U	--	26 U	--	27 U	--	27 U	--	26 U	--
Hexachlorobutadiene	0.56	--	--	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--
Pentachlorophenol	0.22	--	--	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrcarbons (PAHs)													
1-Methylnaphthalene	1.5	--	--	0.099 U	--	0.097 U	--	0.10 U	--	0.10 U	--	0.097 U	--
2-Methylnaphthalene	32	--	--	0.099 U	--	0.097 U	--	0.10 U	--	0.10 U	--	0.097 U	--
Acenaphthene	960	--	--	0.099 U	--	0.097 U	--	0.10 U	--	0.10 U	--	0.097 U	--
Acenaphthylene	--	--	--	0.099 U	--	0.097 U	--	0.10 U	--	0.10 U	--	0.097 U	--
Anthracene	4800	--	--	0.099 U	--	0.097 U	--	0.10 U	--	0.10 U	--	0.097 U	--
Benzo(g,h,i)perylene	--	--	--	0.0099 U	--	0.0097 U	--	0.010 U	--	0.010 U	--	0.0097 U	--
Fluoranthene	640	--	--	0.099 U	--	0.097 U	--	0.10 U	--	0.10 U	--	0.097 U	--
Fluorene	640	--	--	0.099 U	--	0.097 U	--	0.10 U	--	0.10 U	--	0.097 U	--
Naphthalene	160	--	--	0.099 U	--	**0.12**	--	0.10 U	--	0.10 U	--	0.097 U	--
Phenanthrene	--	--	--	0.099 U	--	0.097 U	--	0.10 U	--	0.10 U	--	0.097 U	--
Pyrene	480	--	--	0.099 U	--	0.097 U	--	0.10 U	--	0.10 U	--	0.097 U	--
Carcinogenic PAHs													
Benz(a)anthracene	--	--	--	0.0099 U	--	0.0097 U	--	0.010 U	--	0.010 U	--	0.0097 U	--
Benzo(a)pyrene	0.1	--	--	0.0099 U	--	0.0097 U	--	0.010 U	--	0.010 U	--	0.0097 U	--
Benzo(b)fluoranthene	--	--	--	0.0099 U	--	0.0097 U	--	0.010 U	--	0.010 U	--	0.0097 U	--
Benzo(j,k)fluoranthene	--	--	--	0.0099 U	--	0.0097 U	--	0.010 U	--	--	--	0.0097 U	--
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--	0.010 U	--	--	--
Chrysene	--	--	--	0.0099 U	--	0.0097 U	--	0.010 U	--	0.010 U	--	0.0097 U	--
Dibenzo(a,h)anthracene	--	--	--	0.0099 U	--	0.0097 U	--	0.010 U	--	0.010 U	--	0.0097 U	--
Indeno(1,2,3-cd)pyrene	--	--	--	0.0099 U	--	0.0097 U	--	0.010 U	--	0.010 U	--	0.0097 U	--
Total cPAHs TEQ[2]	0.1	--	--	ND	--	ND	--	ND	--	ND	--	ND	--
PCBAro													
Aroclor 1016	0.56	--	--	0.050 U	--	0.049 U	--	0.050 U	--	0.050 U	--	0.048 U	--
Aroclor 1221	--	--	--	0.050 U	--	0.049 U	--	0.050 U	--	0.050 U	--	0.048 U	--
Aroclor 1232	--	--	--	0.050 U	--	0.049 U	--	0.050 U	--	0.050 U	--	0.048 U	--
Aroclor 1242	--	--	--	0.050 U	--	0.049 U	--	0.050 U	--	0.050 U	--	0.048 U	--
Aroclor 1248	--	--	--	0.050 U	--	0.049 U	--	0.050 U	--	0.050 U	--	0.048 U	--
Aroclor 1254	0.022	--	--	0.050 U	--	0.049 U	--	0.050 U	--	0.050 U	--	0.048 U	--
Aroclor 1260	0.022	--	--	0.050 U	--	0.049 U	--	0.050 U	--	0.050 U	--	0.048 U	--
Total PCBs (Sum of Aroclors)	0.1	--	0.49 U	--	0.49 U	--	0.48 U	--	0.51 U	--	0.5 U	--	0.49 U
VOCs													
1,1,1,2-Tetrachloroethane	1.7	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
1,1,1-Trichloroethane	200	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--

Table 7. Groundwater Data from Monitoring Wells

Project No. 210577, 2200 Cooper Point Road NW, Olympia, Washington

	Sample Location	B1/MW1		B2/MW2		B3/MW3		B4/MW4		B5/MW5		B6/MW6	
	Sample Date	11/12/2020	05/06/2021	11/13/2020	05/06/2021	11/14/2020	05/06/2021	11/13/2020	05/06/2021	11/12/2020	05/06/2021	11/12/2020	05/06/2021
	Sample Identification	MW1-111220	MW1-050621	MW2-111320	MW2-050621	MW3-111420	MW3-050621	MW4-111320	MW4-050621	MW5-111220	MW5-050621	MW6-111220	MW6-050621
Analyte (by constituent group)	MTCA Cleanup Levels for Ground Water[1]												
1,1,2,2-Tetrachloroethane	0.22	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
1,1,2-Trichloroethane	0.77	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
1,1-Dichloroethane	7.7	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
1,1-Dichloroethene	400	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
1,1-Dichloropropene	--	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
1,2,3-Trichlorobenzene	--	--	--	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--
1,2,3-Trichloropropane	0.00038	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
1,2,4-Trichlorobenzene	1.5	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
1,2-Dibromo-3-chloropropane	0.055	--	--	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--
1,2-Dibromoethane (EDB)	0.01	--	0.2 U	0.20 U	0.2 U	0.20 U	0.2 U	0.20 U	0.2 U	0.20 U	0.2 U	0.20 U	0.2 U
1,2-Dichlorobenzene	720	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
1,2-Dichloroethane (EDC)	5	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
1,2-Dichloropropane	1.2	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
1,3-Dichlorobenzene	--	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
1,3-Dichloropropane	--	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
1,4-Dichlorobenzene	8.1	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
2,2-Dichloropropane	--	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
2-Chloroethyl Vinyl Ether	--	--	--	30 U	--	30 U	--	30 U	--	30 U	--	30 U	--
2-Chlorotoluene	160	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
4-Chlorotoluene	--	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
Bromobenzene	64	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
Bromochloromethane	--	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
Bromodichloromethane	0.71	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
Bromoform	5.5	--	--	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--
Bromomethane	11	--	--	2.0 U	--	2.0 U	--	2.0 U	--	2.0 U	--	2.0 U	--
Carbon Tetrachloride	0.63	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
Chlorobenzene	160	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
Chloroethane	--	--	--	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--
Chloroform	1.4	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
Chloromethane	--	--	--	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--
cis-1,2-Dichloroethene (DCE)	16	--	0.2 U	0.20 U	0.2 U	0.20 U	--	0.20 U	0.2 U	0.20 U	0.2 U	0.20 U	0.2 U
cis-1,3-Dichloropropene	--	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
Dibromochloromethane	0.52	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
Dibromomethane	80	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
Dichlorodifluoromethane	1600	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
m,p-Xylenes	1600	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--
Methyl tert-butyl ether (MTBE)	20	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
Methylene Chloride	5	--	--	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--
Methyliodide	--	--	--	5.0 U	--	5.0 U	--	5.0 U	--	5.0 U	--	5.0 U	--

Table 7. Groundwater Data from Monitoring Wells

Project No. 210577, 2200 Cooper Point Road NW, Olympia, Washington

	Sample Location	B1/MW1		B2/MW2		B3/MW3		B4/MW4		B5/MW5		B6/MW6	
	Sample Date	11/12/2020	05/06/2021	11/13/2020	05/06/2021	11/14/2020	05/06/2021	11/13/2020	05/06/2021	11/12/2020	05/06/2021	11/12/2020	05/06/2021
	Sample Identification	MW1-111220	MW1-050621	MW2-111320	MW2-050621	MW3-111420	MW3-050621	MW4-111320	MW4-050621	MW5-111220	MW5-050621	MW6-111220	MW6-050621
Analyte (by constituent group)	**MTCA Cleanup Levels for Ground Water[1]**												
o-Xylene	1600	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--
Tetrachloroethene (PCE)	5	--	0.2 U	0.20 U	0.2 U	0.20 U	--	0.20 U	0.2 U	0.20 U	0.2 U	0.20 U	0.2 U
trans-1,2-Dichloroethene	160	--	0.2 U	0.20 U	0.2 U	0.20 U	--	0.20 U	0.2 U	0.20 U	0.2 U	0.20 U	0.2 U
trans-1,3-Dichloropropene	--	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
Trichloroethene (TCE)	5	--	0.2 U	0.20 U	0.2 U	0.20 U	--	0.20 U	0.2 U	0.20 U	0.2 U	0.20 U	0.2 U
Trichlorofluoromethane	2400	--	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--	0.20 U	--
Vinyl Chloride	0.2	--	0.2 U	0.20 U	0.2 U	0.20 U	--	0.20 U	0.2 U	0.20 U	0.2 U	0.20 U	0.2 U

Notes:

All results in micrograms per liter, unless indicated otherwise.

Results in **bold** indicate concentrations of the analyte detected above the reporting limit (RL).

Results in *italics* indicate data that may not be representative of groundwater quality.

Blue shaded cells indicate concentrations of the analyte detected above the MTCA cleanup level.

ND - individual compounds not detected above the laboratory RL so a total concentration is not calculated.

[1]Washington State Model Toxics Control Act (MTCA) Method A or B Cleanup Levels for Groundwater (WAC 173-340)

[2]Total carcinogenic polycyclic aromatic hydrocarbon (cPAH) toxicity equivalent concentration (TEQ) calcualted per WAC 173-340-708(8) using 1/2 the RL for non-detect (ND) results.

U - Analyte not detected at or above the RL shown.

"--" - indicates data not available

Table 7. Groundwater Data from Monitoring Wells

Project No. 210577, 2200 Cooper Point Road NW, Olympia, Washington

Sample Location		B7/MW7		B8/MW8		B9/MW9	B11/MW11	
Sample Date		11/12/2020	05/06/2021	11/14/2020	05/06/2021	05/06/2021	11/14/2020	05/06/2021
Sample Identification		MW7-111220	MW7-050621	MW8-111420	MW8-050621	MW9-050621	MW11-111420	MW11-050621
Analyte (by constituent group)	**MTCA Cleanup Levels for Ground Water[1]**							
Conventionals								
Ammonia as Nitrogen	--	**3800**	**3500**	**560**	50 U	***3500***	50 U	50 U
Field Parameters								
pH (pH units)	--	**--**	6.77	**--**	6.40	*5.25*	**--**	5.13
Conductivity (microsiemens/centimeter)	--	**--**	638	**--**	113	*324*	**--**	55.3
Dissovled Oxygen (milligrams/liter)	--	**--**	0.39	**--**	0.13	*0.25*	**--**	7.02
Oxidation Reduction Potential (milliVolts)	--	**--**	-36.1	**--**	-72.1	*-52.1*	**--**	155.2
Total Petroleum Hydrocarbons								
Gasoline-Range Organics	800	100 U	100 U	100 U	100 U	*100 U*	100 U	100 U
Diesel-Range Organics	500	**380**	**260**	210 U	200 U	***390***	210 U	210 U
Motor Oil-Range Organics	500	**630**	**240**	210 U	200 U	***440***	210 U	210 U
TPH D+O (ND=1/2 RL)	500	**1010**	**500**	ND	ND	***830***	ND	ND
Benzene, Toluene, Ethylbenzene, and Xylenes								
Benzene	5	1.0 U	1.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U
Toluene	1000	1.0 U	1.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U
Ethylbenzene	700	1.0 U	1.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U
Total Xylenes	1000	1 U	1.0 U	1 U	1.0 U	*1.0 U*	1 U	1.0 U
Metals								
Arsenic, dissolved	8	**21**	**5.1**	3.0 U	3.0 U	***3.8***	3.0 U	3.0 U
Arsenic, total	8	**36**	**5.2**	3.3 U	3.3 U	***4.1***	3.3 U	3.3 U
Barium, dissolved	3200	**40**	25 U	25 U	25 U	***41***	25 U	25 U
Barium, total	3200	**62**	28 U	**37**	28 U	***55***	**32**	28 U
Cadmium, dissolved	5	4.0 U	4.0 U	4.0 U	4.0 U	*4.0 U*	4.0 U	4.0 U
Cadmium, total	5	4.4 U	4.4 U	4.4 U	4.4 U	*4.4 U*	4.4 U	4.4 U
Chromium, dissolved	50	10 U	10 U	10 U	10 U	*10 U*	10 U	10 U
Chromium, total	50	11 U	11 U	11 U	11 U	*11 U*	11 U	11 U
Copper, dissolved	640	--	10 U	--	10 U	*10 U*	10 U	10 U
Copper, total	640	--	11 U	--	11 U	*11 U*	11 U	11 U
Iron, dissolved	11000	**37000**	--	**560**	--	--	**95**	--
Iron, total	11000	**47000**	**53000**	**8600**	**5200**	***88000***	**3900**	**130**
Lead, dissolved	15	1.0 U	1.0 U	1.0 U	1.0 U	*1.0 U*	1.0 U	1.0 U
Lead, total	15	1.1 U	1.1 U	1.1 U	1.1 U	*1.1 U*	1.1 U	1.1 U
Manganese, dissolved	750	**7600**	--	**2500**	--	--	11 U	--
Manganese, total	750	**7100**	**4200**	**2500**	**660**	***7300***	**110**	10 U
Mercury, dissolved	2	0.50 U	0.5 U	0.50 U	0.5 U	*0.5 U*	0.50 U	0.5 U
Mercury, total	2	0.50 U	0.5 U	0.50 U	0.5 U	*0.5 U*	0.50 U	0.5 U
Selenium, dissolved	80	5.0 U	5.0 U	5.0 U	5.0 U	*5.0 U*	5.0 U	5.0 U
Selenium, total	80	5.6 U	5.6 U	5.6 U	5.6 U	*5.6 U*	5.6 U	5.6 U
Silver, dissolved	80	10 U	10 U	10 U	10 U	*10 U*	10 U	10 U
Silver, total	80	11 U	11 U	11 U	11 U	*11 U*	11 U	11 U

Table 7. Groundwater Data from Monitoring Wells

Project No. 210577, 2200 Cooper Point Road NW, Olympia, Washington

Sample Location		B7/MW7		B8/MW8		B9/MW9	B11/MW11	
Sample Date		11/12/2020	05/06/2021	11/14/2020	05/06/2021	05/06/2021	11/14/2020	05/06/2021
Sample Identification		MW7-111220	MW7-050621	MW8-111420	MW8-050621	MW9-050621	MW11-111420	MW11-050621
Analyte (by constituent group)	**MTCA Cleanup Levels for Ground Water[1]**							
Other SVOCs								
Benzoic acid	64000	26 U	--	27 U	--	--	27 U	--
Hexachlorobutadiene	0.56	1.0 U	--	--	--	--	--	--
Pentachlorophenol	0.22	--	--	--	--	--	5.0 U	--
Polycyclic Aromatic Hydrcarbons (PAHs)								
1-Methylnaphthalene	1.5	0.098 U	--	0.10 U	--	--	0.10 U	--
2-Methylnaphthalene	32	0.098 U	--	0.10 U	--	--	0.10 U	--
Acenaphthene	960	**0.11**	--	0.10 U	--	--	0.10 U	--
Acenaphthylene	--	0.098 U	--	0.10 U	--	--	0.10 U	--
Anthracene	4800	0.098 U	--	0.10 U	--	--	0.10 U	--
Benzo(g,h,i)perylene	--	0.0098 U	--	0.010 U	--	--	0.010 U	--
Fluoranthene	640	0.098 U	--	0.10 U	--	--	0.10 U	--
Fluorene	640	0.098 U	--	0.10 U	--	--	0.10 U	--
Naphthalene	160	0.098 U	--	0.10 U	--	--	0.10 U	--
Phenanthrene	--	0.098 U	--	0.10 U	--	--	0.10 U	--
Pyrene	480	0.098 U	--	0.10 U	--	--	0.10 U	--
Carcinogenic PAHs								
Benz(a)anthracene	--	0.0098 U	--	0.010 U	--	--	0.010 U	--
Benzo(a)pyrene	0.1	0.0098 U	--	0.010 U	--	--	0.010 U	--
Benzo(b)fluoranthene	--	0.0098 U	--	0.010 U	--	--	0.010 U	--
Benzo(j,k)fluoranthene	--	0.0098 U	--	0.010 U	--	--	0.010 U	--
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--
Chrysene	--	0.0098 U	--	0.010 U	--	--	0.010 U	--
Dibenzo(a,h)anthracene	--	0.0098 U	--	0.010 U	--	--	0.010 U	--
Indeno(1,2,3-cd)pyrene	--	0.0098 U	--	0.010 U	--	--	0.010 U	--
Total cPAHs TEQ[2]	0.1	ND	--	ND	--	--	ND	--
PCBAro								
Aroclor 1016	0.56	0.049 U	--	--	--	--	--	--
Aroclor 1221	--	0.049 U	--	--	--	--	--	--
Aroclor 1232	--	0.049 U	--	--	--	--	--	--
Aroclor 1242	--	0.049 U	--	--	--	--	--	--
Aroclor 1248	--	0.049 U	--	--	--	--	--	--
Aroclor 1254	0.022	0.049 U	--	--	--	--	--	--
Aroclor 1260	0.022	0.049 U	--	--	--	--	--	--
Total PCBs (Sum of Aroclors)	0.1	--	0.49 U	--	0.48 U	--	--	0.48 U
VOCs								
1,1,1,2-Tetrachloroethane	1.7	0.20 U	--	--	--	--	--	--
1,1,1-Trichloroethane	200	0.20 U	--	--	--	--	--	--

Table 7. Groundwater Data from Monitoring Wells

Project No. 210577, 2200 Cooper Point Road NW, Olympia, Washington

	Sample Location	B7/MW7		B8/MW8		B9/MW9	B11/MW11	
	Sample Date	11/12/2020	05/06/2021	11/14/2020	05/06/2021	05/06/2021	11/14/2020	05/06/2021
	Sample Identification	MW7-111220	MW7-050621	MW8-111420	MW8-050621	MW9-050621	MW11-111420	MW11-050621
Analyte (by constituent group)	MTCA Cleanup Levels for Ground Water[1]							
1,1,2,2-Tetrachloroethane	0.22	0.20 U	--	--	--	--	--	--
1,1,2-Trichloroethane	0.77	0.20 U	--	--	--	--	--	--
1,1-Dichloroethane	7.7	0.20 U	--	--	--	--	--	--
1,1-Dichloroethene	400	0.20 U	--	--	--	--	--	--
1,1-Dichloropropene	--	0.20 U	--	--	--	--	--	--
1,2,3-Trichlorobenzene	--	1.0 U	--	--	--	--	--	--
1,2,3-Trichloropropane	0.00038	0.20 U	--	--	--	--	--	--
1,2,4-Trichlorobenzene	1.5	0.20 U	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	0.055	1.0 U	--	--	--	--	--	--
1,2-Dibromoethane (EDB)	0.01	0.20 U	0.2 U	--	0.2 U	*0.2 U*	--	0.2 U
1,2-Dichlorobenzene	720	0.20 U	--	--	--	--	--	--
1,2-Dichloroethane (EDC)	5	0.20 U	--	--	--	--	--	--
1,2-Dichloropropane	1.2	0.20 U	--	--	--	--	--	--
1,3-Dichlorobenzene	--	0.20 U	--	--	--	--	--	--
1,3-Dichloropropane	--	0.20 U	--	--	--	--	--	--
1,4-Dichlorobenzene	8.1	0.20 U	--	--	--	--	--	--
2,2-Dichloropropane	--	0.20 U	--	--	--	--	--	--
2-Chloroethyl Vinyl Ether	--	30 U	--	--	--	--	--	--
2-Chlorotoluene	160	0.20 U	--	--	--	--	--	--
4-Chlorotoluene	--	0.20 U	--	--	--	--	--	--
Bromobenzene	64	0.20 U	--	--	--	--	--	--
Bromochloromethane	--	0.20 U	--	--	--	--	--	--
Bromodichloromethane	0.71	0.20 U	--	--	--	--	--	--
Bromoform	5.5	1.0 U	--	--	--	--	--	--
Bromomethane	11	2.0 U	--	--	--	--	--	--
Carbon Tetrachloride	0.63	0.20 U	--	--	--	--	--	--
Chlorobenzene	160	0.20 U	--	--	--	--	--	--
Chloroethane	--	1.0 U	--	--	--	--	--	--
Chloroform	1.4	0.20 U	--	--	--	--	--	--
Chloromethane	--	1.0 U	--	--	--	--	--	--
cis-1,2-Dichloroethene (DCE)	16	0.20 U	0.2 U	--	0.2 U	*0.2 U*	--	0.2 U
cis-1,3-Dichloropropene	--	0.20 U	--	--	--	--	--	--
Dibromochloromethane	0.52	0.20 U	--	--	--	--	--	--
Dibromomethane	80	0.20 U	--	--	--	--	--	--
Dichlorodifluoromethane	1600	0.20 U	--	--	--	--	--	--
m,p-Xylenes	1600	1.0 U	--	1.0 U	--	--	1.0 U	--
Methyl tert-butyl ether (MTBE)	20	0.20 U	--	--	--	--	--	--
Methylene Chloride	5	1.0 U	--	--	--	--	--	--
Methyliodide	--	5.0 U	--	--	--	--	--	--

Table 7. Groundwater Data from Monitoring Wells

Project No. 210577, 2200 Cooper Point Road NW, Olympia, Washington

	Sample Location	B7/MW7		B8/MW8		B9/MW9	B11/MW11	
	Sample Date	11/12/2020	05/06/2021	11/14/2020	05/06/2021	05/06/2021	11/14/2020	05/06/2021
	Sample Identification	MW7-111220	MW7-050621	MW8-111420	MW8-050621	MW9-050621	MW11-111420	MW11-050621
Analyte (by constituent group)	MTCA Cleanup Levels for Ground Water[1]							
o-Xylene	1600	1.0 U	--	1.0 U	--	--	1.0 U	--
Tetrachloroethene (PCE)	5	0.20 U	0.2 U	--	0.2 U	*0.2 U*	--	0.2 U
trans-1,2-Dichloroethene	160	0.20 U	0.2 U	--	0.2 U	*0.2 U*	--	0.2 U
trans-1,3-Dichloropropene	--	0.20 U	--	--	--	--	--	--
Trichloroethene (TCE)	5	0.20 U	0.2 U	--	0.2 U	*0.2 U*	--	0.2 U
Trichlorofluoromethane	2400	0.20 U	--	--	--	--	--	--
Vinyl Chloride	0.2	0.20 U	0.2 U	--	0.2 U	*0.2 U*	--	0.2 U

Notes

All results in micrograms per liter, unless indicated otherwise.

Results in **bold** indicate concentrations of the analyte detected above the reporting limit (RL).

Results in *italics* indicate data that may not be representative of groundwater quality.

Blue shaded cells indicate concentrations of the analyte detected above the MTCA cleanup level.

ND - individual compounds not detected above the laboratory RL so a total concentration is not calculated.

[1]Washington State Model Toxics Control Act (MTCA) Method A or B Cleanup Levels for Groundwater (WAC 173-340)

[2]Total carcinogenic polycyclic aromatic hydrocarbon (cPAH) toxicity equivalent concentration (TEQ) calcualted per WAC 173-340-708(8) using 1/2 the RL for non-detect (ND) results.

U - Analyte not detected at or above the RL shown.

"--" - indicates data not available

Table 8. Groundwater Measurements and Elevation Data

Project No. 210577, 220 Cooper Point Road NW, Olympia, Washington

Well Identification	TOC Elevation (NAVD 88)	Sample Date	Depth to Water (feet below TOC)	Groundwater Elevation (NAVD 88)	Interpreted Lithologic Units
B1/MW1	244.92	11/9/2020	10.90	234.02	Native (0-15') - sand and silt with gravel
		5/6/2021	10.26	234.66	
B2/MW2	244.96	11/9/2020	12.50	232.46	Qvr (0-12' bgs) - sandy silt/clay with cobbles and gravel; Qvr (12-15')
		5/6/2021	11.31	233.65	
B3/MW3	247.8	11/9/2020	8.30	239.50	Fill (0-11') - peat and organic silt and clay with gravel, cobbles and wood fragments; Qt (11-15') - silty/sandy gravel
		5/6/2021	6.76	241.04	
B4/MW4	245.28	11/9/2020	12.30	232.98	Qvr (0-15') - silty sand with gravel, and sand
		5/6/2021	11.23	234.05	
B5/MW5	244.66	11/9/2020	11.40	233.26	Fill (0-5.5') - Gravel, peat (wood) and clay with gravel; Qvr (5.5-15') - sand
		5/6/2021	10.41	234.25	
B6/MW6	243.57	11/9/2020	9.80	233.77	Fill (0-7') - Sandy silt with gravel, cobbles, and asphalt; Qvr (7-15') - sand
		5/6/2021	9.17	234.40	
B7/MW7	244.52	11/9/2020	10.80	233.72	Fill (0-10') - Sandy silt, clay, and gravel, concrete, woody debris; Qvr (10-15') - sand
		5/6/2021	9.92	234.60	
B8/MW8	248.59	11/9/2020	6.50	242.09	Fill (0-6') - silt and sand with gravel, cobbles, woody debris, and concrete; Qvr (6-15') - gravel
		5/6/2021	6.17	242.42	
B9/MW9	253.1	11/9/2020	14.10	239.00	Fill (0-7.5) - silty sand with gravel, woody debris, and concrete; Qt (7.5-15) - silty and silty sand
		5/6/2021	12.85	240.25	
B10/MW10	257.25	11/9/2020	DRY	--	Fill (0-7') - clay, gravel and woody debris; Qt (7-15) - gravel and sand
		5/6/2021	14.83	242.42	
B11/MW11	241.72	11/9/2020	4.40	237.32	Qt (0-15') - silty gravel, clay, and sand
		5/6/2021	3.16	238.56	

Notes

TOC = Top of well casing

-- = Not available

All monitoring wells screened from 5 to 15 feet below ground surface.

Qt = glacial till

Qvr - glacial recessional outwash

Table 9. Soil COPCs and RI Screening Levels

Project No. 210577, 220 Cooper Point Road NW, Olympia, Washington

Analyte	Soil Method A Unrestricted Land Use (Table 740-1) (mg/kg)	Soil Method B Direct Contact Noncancer (Eq. 740-1) (mg/kg)	Soil Method B Direct Contact Cancer (Eq. 740-2) (mg/kg)	Site Soil Screening Level[1]
Petroleum Hydrocarbons				
Diesel-range petroleum hydrocarbons	2000			2000
Oil-range petroleum hydrocarbons	2000			2000
TPH-D+O	2000			2000
Gasoline-range petroleum hydrocarbons, benzene present	30			30
Gasoline-range petroleum hydrocarbons, no benzene present	100			100
Metals				
Arsenic	20	24	0.67	20
Barium		16000		16000
Cadmium	2	80		2
Chromium (total)				--
Chromium (III)	2000	120000		2000
Chromium (VI)	19	240	0.38	19
Copper		3200		3200
Lead	250			250
Manganese		3700		3700
Mercury	2			2
Nickel		1600		1600
Selenium		400		400
Silver		400		400
Polycyclic Aromatic Hydrocarbons (PAHs)				
Acenaphthene		4800		4800
Anthracene		24000		24000
Fluoranthene		3200		3200
Fluorene		3200		3200
Methyl naphthalene;1-		5600	34	34
Methyl naphthalene;2-		320		320
Naphthalene	5	1600		5
Pyrene		2400		2400
Carcinogenic PAHs (cPAHs)				
Benzo(a)anthracene				
Benzo(a)pyrene	0.10	24	0.19	0.1
Benzo(b)fluoranthene				
Benzo(k)fluoranthene				
Chrysene				
Dibenz(a,h)anthracene				
Indeno(1,2,3-cd)pyrene				
Total cPAH TEQ	0.10	24	0.19	0.1
Polychlorinated Biphenyls (PCBs)				
Aroclor 1016		5.6	14	5.6
Aroclor 1254		1.6	0.50	0.5
Aroclor 1260			0.50	0.5
Total PCBs	1.0		0.50	1.0
Pentachlorophenol				
Pentachlorophenol		400	2.5	2.5
Volatile Organic Compounds				
Acetone		72000		72000
Benzene	0.03	320	18	0.03
Bromobenzene		640		640
Bromodichloromethane		1600	16	16
Bromoform		1600	130	130
Bromomethane		110		110
Carbon tetrachloride		320	14	14
Chlorobenzene		1600		1600
Chloroform		800	32	32
Chloromethane				
Chlorotoluene;o-		1600		1600
Chlorotoluene;p-		1600		1600
Dibromochloromethane		1600	12	12
Dichlorobenzene;1,2-		7200		7200
Dichlorobenzene;1,3-				0
Dichlorobenzene;1,4-		5600	190	190
Dichlorodifluoromethane		16000		16000
Dichloroethane;1,2- (EDC)		480	11	11
Dichloroethylene;1,2-,cis		160		160
Dichloroethylene;1,2-,trans		1600		1600
Dichloropropane;1,2-		3200	27	27
Dichloropropane;1,3-		1600		1600
Dichloropropene;1,3-		2400	10	10
Ethyl chloride				
Ethylbenzene	6	8000		6
Ethylene dibromide (EDB)	0.005	720	0.50	0.005
Hexachlorobutadiene		80	13	13
Hexanone;2-		400		400
Methyl ethyl ketone		48000		48000
Methyl isobutyl ketone		6400		6400
Methyl tert-butyl ether (MTBE)	0.10		560	0.10
Methylene bromide		800		800
Methylene chloride	0.02	480	94	0.02
Propylbenzene;n-		8000		8000
sec-butylbenzene		8000		8000
Styrene		16000		16000
tert-butylbenzene		8000		8000
Tetrachloroethane;1,1,1,2-		2400	38	38
Tetrachloroethane;1,1,2,2-		1600	5	5
Tetrachloroethylene	0.05	480	480	0.05

Table 9. Soil COPCs and RI Screening Levels

Project No. 210577, 220 Cooper Point Road NW, Olympia, Washington

Analyte	Soil Method A Unrestricted Land Use (Table 740-1) (mg/kg)	Soil Method B Direct Contact Noncancer (Eq. 740-1) (mg/kg)	Soil Method B Direct Contact Cancer (Eq. 740-2) (mg/kg)	Site Soil Screening Level[1]
Toluene	7	6400		7
Trichlorobenzene;1,2,3-		64		64
Trichlorobenzene;1,2,4-		800	34	34
Trichloroethane;1,1,1-	2	160000		2
Trichloroethane;1,1,2-		320	18	18
Trichloroethylene	0.03	40	12	0.03
Trichlorofluoromethane		24000		24000
Trichloropropane;1,2,3-		320	0.0063	0.0063
Trimethylbenzene;1,2,4-		800		800
Trimethylbenzene;1,3,5-		800		800
Vinyl Chloride		240	0.67	0.67
xylene;m-		16000		16000
xylene;o-		16000		16000
xylene;p-		16000		16000
xylenes	9	16000		9

[1]Site Soil Screening Levels for the remedial investigation (RI) are the default human health cleanup levels established by the Washington State Department of Ecology under the Model Toxics Control Act cleanup regulation (Chapter 173-340 of the Washington Administrative Code [WAC 173-340]). The Site Soil Screening Level is the Method A soil cleanup level for unrestricted land use, where established, or the lowest of the standard Method B formula values, from Ecology's CLARC data tables, updated July 2022.

Table 10. Groundwater COPCs and RI Screening Levels

Project No. 210577, 220 Cooper Point Road NW, Olympia, Washington

Analyte	Ground Water Method A (Table 720-1) (µg/L)	Ground Water Method B Noncancer (Eq. 720-1) (µg/L)	Ground Water Method B Cancer (Eq. 720-2) (µg/L)	Natural Background (µg/L)	Site Groundwater Screening Level
Petroleum Hydrocarbons					
Diesel-range petroleum hydrocarbons	500				500
Oil-range petroleum hydrocarbons	500				500
TPH-D+O	500				500
Gasoline-range petroleum hydrocarbons, benzene present	800				800
Gasoline-range petroleum hydrocarbons, no benzene present	1000				1000
Metals					
Arsenic	5	4.8	0.058	8	8
Barium		3200			3200
Cadmium	5	8			5
Chromium (total)	50				50
Chromium (III)		24000			24000
Chromium (VI)		48	0.046		0.046
Copper		640			640
Iron		11000			11000
Lead	15				15
Manganese		750			750
Mercury	2				2
Nickel		320			320
Selenium		80			80
Silver		80			80
Polycyclic Aromatic Hydrocarbons (PAHs)					
Acenaphthene		480			480
Anthracene		2400			2400
Fluoranthene		640			640
Fluorene		320			320
Methyl naphthalene;1-		560	1.5		1.5
Methyl naphthalene;2-		32			32
Naphthalene	160	160			160
Pyrene		240			240
Carcinogenic PAHs (cPAHs)					
Benzo(a)anthracene					
Benzo(a)pyrene	0.10	4.80	0.02		0.1
Benzo(b)fluoranthene					
Benzo(k)fluoranthene					
Chrysene					
Dibenz(a,h)anthracene					
Indeno(1,2,3-cd)pyrene					
Total cPAH TEQ	0.10	4.80	0.02		0.1
Pentachlorophenol					
Pentachlorophenol		80	0.22		0.22
Polychlorinated Biphenyls (PCBs)					
Aroclor 1016		0.56	0.63		0.56
Aroclor 1254		0.16	0.022		0.022
Aroclor 1260			0.022		0.022
Total PCBs	0.10		0.02		0.10
Volatile Organic Compounds					
Acetone		7200			7200
Benzene	5	32	0.80		5
Bromobenzene		64			64
Bromodichloromethane		160	0.71		0.71
Bromoform		160	5.50		5.5
Bromomethane		11			11
Carbon tetrachloride		32	0.63		0.63
Chlorobenzene		160			160
Chloroform		80	1.40		1.4
Chloromethane					0
Chlorotoluene;o-		160			160
Chlorotoluene;p-		160			160
Dibromochloromethane		160	0.52		0.52
Dichlorobenzene;1,2-		720			720
Dichlorobenzene;1,3-					0
Dichlorobenzene;1,4-		560	8.10		8.1
Dichlorodifluoromethane		1600			1600
Dichloroethane;1,2- (EDC)	5	48	0.48		5
Dichloroethylene;1,2-,cis		16			16
Dichloroethylene;1,2-,trans		160			160
Dichloropropane;1,2-		320	1.2		1.2
Dichloropropane;1,3-		160			160
Dichloropropene;1,3-		240	0.44		0.44
Ethyl chloride					
Ethylbenzene	700	800			700
Ethylene dibromide (EDB)	0.01	72	0.02		0.01
Hexachlorobutadiene		8	0.56		0.56
Hexanone;2-		40			40
Methyl ethyl ketone		4800			4800
Methyl isobutyl ketone		640			640
Methyl tert-butyl ether (MTBE)	20		24		20
Methylene bromide		80			80
Methylene chloride	5	48	5.8		5
Propylbenzene;n-		800			800
sec-butylbenzene		800			800
Styrene		1600			1600
tert-butylbenzene		800			800
Tetrachloroethane;1,1,1,2-		240	1.7		1.7
Tetrachloroethane;1,1,2,2-		160	0.22		0.22
Tetrachloroethylene	5	48	21		5
Toluene	1000	640			1000
Trichlorobenzene;1,2,3-		6.4			6.4
Trichlorobenzene;1,2,4-		80	1.5		1.5
Trichloroethane;1,1,1-	200	16000			200
Trichloroethane;1,1,2-		32	0.77		0.77
Trichloroethylene	5	4	0.54		5
Trichlorofluoromethane		2400			2400
Trichloropropane;1,2,3-		32	0.00038		0.00038
Trimethylbenzene;1,2,4-		80			80
Trimethylbenzene;1,3,5-		80			80
Vinyl Chloride	0.20	24	0.029		0.2
xylene;m-		1600			1600
xylene;o-		1600			1600
xylene;p-		1600			1600
xylenes	1000	1600			1000

[1]Site Groundwater Screening Levels for the remedial investigation (RI) are the default human health cleanup levels established by the Washington State Department of Ecology under the Model Toxics Control Act cleanup regulation (Chapter 173-340 of the Washington Administrative Code [WAC 173-340]). The Site Groundwater Screening Level is the Method A groundwater cleanup level for unrestricted land use, where established, or the lowest of the standard Method B formula values, from Ecology's CLARC data tables, updated July 2022, adjusted for natural background.

Table 11. Sediment COPCs and RI Screening Levels

Project No. 210577, 220 Cooper Point Road NW, Olympia, Washington

Analyte	SMS Freshwater Sediment Criteria[a]		Human Health Beach Play Sediment Screening Levels[c]	
	SCO	CSL	SCO	CSL
Conventional Pollutants	**mg/kg dw**		**mg/kg dw**	
Ammonia	230	300		
Total sulfides	39	61		
Metals	**mg/kg dw**		**mg/kg dw**	
Arsenic	14	120	2	21
Cadmium	2.1	5.4	220	220
Chromium	72	88	16[d]	160[d]
Copper	400	1,200	27,000	27,000
Lead	360	>1,300[b]	250[e]	250[e]
Mercury	0.66	0.8		
Nickel	26	110	13,000	13,000
Selenium	11	> 20[b]	3,300	3,300
Silver	0.57	1.7	3,300	3,300
Zinc	3200	>4,200[b]	200,000	200,000
Organic and Chlorinated Organic Chemicals	**µg/kg dw**		**µg/kg dw**	
2,4-Dimethylphenol			2,200,000	2,200,000
2-Methylphenol			5,600,000	5,600,000
4-Methylphenol[f]	260	2,000	11,000,000	11,000,000
Benzoic acid	2,900	3,800	450,000,000	450,000,000
Benzyl alcohol			11,000,000	11,000,000
Pentachlorophenol	1,200	>1,200[b]	1,400	14,000
Phenol	120	210	33,000,000	33,000,000
1,2,4-Trichlorobenzene			270,000	2,700,000
1,2-Dichlorobenzene			60,000,000	60,000,000
1,4-Dichlorobenzene			1,400,000	14,000,000
Dibenzofuran	200	680	670,000	670,000
Hexachlorobenzene			4,900	49,000
Hexachlorobutadiene			100,000	670,000
N-nitrosodiphenylamine			270,000	2,700,000
Phthalates	**µg/kg dw**		**µg/kg dw**	
Bis(2-Ethylhexyl)phthalate	500	22,000	93,000	930,000
Butylbenzyl phthalate			680,000	6,800,000
Diethyl phthalate			89,000,000	89,000,000
Dimethyl phthalate				
Di-n-butyl phthalate	380	1,000	11,000,000	11,000,000
Di-n-octyl phthalate	39	>1,100[b]	1,100,000	1,100,000
Pesticides and PCBs	**µg/kg dw**		**µg/kg dw**	
beta-Hexachlorocyclohexane	7.2	11	720	7,200
Carbazole	900	1,100		
Dieldrin	4.9	9.3	81	810
Endrin ketone	8.5		33,000[f]	33,000[f]
Total Aroclor	110	2,500	490	4,900
Total o,p' and p,p' dichlorodiphenyldichloroethanes (DDDs)	310	860	5,400	54,000
Total o,p' and p,p' dichlorodiphenyldichloroethylenes (DDEs)	21	33	23,000	230,000
Total o,p' and p,p' dichlorodiphenyltrichloroethanes (DDTs)	100	8,100	9,200	92,000
Polycyclic Aromatic Hydrocarbons (PAHs)	**µg/kg dw**		**µg/kg dw**	
Total PAHs	17,000	30,000		
Total LPAH				
2-Methylnaphthalene			360,000	360,000
Acenaphthene			5,400,000	5,400,000
Acenaphthylene				
Anthracene			27,000,000	27,000,000
Fluorene			3,600,000	3,600,000
Naphthalene			1,800,000	1,800,000
Phenanthrene				
Total HPAH				
Benz[a]anthracene			[g]	[g]
Benzo[a]pyrene			[g]	[g]
Benzo[g,h,i]perylene			[g]	[g]
Chrysene			[g]	[g]
Dibenzo[a,h]anthracene			[g]	[g]
Fluoranthene			3,600,000	3,600,000
Indeno[1,2,3-c,d]pyrene			[g]	[g]
Pyrene			2,700,000	2,700,000
Total cPAH TEQ			170	1700
Total benzofluoranthenes			[g]	[g]

Notes:

All values are dry weight (dw) normalized

[a]Freshwater sediment criteria for protection of the benthic community from Table 8-1 of SCUM (Ecology, 2021).

[b]"greater than" value indicates that the upper bound toxicity level is unknown, but is known to be above the concentration shown

[c]Human health beach play sediment screening levels calculated with equations and exposure parameters from SCUM Section 9.2.2.1 (Ecology, 2021). EPA RSL gastrointestinal absorption conversion factor and dermal absorption fractions were used. All other chemical specific values and all toxicity values were from CLARC (Ecology, 2023).

[d]Hexavalent chromium

[e]Method A soil screening level

[f]Endrin screening level

[g]cPAHs evaluated as Total cPAH TEQ

CLARC = cleanup levels and risk calculation
COPCs = constituents of potential concern
cPAH = carcinogenic PAHs
CSL = cleanup screening level
EPA = United States Environmental Protection Agency
HPAH = high-molecular weight PAHs
LPAH = low-molecular weight PAHs
RI = remedial investigation
RSL = regional screening levels
SCO = sediment cleanup objective
SMS = Sediment Management Standards, WAC 173-204
TEQ = toxicity equivalence
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram

Washington State Department of Ecology, 2021, Sediment Cleanup User's Manual (SCUM), Guidance for Implementing the Cleanup Provisions of the Sediment Management Standards, Chapter 173-204, Publication No. 12-09-057, Third Revision,
Washington State Department of Ecology, 2023, Cleanup Levels and Risk Calculation (CLARC). January 2023.

Table 12. Surface Water COPCs and RI Screening Levels

Project No. 210577, 220 Cooper Point Road NW, Olympia, Washington

Analyte	Surface Water Method B Noncancer (Eq. 730-1) (µg/L)	Surface Water Method B Cancer (Eq. 730-2) (µg/L)	Surface Water Human Health Fresh Water 173-201A WAC (µg/L)	Surface Water Human Health Fresh Water 40 CFR 131.45 (µg/L)	Surface Water Human Health Fresh Water CWA §304 (µg/L)	Other Applicable Criteria (µg/L)[1]	Surface Water Site Screening Level[2]
Petroleum Hydrocarbons							
Diesel-range petroleum hydrocarbons						3000	3000
Oil-range petroleum hydrocarbons						3000	3000
TPH-D+O						3000	3000
Gasoline-range petroleum hydrocarbons, benzene present						1000	1000
Gasoline-range petroleum hydrocarbons, no benzene present						1000	1000
Metals							
Arsenic	18	0.098	10	0.018	0.018	8	8
Barium					1000		1000
Cadmium	41						41
Chromium (total)							
Chromium (III)	240000						240000
Chromium (VI)	490	0.13					0.13
Copper	2900		1300		1300		1300
Iron							
Lead							
Manganese					50		50
Mercury							
Nickel	1100		150	80	610		80
Selenium	2700		120	60	170		60
Silver	26000						26000
Polycyclic Aromatic Hydrocarbons (PAHs)							
Acenaphthene	640		110	30	70		30
Anthracene	26000		3100	100	300		100
Fluoranthene	90		16	6	20		6
Fluorene	3500		420	10	50		10
Methyl naphthalene;1-							
Methyl naphthalene;2-							
Naphthalene	4900						4900
Pyrene	2600		310	8	20		8
Carcinogenic PAHs (cPAHs)							
Benzo(a)anthracene			0.014	0.00016	0.0012		0.00016
Benzo(a)pyrene	26	0.04	0.0014	0.000016	0.00012		0.000016
Benzo(b)fluoranthene			0.014	0.00016	0.0012		0.00016
Benzo(k)fluoranthene			0.014	0.0016	0.012		0.0016
Chrysene			1.40	0.016	0.12		0.016
Dibenz(a,h)anthracene			0.0014	0.000016	0.00012		0.000016
Indeno(1,2,3-cd)pyrene			0.014	0.00016	0.0012		0.00016
Total cPAH TEQ	26	0.04	0.0014	0.000016	0.00012		0.000016
Pentachlorophenol							
Pentachlorophenol	1200	1.5	0.046	0.002	0.03		0.002
Polychlorinated Biphenyls (PCBs)							
Aroclor 1016	0.0058	0.003					0.003
Aroclor 1254	0.0017	0.0001					0.0001
Aroclor 1260							
Total PCBs		0.0001	0.00017	0.000007	0.000064		0.000007
Volatile Organic Compounds							
Acetone							
Benzene	2000	23	0.44		0.58	10	0.44
Bromobenzene							0.00
Bromodichloromethane	14000	28	0.77	0.73	0.95		0.73
Bromoform	14000	220	5.8	4.60	7		4.60
Bromomethane	970		520	300	100		100.00
Carbon tetrachloride	550	4.9	0.2		0.4		0.20
Chlorobenzene	5000		380	100	100		100.00
Chloroform	6900	56	260	100	60		56.00
Chloromethane							
Chlorotoluene;o-							
Chlorotoluene;p-							
Dibromochloromethane	14000	21	0.65	0.60	0.80		0.60
Dichlorobenzene;1,2-	4200		2000	700.00	1000.00		700
Dichlorobenzene;1,3-			13	2.00	7.00		2
Dichlorobenzene;1,4-	3300	22	460	200.00	300.00		22
Dichlorodifluoromethane							
Dichloroethane;1,2- (EDC)	13000	59	9.3	8.90	9.90		8.9
Dichloroethylene;1,2-,cis							
Dichloroethylene;1,2-,trans	33000		600	200.00	100.00		100
Dichloropropane;1,2-	25000	43	0.71		0.90		0.71
Dichloropropane;1,3-							
Dichloropropene;1,3-	41000	34	0.24	0.22	0.27		0.22
Ethyl chloride							
Ethylbenzene	6900		200	29.00	68.00	12	12
Ethylene dibromide (EDB)							
Hexachlorobutadiene	930	30	0.69	0.01	0.01		0.01
Hexanone;2-							
Methyl ethyl ketone							
Methyl isobutyl ketone							
Methyl tert-butyl ether (MTBE)							
Methylene bromide							
Methylene chloride	17000	590	16.00	10.00	20.00		10
Propylbenzene;n-							
sec-butylbenzene							
Styrene							
tert-butylbenzene							
Tetrachloroethane;1,1,1,2-							
Tetrachloroethane;1,1,2,2-	10000	6.5	0.12	0.10	0.20		0.10
Tetrachloroethylene	500	100	4.90	2.40	10.00		2.4
Toluene	19000		180.00	72.00	57.00	53	53
Trichlorobenzene;1,2,3-							
Trichlorobenzene;1,2,4-	230	2	0.12	0.04	0.07		0.04
Trichloroethane;1,1,1-	930000		47000.00	20000.00	10000.00		10000
Trichloroethane;1,1,2-	2300	25	0.44	0.35	0.55		0.35
Trichloroethylene	120	4.9	0.38	0.30	0.60		0.3
Trichlorofluoromethane							
Trichloropropane;1,2,3-							
Trimethylbenzene;1,2,4-							
Trimethylbenzene;1,3,5-							
Vinyl Chloride	6600	3.7	0.02		0.02		0.020
xylene;m-							
xylene;o-							
xylene;p-							
xylenes						57	57

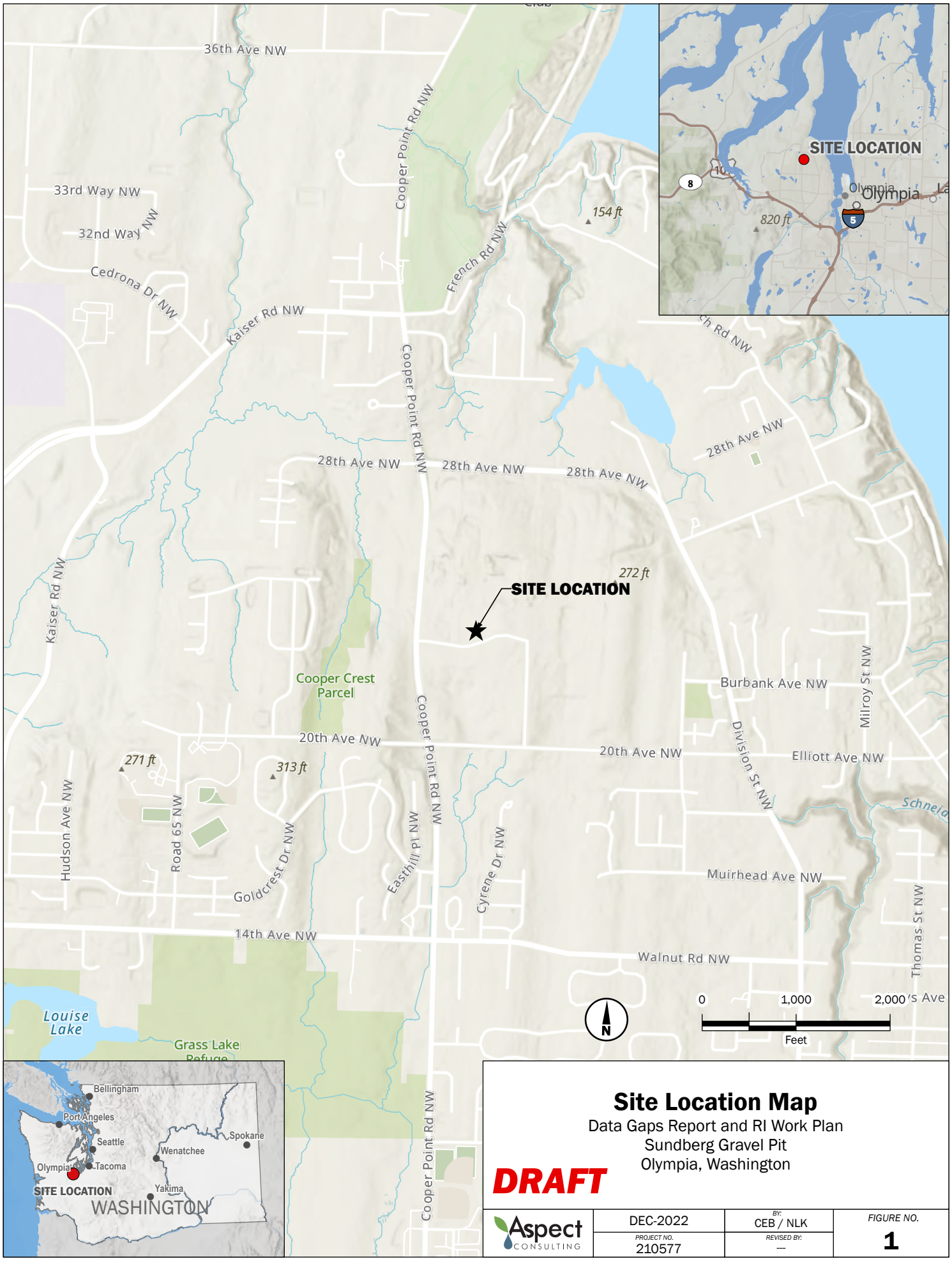
Notes

µg/L - micrograms per liter

[1]For petroleum hydrocarbons, benzene, toluene, and ethylbenzene: concentrations of gasoline and weathered diesel range organics predicted to be protective of aquatic receptors in surface water, freshwater, Ecology Implementation Memorandum No. 23 (2021). For arsenic, natural background groundwater arsenic concentrations in Washington State, Ecology 2022.

[2]Site Surface Water Screening Levels for the remedial investigation (RI) are the lowest of the surface water critera, adjusted for background.

FIGURES



Site Location Map

Data Gaps Report and RI Work Plan
Sundberg Gravel Pit
Olympia, Washington

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Aspect Consulting	DEC-2022	BY: CEB / NLK	FIGURE NO. 1
	PROJECT NO. 210577	REVISED BY: ---	

74202900000
Parcel B (6.79 acres)

50400400100

50400100100

50400402100

50400400100

50400402000

50400402500

50400100100

50400402300

50400300100

50400200100

81700000000
Parcel A
(27.4 acres)

50400300100

50400200100

50400202700

81700000000
Parcel A
(27.4 acres)

74202500200
Parcel C
(4.66 acres)

74202500100
Parcel D
(7.27 acres)

COOPER PT RD NW

GROVE ST NW

20TH AVE NW

Approximate limits of historical land disturbance (inferred from LiDAR)

Approximate location of former Underground Storage Tank (UST) and petroleum-impacted soil stockpile

Approximate limits of former garage (1980s-2010s)

Approximate limits of former garage area

Historical Shed/Shack Area (1960-1990)

Former Residence

Subject Property

Thurston County Tax Parcel

N

0 100 200 Feet

Subject Property Map showing Historical Features

Data Gaps Report and RI Work Plan
Sundberg Gravel Pit
Olympia, Washington

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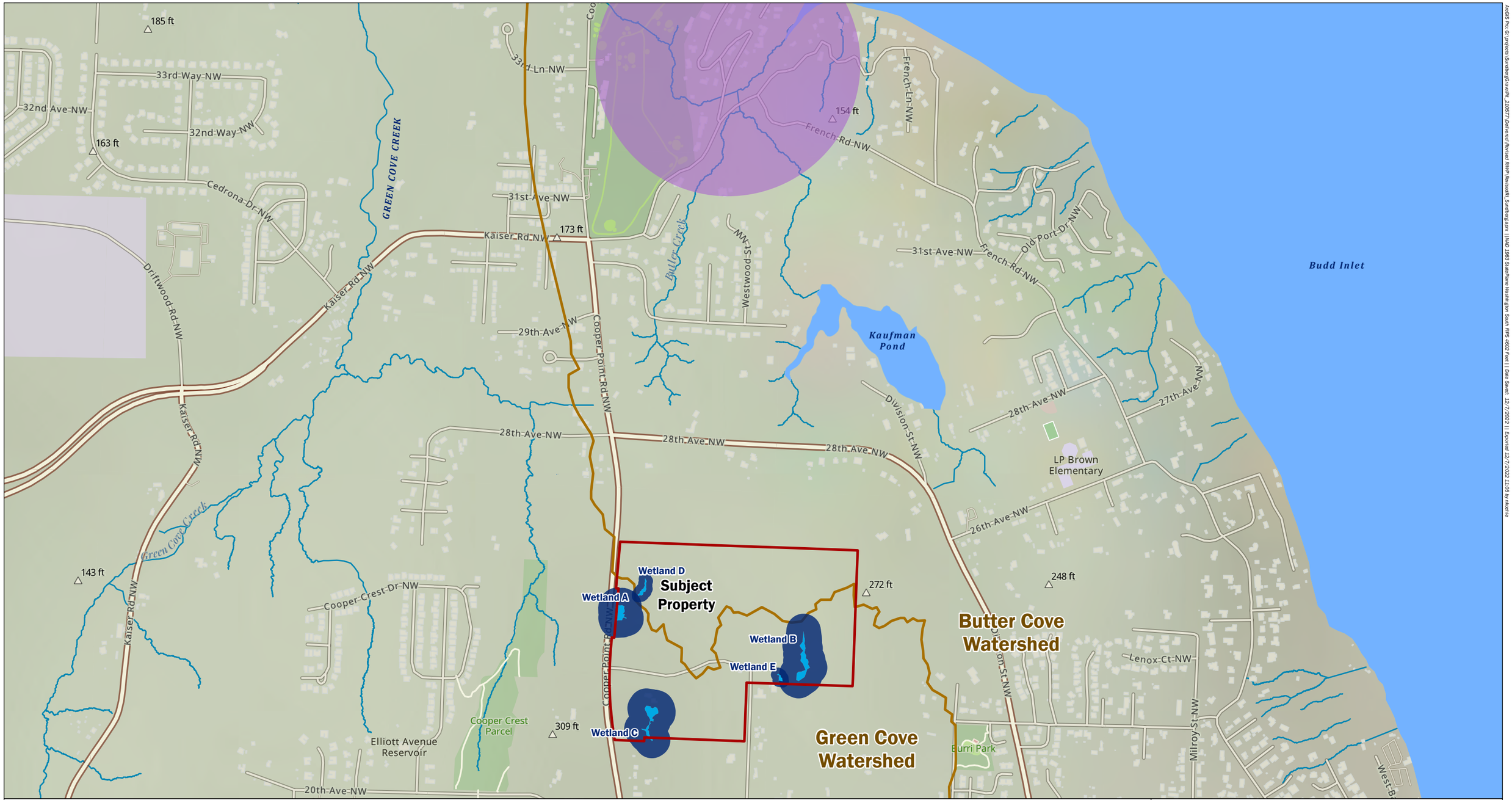
Aspect CONSULTING	DEC-2022	BY: CEB / NLK	FIGURE NO. 2
	PROJECT NO. 210577	REVISED BY: ---/---	

Data source credits: None || Basemap Service Layer Credits: NA



Surface Waters and Wellhead Protection Area Map

Data Gaps Report and RI Work Plan
Sundberg Gravel Pit
Olympia, Washington

DRAFT

Aspect Consulting	DEC-2022	BY: CEB / NLK	FIGURE NO. 3
	PROJECT NO. 210577	REVISED BY: ---/---	

ArcGIS Pro: C:\projects\Sundberg\GravelPit_210577\Delivered\Revised RIWP\Revised\RI_Sundberg.aprx | | NAD 1983 StatePlane Washington South FIPS 4602 Feet | | Date Saved: 12/7/2022 | | Exported 12/7/2022 11:05 by mkohle

2017 WESTERN WASHINGTON LIDAR

2003 AERIAL IMAGE

ArcGIS Pro: C:\projects\Sundberg\SandPit_210577\Delivered\Revised RWP\Revised\RI_Sundberg.aprx | | No Projected Coordinate System | | Date Saved: 5/19/2023 | | Exported 5/24/2023 14:42 by mtoche

- Approximate limits of historical land disturbance (inferred from LiDAR)
- Potential areas of historical land disturbance (based on aerial photographs)
- Subject Property

N

0 150 300

Feet

Land Disturbance Area Maps

Data Gaps Report and RI Work Plan
Sundberg Gravel Pit
Olympia, Washington

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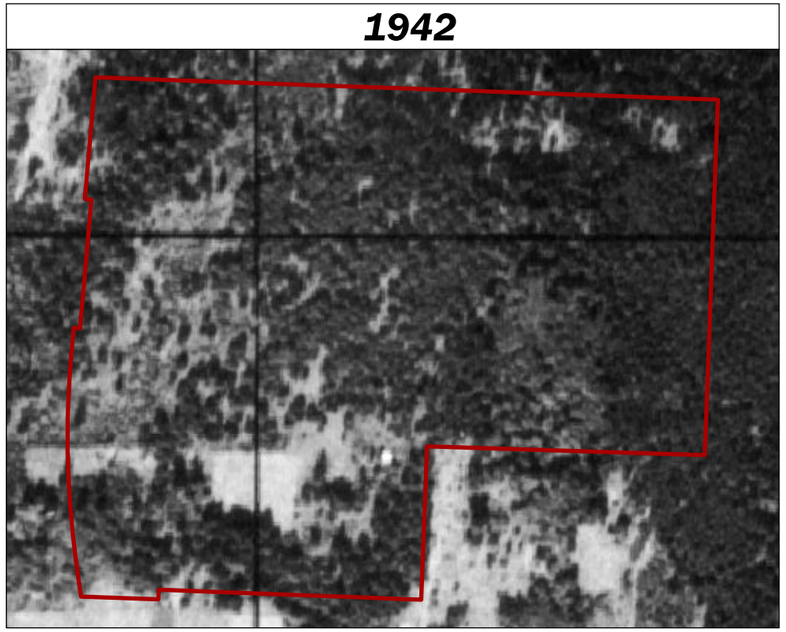
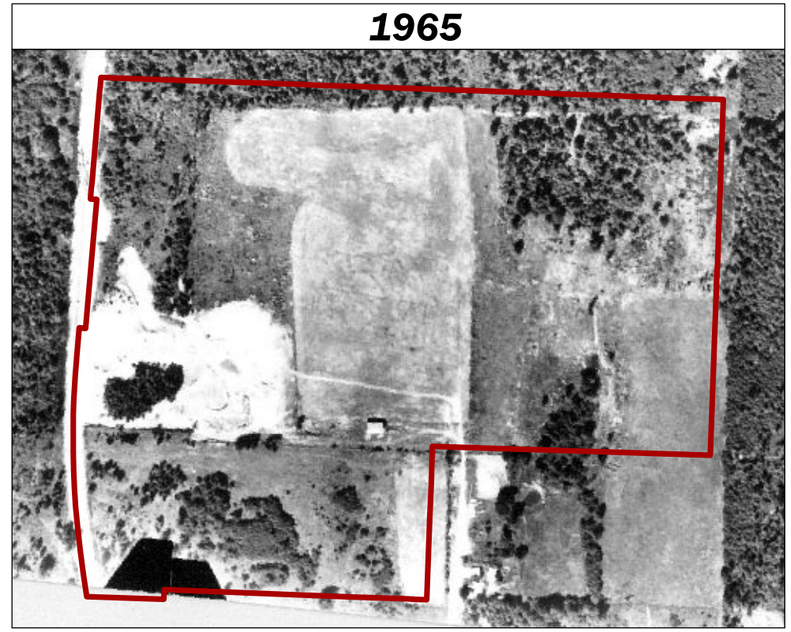
Aspect Consulting	MAY-2023	BY: CEB / NLK	FIGURE NO. 4
	PROJECT NO. 210577	REVISED BY: ---/---	

Data source credits: None | | Basemap Service Layer Credits: NA





Aerial Photos 1942-1990

Data Gaps Report and RI Work Plan
Sundberg Gravel Pit
Olympia, Washington

DRAFT

Aspect Consulting	DEC-2022	BY: CEB / NLK	FIGURE NO. 5a
	PROJECT NO. 210577	REVISED BY: ---/---	

2003

2005

2006

2009

2013

2018

Note: Aerial photos from Google Earth.

Aerial Photos 2003-2018

Data Gaps Report and RI Work Plan
Sundberg Gravel Pit
Olympia, Washington

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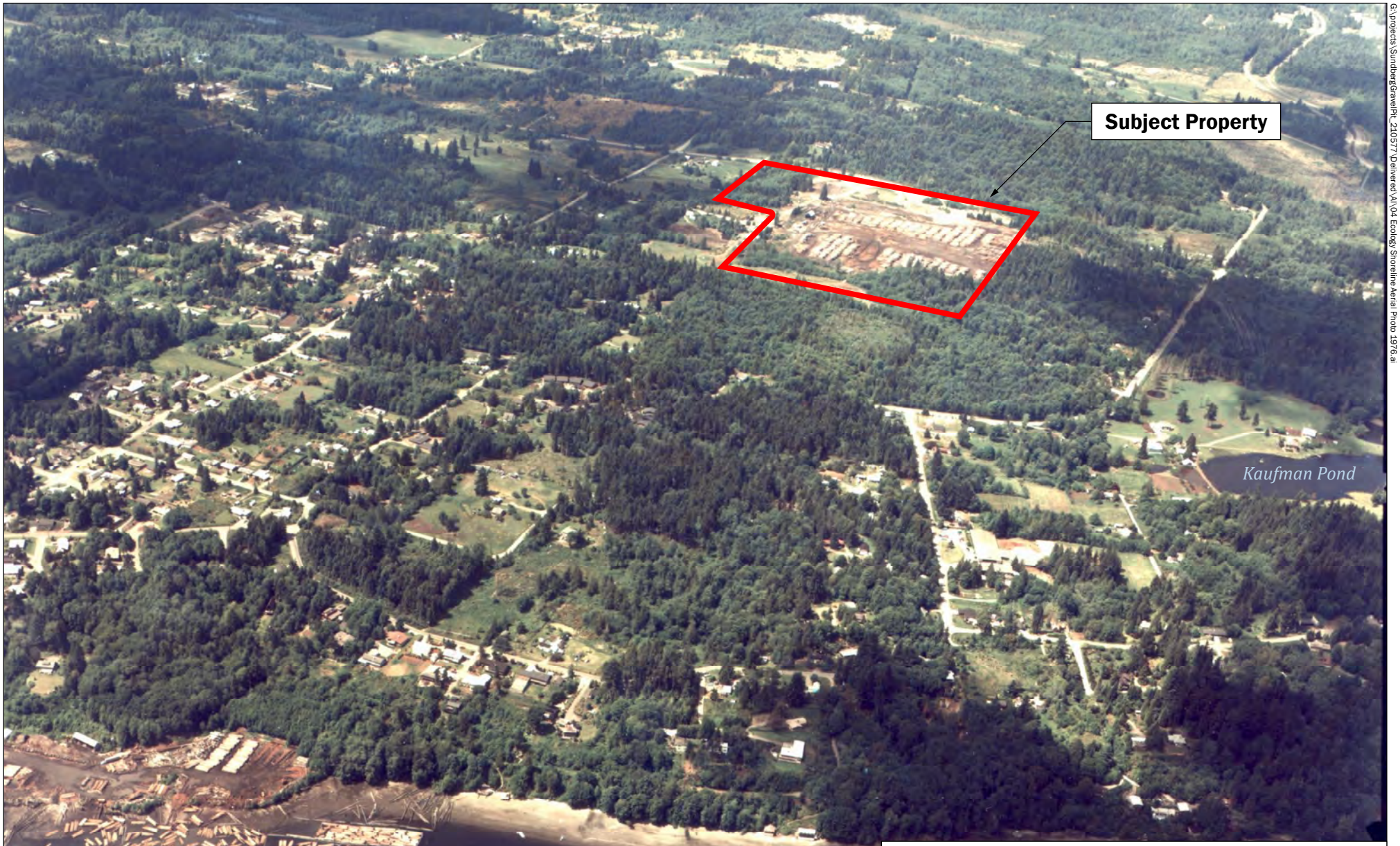
Aspect CONSULTING	DEC-2022	BY: CEB / NLK	FIGURE NO. 5b
	PROJECT NO. 210577	REVISED BY: ---/---	

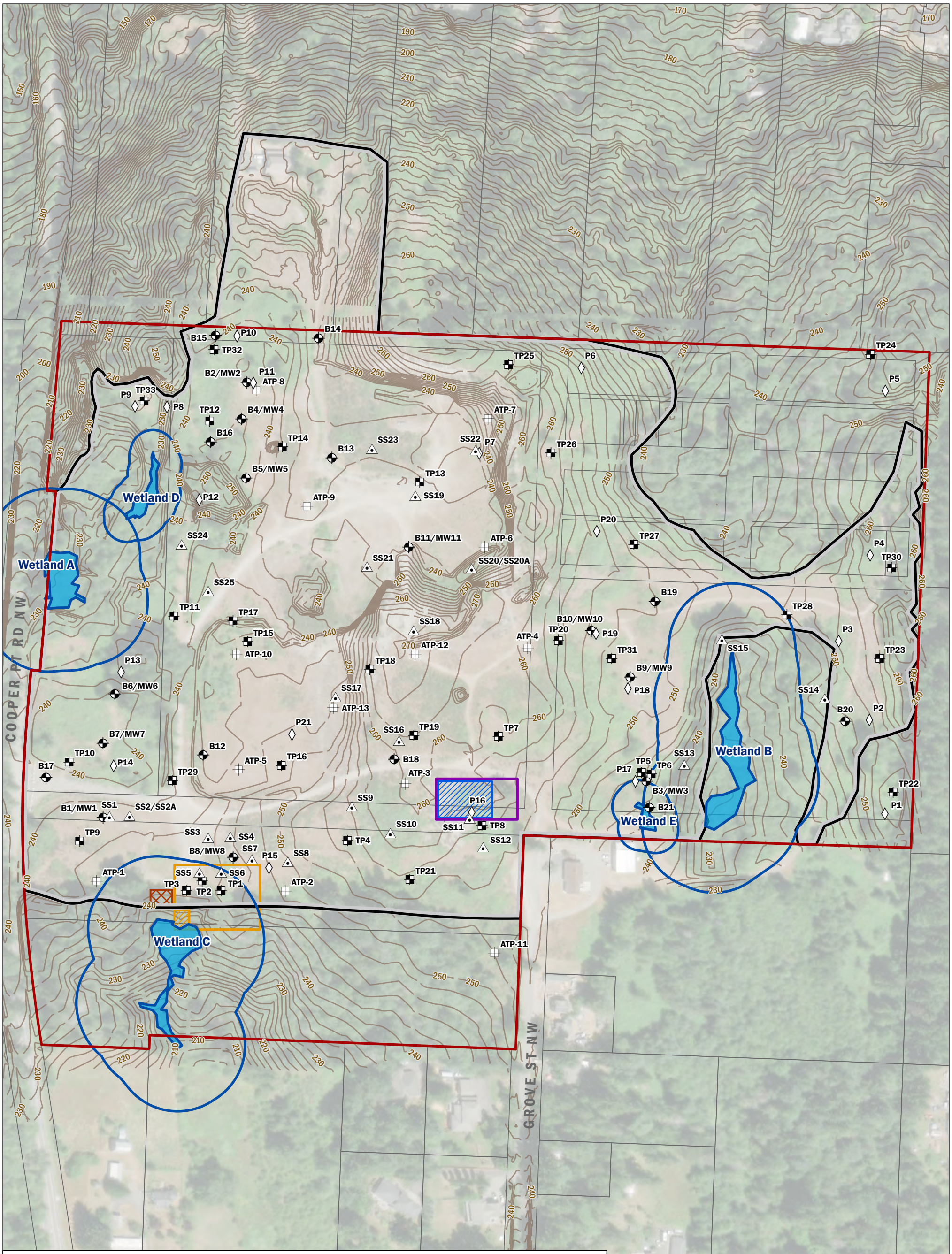


Ecology Shoreline Aerial Photo 1976

Data Gaps Report and RI Work Plan
Sundberg Gravel Pit
Olympia, Washington

Aspect CONSULTING	DEC-2022	BY: TDR	FIGURE NO. 6
	PROJECT NO. 210577	REV BY: ---	

G:\projects\SundbergGravelPit_210577\Delivered\AI\04 Ecology Shoreline Aerial Photo 1976.ai



Map Showing Exploration Locations

Data Gaps Report and RI Work Plan
Sundberg Gravel Pit
Olympia, Washington

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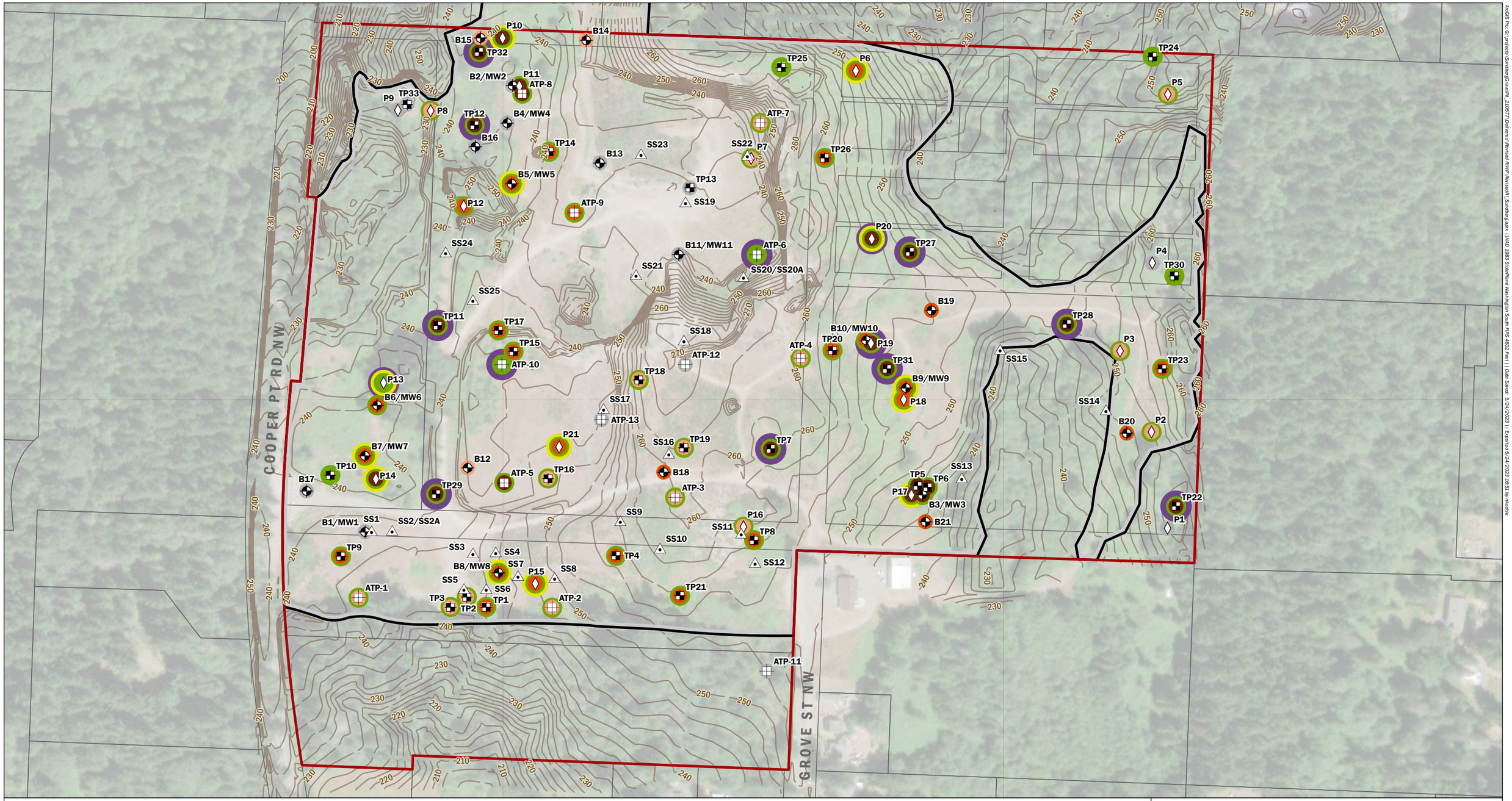
Aspect Consulting	DEC-2022	BY: CEB / NLK	FIGURE NO. 7
	PROJECT NO. 210577	REVISED BY: ---/---	

Data source credits: None || Basemap Service Layer Credits: Maxar, Microsoft



Soil Boring/Monitoring Well (AEG 2020/2021)

Surface Soil Sample (AEG 2020/2021)

Test Pit (RNS 2008)

Test Pit (PR 2007)

Test Pit (Ages 2015)

Fill

- 0 feet
- 0-5 feet
- 5-10 feet
- 10-15 feet

Presence of Wood/Woody Debris

Presence of Construction Debris

Thickness Currently Undetermined

Approximate limits of historical land disturbance (inferred from LiDAR)

Subject Property

2-foot Contours

Thurston County Tax Parcel

N

0 100 200 Feet

Note: Locations are approximate.

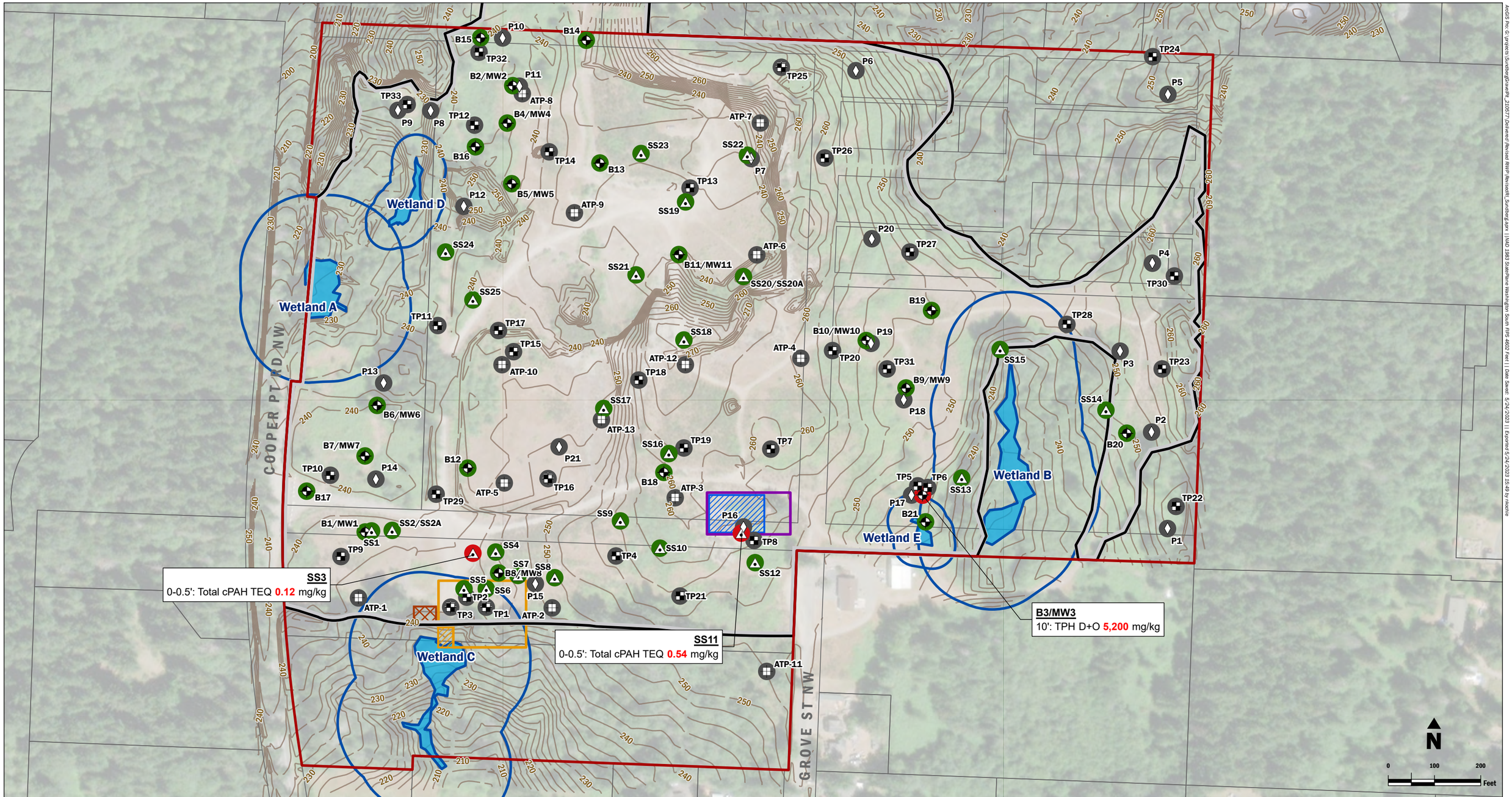
Map Showing Subsurface Observations

Data Gaps Report and RI Work Plan
Sundberg Gravel Pit
Olympia, Washington

DRAFT

Aspect Consulting	MAY-2023	BY: CEB / NLK	FIGURE NO. 8
	PROJECT NO. 210577	REVISED BY: ---/---	

Data source credits: None || Basemap Service Layer Credits: Maxar, Microsoft



Soil Boring/Monitoring Well (AEG 2020/2021)

Surface Soil Sample (AEG 2020/2021)

Test Pit (RNS 2008)

Test Pit (PR 2007)

Test Pit (Ages 2015)

Soil Analytical Results

- One or more tested contaminants above Soil Cleanup Levels
- All tested contaminants below Soil Cleanup Levels
- No Soil Data

Approximate limits of historical land disturbance (inferred from LiDAR)

Approximate location of former Underground Storage Tank (UST) and petroleum-impacted soil stockpile

Approximate limits of former garage (1980s-2010s)

Approximate limits of former garage area

Historical Shed/Shack Area (1960-1990)

Former Residence

Wetland Boundary

Wetland Buffer

Subject Property

2-foot Contours

Thurston County Tax Parcel

SS3
0-0.5': Total cPAH TEQ **0.12** mg/kg

Notes:
- Soil data shown for locations where contaminants detected above Soil Cleanup Levels, sample depth shown in feet below ground surface
- total cPAH TEQ = total carcinogenic polycyclic aromatic hydrocarbon toxic equivalent concentration
- TPH-D+O = total diesel-range extended petroleum hydrocarbons
- mg/kg - milligrams per kilogram
- Locations are approximate

Map Showing Soil Analytical Results

Data Gaps Report and RI Work Plan
Sundberg Gravel Pit
Olympia, Washington

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Aspect Consulting

MAY-2023	BY: CEB / NLK	FIGURE NO. 9
PROJECT NO. 210577	REVISED BY: ---/---	

Data source credits: None || Basemap Service Layer Credits: Maxar, Microsoft

P10, wood boles in mixed fill from surface to 10 feet bgs
P11, coarse woody debris and wood boles in mixed fill from surface to 12 feet bgs
ATP-8, woody debris in fill from surface to 12 feet bgs

TP17, wood debris in fill to 7 feet bgs
TP11, wood chips from 5 to 8 feet bgs
ATP-10, woody debris in fill from 2.5 to 7 feet bgs, large logs from 7 to 8 feet

P14, logs and cedar planks in mixed fill from 2 to 12 feet bgs

TP31, 20% wood chips from 5 to 12 feet bgs
P18, 60% coarse and fine woody debris from 7 to 9 feet
P19, 25% bark from 3 to 11 feet bgs

B3/MW3, fill with wood from 2 to 11 feet bgs
P17, large logs and lumber from 6 to 10 feet bgs

P15, 15% woody debris from 1 to 7 feet bgs
B8/MW8, woody debris from 0 to 6 feet
ATP-2, tree roots, woody debris in fill from 0 to 4 feet

COOPER PT RD NW
GROVE ST NW

- Surface Soil Sample (AEG 2020/2021)
- Soil Boring (AEG 2020)
- Monitoring Well (AEG 2020)
- Test Pit (RNS 2008)
- Test Pit (PR 2007)
- Test Pit (Ages 2015)
- Presence of Wood/Woody Debris
- Descriptions of buried wood debris in representative areas of the Subject Property for the identification of methane sampling locations
- Approximate limits of historical land disturbance (inferred from LiDAR)
- Subject Property
- 2-foot Contours
- Thurston County Tax Parcel

Note: Locations are approximate.

N

0 100 200 Feet

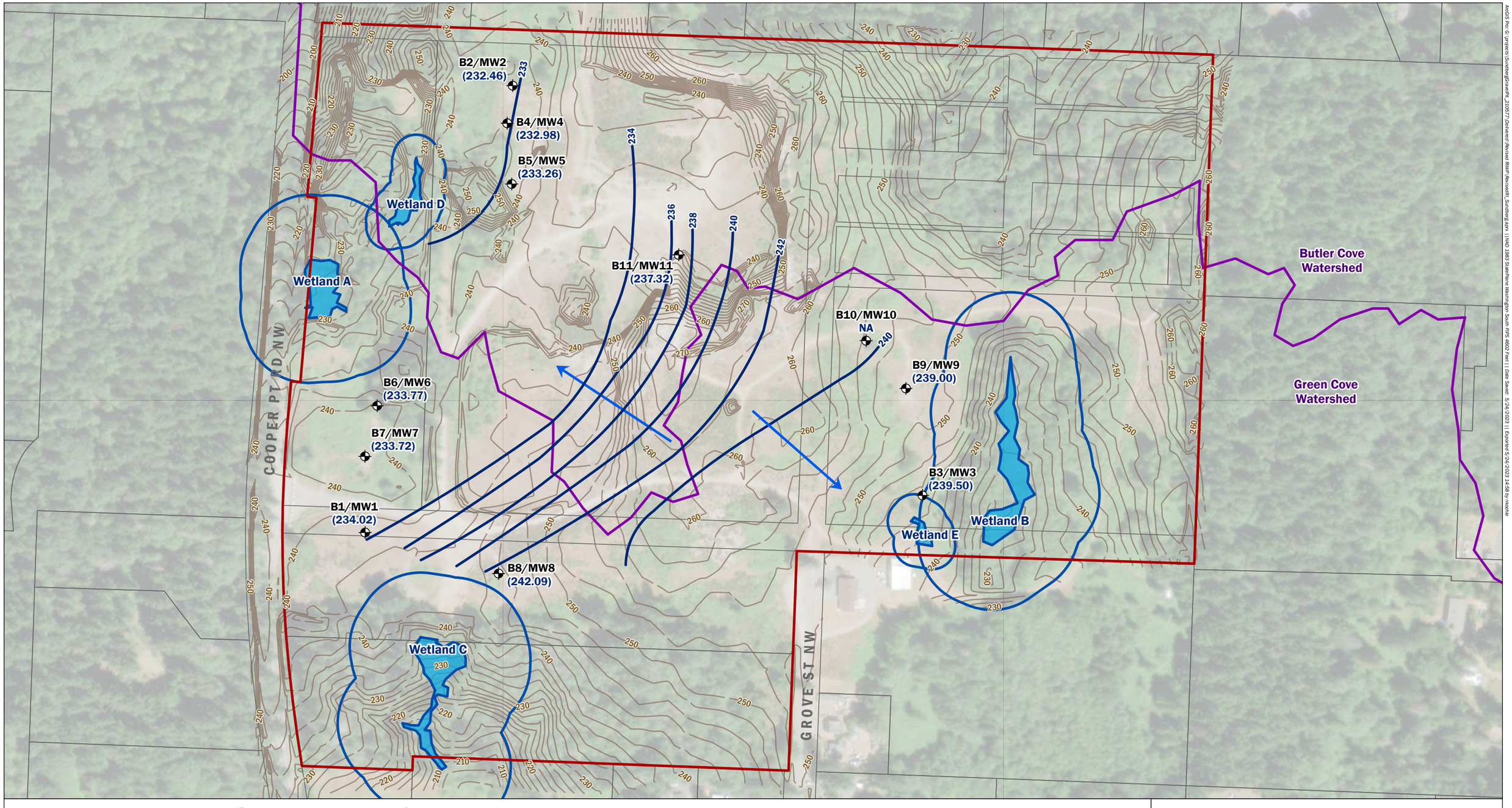
Locations of Buried Wood Debris and Representative Areas for Methane Sampling

Data Gaps Report and RI Work Plan
Sundberg Gravel Pit
Olympia, Washington

DRAFT

Aspect CONSULTING	MAY-2023	BY: CEB / NLK	FIGURE NO. 10
	PROJECT NO. 210577	REVISED BY: ---/---	

Data source credits: None || Basemap Service Layer Credits: Maxar, Microsoft



Monitoring Well (AEG 2020)

Groundwater Contour

Groundwater Flow Direction

Wetland Boundary

Wetland Buffer

Green Cove Watershed

2-foot Contours

Subject Property

Thurston County Tax Parcel

(232.46) Groundwater elevation in NAVD88 based on water levels measured in monitoring wells on November 9, 2020

N

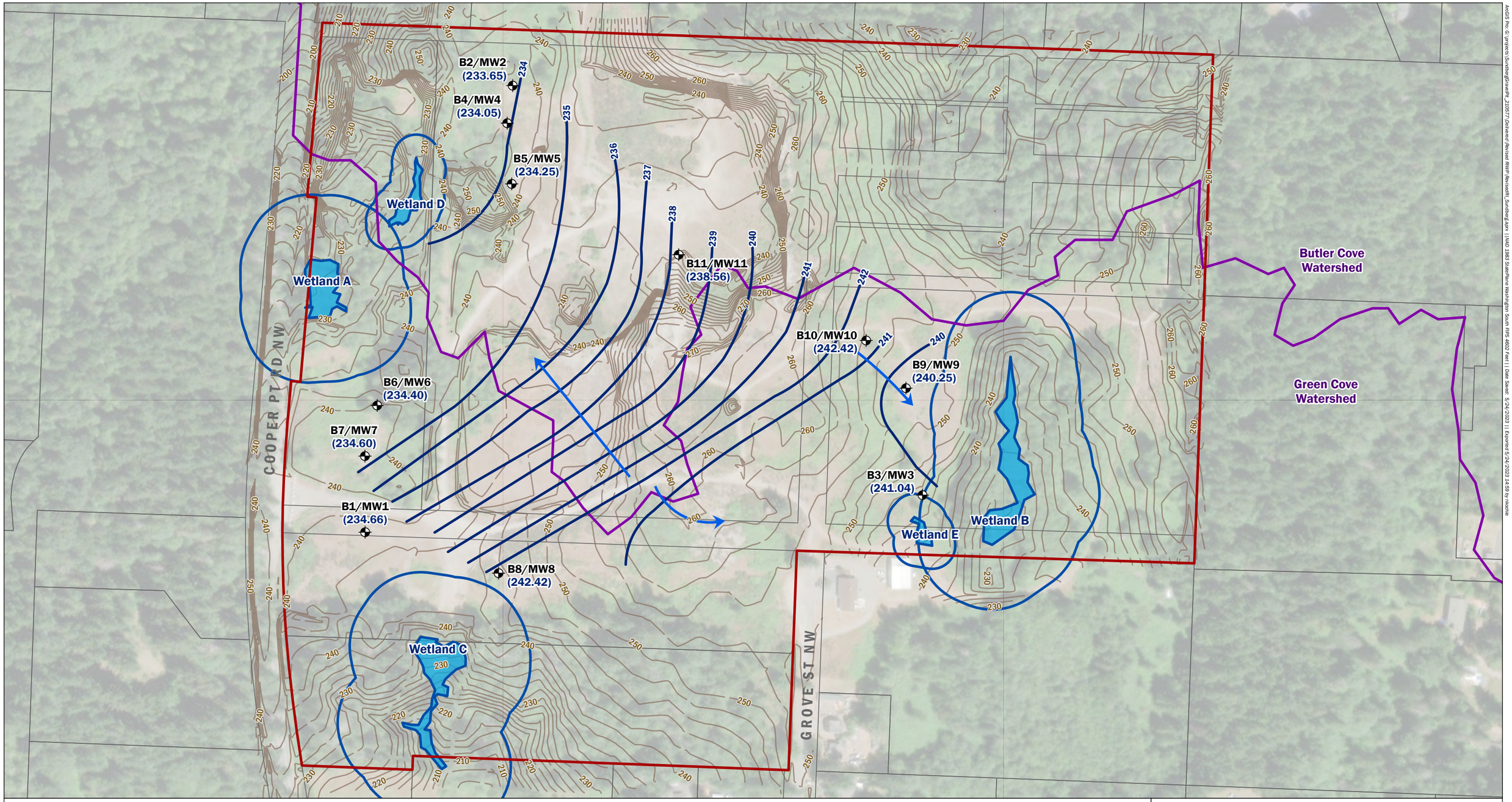
0 100 200 Feet

Groundwater Elevation Contour Map (November 2020)

Data Gaps Report and RI Work Plan
Sundberg Gravel Pit
Olympia, Washington

DRAFT

Aspect CONSULTING	MAY-2023	BY: CEB / NLK	FIGURE NO. 11
	PROJECT NO. 210577	REVISED BY: ---/---	



Monitoring Well (AEG 2020)

Groundwater Contour

Groundwater Flow Direction

Wetland Boundary

Wetland Buffer

Green Cove Creek Watershed Boundary

2-foot Contours

Subject Property

Thurston County Tax Parcel

(233.65) Groundwater elevation in NAVD88 based on water levels measured in monitoring wells on May 6, 2021

N

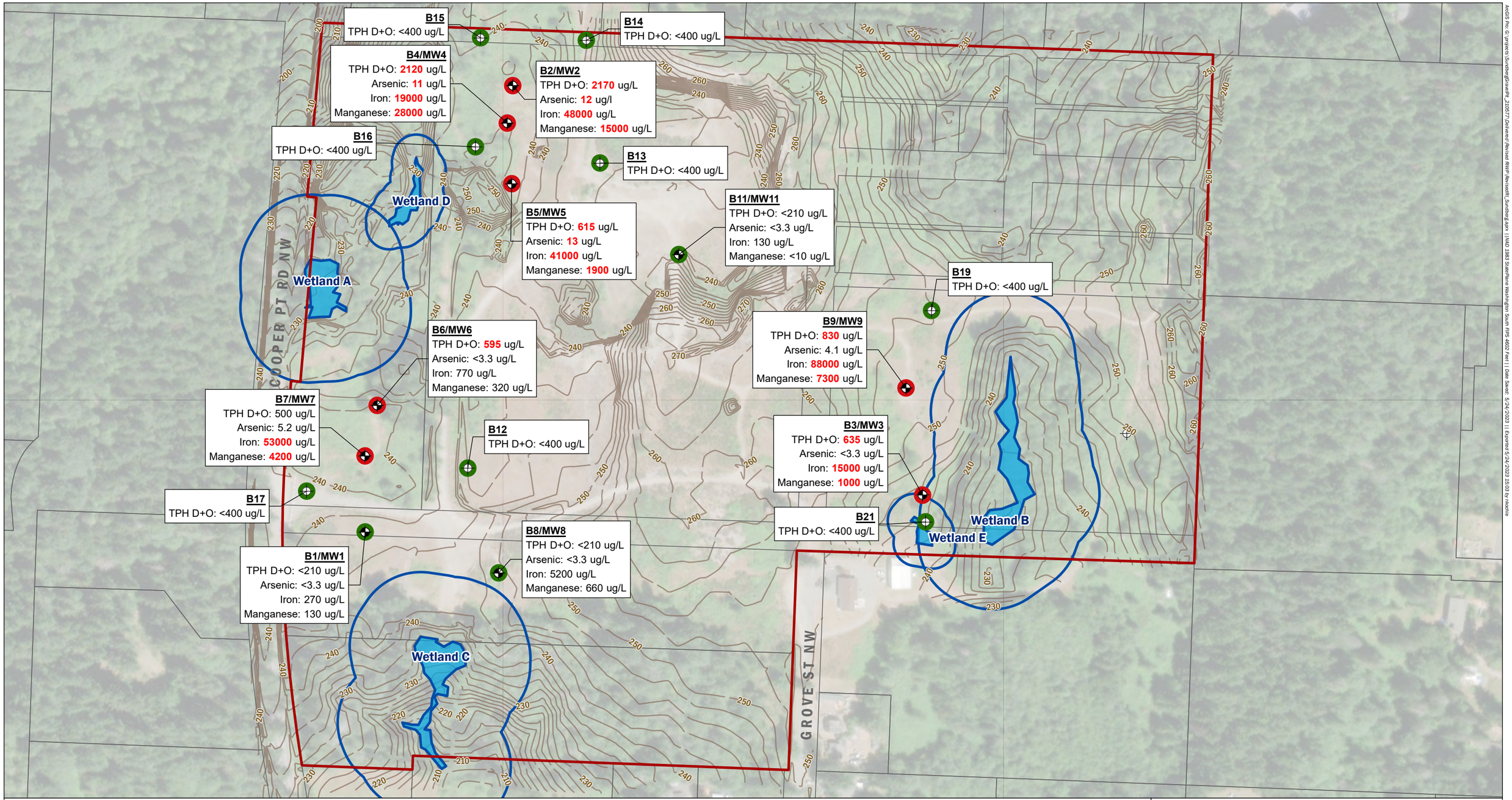
0 100 200 Feet

Groundwater Elevation Contour Map (May 2021)

Data Gaps Report and RI Work Plan
Sundberg Gravel Pit
Olympia, Washington

DRAFT

Aspect Consulting	MAY-2023	BY: CEB / NLK	FIGURE NO. 12
	PROJECT NO. 210577	REVISED BY: ---/---	



Monitoring Well (AEG 2020)

Soil Boring (AEG 2020)

Groundwater Analytical Results

One or more contaminants detected above Groundwater Cleanup Levels

Contaminants not detected above Groundwater Cleanup Levels

Wetland Boundary

Wetland Buffer

2-foot Contours

Subject Property

Thurston County Tax Parcel

B2/MW2
TPH D+O: 2170 ug/L
Arsenic: 12 ug/l
Iron: 48000 ug/L
Manganese: 15000 ug/L

COPC Detected Above the Groundwater Cleanup Level

Highest Reported Concentration of COPC

N

0 100 200 Feet

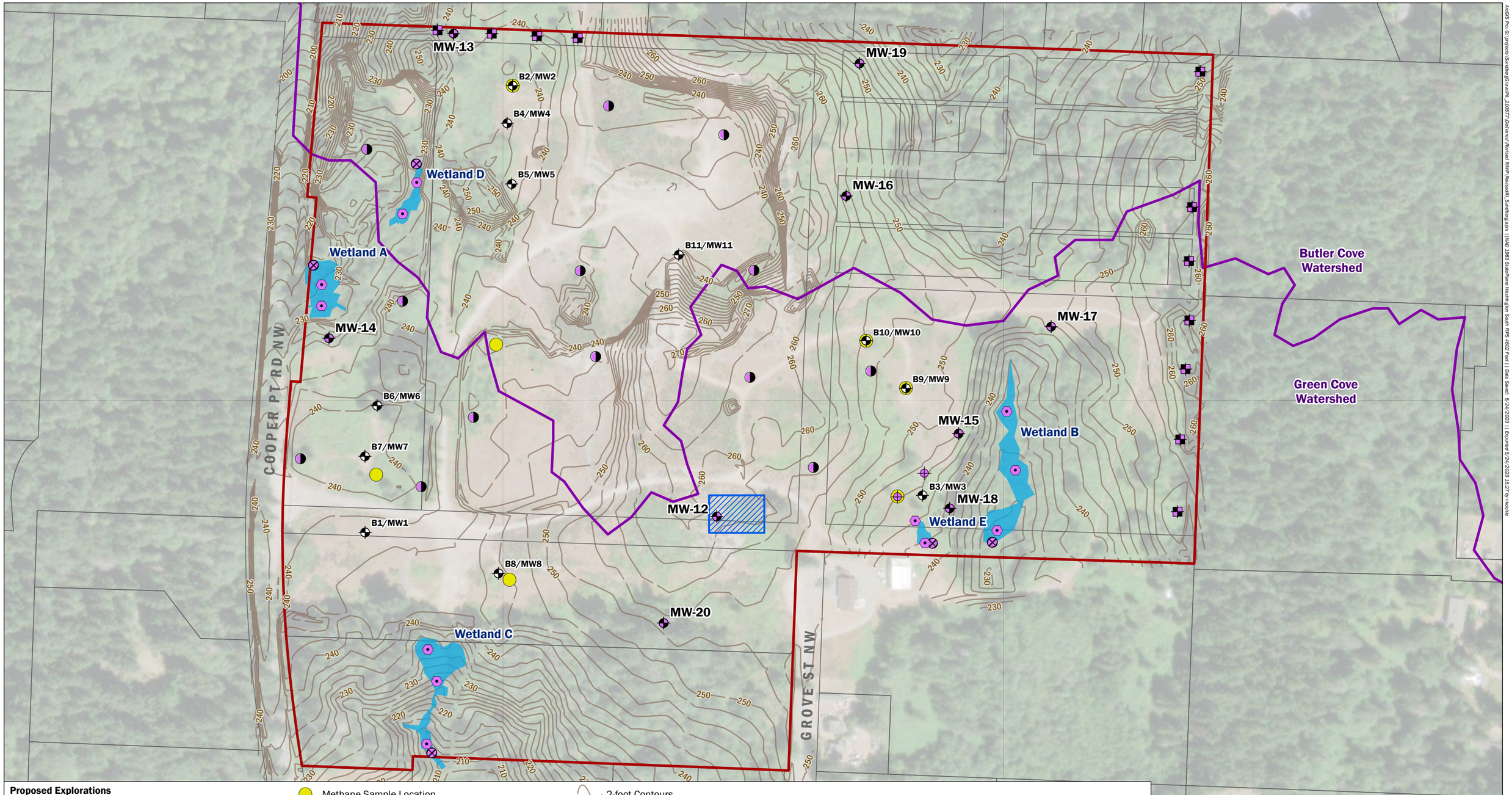
Note: Groundwater data shown for total petroleum hydrocarbons in reconnaissance groundwater samples collected from borings and all tested constituents in samples collected from monitoring wells. Metals in reconnaissance samples are not shown because of the potential elevated results attributable to inherent turbidity of grab samples.

Map Showing Groundwater Analytical Results

Data Gaps Report and RI Work Plan
Sundberg Gravel Pit
Olympia, Washington

DRAFT

Aspect CONSULTING	MAY-2023	BY: CEB / NLK	FIGURE NO. 13
	PROJECT NO. 210577	REVISED BY: ---/---	



Proposed Explorations

- Soil Boring Location
- Test Pit Exploration Location
- Monitoring Well Location
- Fill Investigation Location
- Preliminary Wetland Sediment Sampling Station
- Preliminary Wetland Surface Water Sample Location
- Methane Sample Location
- Existing Monitoring Well (AEG 2020/2021)
- Approximate location of former Underground Storage Tank (UST) and petroleum-impacted soil stockpile
- Wetland Boundary
- Green Cove Watershed
- 2-foot Contours
- Subject Property
- Thurston County Tax Parcel

Note: Locations are approximate.

N

0 100 200 Feet

Remedial Investigation Approach

Data Gaps Report and RI Work Plan
Sundberg Gravel Pit
Olympia, Washington

DRAFT

Aspect Consulting	MAY-2023	BY: CEB / NLK	FIGURE NO. 14
	PROJECT NO. 210577	REVISED BY: ---/---	

APPENDIX A

Sampling and Analysis Plan

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A Field Forms

A.1. Introduction

Aspect Consulting LLC (Aspect) has prepared this Sampling and Analysis Plan (SAP) for the Sundberg Gravel Pit, generally located at 2200 Cooper Point Road NW in Olympia, Washington (the Subject Property; Figure 1). The Subject Property is comprised of approximately 53 acres; portions of which have been historically used for sand and gravel mining and reclamation, including equipment parking and vehicle fueling, and log storage.

This SAP has been prepared as Appendix A to the "Data Gap Report and Remedial Investigation Work Plan, Sundberg Gravel Pit" (RI Work Plan) to describe specific sampling and analysis protocols for field sampling and quality assurance for chemical and physical analysis. This work is being completed under the direction of Washington State Department of Ecology (Ecology) in accordance with the requirements of the Washington State Model Toxics Control Act (MTCA) Cleanup Regulation, Chapter 173-340 of the Washington Administrative Code (WAC 173-340), and the Sediment Management Standards (SMS), WAC 173-204. The work is being conducted in accordance with the Agreed Order No. DEXXXXX (Agreed Order) between Ecology and Green Cove Park LLC.

This document is comprised of two major components: a Field Sampling Plan (FSP) defining field protocols, and a Quality Assurance Project Plan (QAPP) defining analytical protocols. It is the responsibility of Aspect personnel and subcontracted analytical laboratory personnel performing the RI sampling and analysis activities to adhere to the requirements of the SAP and QAPP. The FSP (Section A.2) and QAPP (Section A.3) are presented below.

A.2. Field Sampling Plan

The purpose of the FSP is to describe the field sample collection, handling, and laboratory analysis procedures that will be conducted during the execution of the RI Work Plan to meet the project-specific data quality objectives (DQOs) in accordance with the requirements of MTCA (WAC 173-340-820) and the SMS (WAC 173-204-600). It is the responsibility of the project personnel performing or overseeing the sampling and analysis activities to adhere to the requirements of this FSP.

A.2.1.Soil Sample Collection

Soil samples will be collected throughout the RI from test pits and borings for soil classification and field screening (Section A.2.1.3) and laboratory analysis (Section A.2.1.4). A general description of the sample collection procedures is summarized in the following sections.

All soil samples to be submitted for volatile organic compound (VOC) analyses will be collected in accordance with U.S. Environmental Protection Agency (EPA) Method 5035A. The soil aliquot for volatile organic carbon analysis will be collected from the undisturbed soil sample core using a laboratory-supplied modified disposable plastic syringe as required by the EPA Method 5035A and placed in preweighed laboratory

supplied vials. For all other analyses, discrete soil samples will be removed from the sampler or backhoe bucket using a decontaminated stainless-steel spoon or a freshly gloved hand. Gravel-sized material greater than approximately 0.5-inch will be removed from the sample. An aliquot of the soil will be placed into certified-clean jars supplied by the analytical laboratory.

QC soil samples (e.g., field duplicates, rinsate blanks, and trip blanks) will be collected at the respective frequencies prescribed in Section 3.5.

A.2.1.1. Text Pit Exploration

Test pit explorations will be completed through fill materials and into native soils, where practicable, to a minimum depth of 6 feet bgs unless health and safety considerations (e.g., sidewall sloughing) dictate otherwise. Each test pit will be approximately 3-feet wide and 12-feet in length. The test pit excavations may extend deeper than 6 feet bgs, if native soil is not encountered at/above that depth, to evaluate the thickness and quality of fill. The maximum depth of the test pits will be dependent on observations made during the investigation, the subsurface lithology and the limitations of the equipment given the location and surface conditions of the exploration. If the test pit cannot be completed because of debris, sloughing soil or other impediments, the exploration location and/or type will be modified to meet the investigation objectives.

Soils from test pits will be logged and screened for evidence of contamination, as described in Section A.2.1.3, and samples will be collected for chemical analysis, as described in Section A.2.1.4. The subsurface conditions, including soil type, the presence of buried wood or other debris, and field screening results will be documented on a test pit log and in photographs. Following sample collection and field logging, each test pit will be backfilled with soil excavated from it.

A.2.1.2. Sonic/Hollow-Stem Auger

The drilling method will be dependent on the exploration location and objective and recommendations from the drilling contractor on which method is likely to be most successful at meeting the project objectives. A combination of direct-push and/or either sonic or hollow-stem auger drilling methods will be utilized.

If sonic drilling methods are employed, soil samples will be collected continuously in 5-foot intervals to the total depth of the exploration using a 3- to 4-inch diameter sampling core barrel inside an outer sonic drill casing. The sampling core barrel is driven by a high-frequency, vibrating sonic head, driven by hydraulic motors, in conjunction with rotational and downforce. The benefits of sonic over hollow-stem auger drilling methods include generation of smaller volumes investigation-derived waste, ability to reach greater depths and recover better core samples in dense soils, and ease of using temporary conductor casing to minimize potential contaminant drawdown from contaminated zones to clean zones.

If hollow-stem auger is employed, soil samples will be collected at 2.5-foot depth intervals to the total depth of exploration using a 2-inch-outside-diameter split-spoon sample tube driven into the ground at the bottom of a borehole by blows from a 140-or 300-pound slide hammer falling through a distance of 30 inches. The sample tube is driven 18 inches into the ground and the number of blows needed for the tube to

penetrate each 6-inch increment is recorded. The sum of the number of blows required for the second plus third 6-inch increments of penetration is termed the "standard penetration resistance" or the "N-value". If 50 blows are insufficient to advance it through a 6-inch interval, the penetration after 50 blows is recorded. The split spoon sampler is decontaminated after each sample is collected. Hollow-stem auger drilling methods are quicker and more cost effective for drilling and installing relatively shallow wells, compared to sonic drilling methods, and collected blow counts can provide valuable information regarding the physical soil properties. Hollow-stem auger drilling rigs are more readily available than sonic drilling rigs in the region, and come in a wide variety of sizes and specifications for drilling on sites with access or safety limitations (low overhead clearance, ground stability concerns, etc.).

Soils from sonic/hollow-stem auger borings will be logged and screened for evidence of contamination, and samples will be collected for chemical analysis, as described in Section A.2.1.4. Following sample collection and field logging each boring will either be backfilled with bentonite chips/hydrated bentonite, placed from the total depth of each boring to the ground surface, or completed as a groundwater monitoring well. For borings not completed as monitoring wells, the ground surface will be patched with concrete or asphalt, or left as bare ground, to match the surrounding surface.

A.2.1.3. Soil Classification and Field Screening

A geologist from Aspect will oversee the drilling and excavation activities and prepare a geologic boring or test pit log for each of the explorations completed. The field representative will visually classify the soils in accordance with ASTM International, Inc (ASTM) Method D2488 and record soil descriptions, field screening results, and other relevant details (e.g., staining, debris, odors, etc.) on the appropriate field form. If samples are collected for chemical analysis, the sample ID and depth will also be recorded on the log.

In addition to soil classification, the field representative will screen the soil using a photoionization detector (PID) to monitor for the presence of volatile organic vapors. The PID will be calibrated daily in the field using the manufacturer’s calibration standard (100 ppm isobutylene gas). A calibration test, referred to as a “bump test”, will be performed as necessary in the field using the calibration gas to check that the PID remains properly calibrated throughout the day.

Soil samples will be field screened for presence of petroleum using visual examination and water sheen tests. Water sheen tests are conducted by placing a small aliquot of soil (about a tablespoon) into a cup or tray containing water, gently shaking, and watching for presence of petroleum sheen. Care will be taken to differentiate sheen created by petroleum (iridescent swirl of colors, does coalesce after being disturbed) versus other organic matter (angular “waxy” sheets”, do not coalesce after being disturbed), and recording the information appropriately. The perceived magnitude of petroleum sheen (slight, moderate, heavy) will be recorded with corresponding odors if observed.

A.2.1.4. Soil Analytical Approach

The soil samples collected to meet the objectives of the RI will be analyzed for the soil COPCs, which consist of the following:

- Gasoline-range petroleum hydrocarbons by NWTPH-Gx
- Total diesel-range extended petroleum hydrocarbons (TPH-D+O) by NWTPH-Dx
- Semivolatile organic compounds, including polycyclic aromatic hydrocarbons (PAHs) and pentachlorophenol, by EPA 8270D, with low-level carcinogenic PAH (cPAH) analysis by EPA 8270D-SIM
- Metals by EPA 200.8/6020A
- Polychlorinated biphenyls by EPA Method 8082
- VOCs by EPA Method 8260C

The soil analytical approach will generally consist of the following:

At least one sample of fill and native soil will be collected from each exploration, including test pits, soil borings, and monitoring wells, unless specified otherwise in Section 7.4. Soil samples will be collected for laboratory analysis from intervals where field screening suggests the presence of contaminants. If there are no field screening results to suggest the presence of contaminants in fill or native soil, soil samples will be collected from discrete intervals that are determined in the field to be representative of the material warranting data to meet the objectives of the RI. For example:

- If fill consists of reworked native soil or fill soil with no debris, soil samples will be collected from the approximate mid-point of the reworked native/fill soil and approximately 1-foot below the fill-native contact.
- If fill consists of mixed fill that includes soil and debris, soil samples will be collected from a depth of approximately 1-foot beneath the debris horizon and 1-foot below the fill-native contact.
- If fill contains woody debris and/or other debris that sits directly on native soil, soil samples will be collected approximately 1-foot above and 1-foot below the fill-native contact.

A.2.1.5. Soil Sample Identification

Each soil sample collected during the RI will be assigned a unique sample identification number. Soil explorations that are not completed as monitoring wells will consist of either ‘AB’ for Aspect boring or “TP” for test pit, followed by a sequential sample number. The borings advanced for the construction and installation of monitoring wells will be identified with a sequential well identification number, beginning with MW-12. Soil samples collected from borings will be assigned a unique sample identification number including the boring number (AB-X, TP-X, or MW-X) and the depth from which the sample was collected. For example, the soil sample collected from boring AB-20 at a depth of 7 to 8 feet bgs would be identified as AB20-7-8. Soil samples collected from test pits, where multiple samples may be collected from the same depth interval, will be given a sequential letter identifier. For example, the second soil sample collected from test pit TP-7 at a depth of 7 to 8 feet bgs would be identified as TP7b-7-8.

A.2.2. Monitoring Well Installation and Development

Monitoring wells will be constructed by a state-licensed, resource protection well driller and in accordance with Chapter 173-160 WAC. All monitoring wells will be constructed with 2-inch-diameter threaded Schedule 40 PVC slotted screen and blank casing. Well screens will be 0.010-inch (10 slot) slotted screen. An artificial filter pack consisting of 10/20 silica sand will be placed around the well screen, and an annular seal consisting of bentonite chips will be placed above the filter pack. A concrete surface seal will be set at grade for each new monitoring well. The finished monitoring wells will be protected with a steel flush-mount monument, or steel above-ground monument, embedded in the concrete surface seal.

An Aspect field geologist will oversee and document installation of each monitoring well, including completion of an As-Built Well Completion Diagram. Well casing diameter, screen length and total depth are dependent on the purpose of the well and the lithology observed during the investigation activities. The general design and construction of the wells will follow Standard Practice for Design and Installation of Ground Water Monitoring Wells in Aquifers, ASTM Standard D5092 (ASTM, 2010), and Minimum Standards for Construction and Maintenance of Wells, Chapter 173-160 WAC (WAC, 2008).

Following installation, each new monitoring well will be developed to remove fine-grained material from inside the well casing and filter pack to the extent practical, and to improve hydraulic communication between the well screen and the surrounding water-bearing formation. Depth to water will be measured at start and end of development. The wells will be developed using an inertial pump and surge block by performing surge and pump cycles until the water is substantially clear. Surging over the length of the screened interval will be performed for a set period or a minimum of 10 surges. The well will then be pumped until the water clears significantly. These surge and pump cycles will be repeated until the water is substantially clear shortly after the start of pumping or until a maximum of 15 casing volumes of water has been removed

A.2.3. Groundwater Monitoring and Sampling

An initial round of groundwater monitoring and sampling will be conducted at the existing monitoring wells on the Subject Property. Prior to sampling, depth-to-groundwater measurements will be taken in each of the 11 existing monitoring wells (MW-1 through MW-11) using an electric well sounder, graduated to 0.01 foot. Groundwater samples will be collected and handled in accordance with the procedures described below:

- The locking well cap will be removed, and the well will be allowed to equilibrate with the atmospheric pressure for a minimum of 15 minutes prior to measuring the depth to groundwater.
- The depth-to-groundwater will be measured from the surveyed location on the top of the monitoring well casing to the nearest 0.01 foot using an electronic water

level meter. The depth to the bottom of the monitoring well will also be measured to evaluate siltation of the monitoring well. The water level indicator will be decontaminated between each monitoring well.

- Each monitoring well will be purged at a flow rate between 0.1 and 0.5 liters per minute (Puls and Barcelona, 1996) using a peristaltic pump and dedicated low-density polyethylene (LDPE) tubing. The tubing intake will be placed approximately at the center of the saturated section of well screen.
- During purging, field parameters [temperature, pH, specific conductance, oxidation-reduction potential (ORP), turbidity, and dissolved oxygen (DO)] will be monitored using a water quality meter and flow-through cell, or equivalent. These field parameters will be recorded at 3- to 5-minute intervals throughout well purging until they stabilize. The flow rate of the pump must be able to "turn over" at least one flow-through-cell volume between field parameter measurements. The field parameters are considered stable once three consecutive readings are within ± 3% for temperature, ± 0.1 for pH, ± 3% for specific conductance, ± 10 millivolt (mV) for ORP, ± 10% for turbidity [or three consecutive measurements less than 5 Nephelometric Turbidity Units (NTU)], and ± 10 % for DO [or three consecutive measurements below 0.5 milligrams per liter (mg/L)]. Well stabilization has been achieved once all six parameters are stable for three successive readings. However, no more than three well-casing volumes will be purged prior to groundwater sample collection.
- Samples with a field-measured specific electrical conductance greater than 1,000 microsiemens per centimeter (µS/cm) or turbidity greater than 25 NTU will be denoted as such on the chain-of-custody (COC) form, so that the laboratory can employ appropriate sample preparation techniques to avoid analytical interferences for specific analyses, if appropriate (refer to Sections A3.3.2 and A3.3.3).
- If the monitoring well is completely dewatered during purging, samples will be collected when sufficient recharge has occurred to allow filling of all sample containers.
- Once purging is complete, the groundwater samples will be collected directly into laboratory-supplied containers using the same low-flow rate. Samples for dissolved metals analyses will be filtered using an inline 0.45-micrometer (µm) filter; at least 0.5 liter of water will be purged through the filter prior to sample collection.
- Quality control groundwater samples (e.g., field duplicates and trip blanks) will be collected at the respective frequencies prescribed in Section A3.4.1.
- Following sampling, the wells cap and monuments will be secured. Any damaged or defective well caps or monuments will be noted and scheduled for replacement, if necessary.

A.2.3.1. Groundwater Analytical Approach

Groundwater samples collected during the initial groundwater monitoring and sampling event will be submitted for laboratory analysis of the groundwater constituents of potential concern (COPCs) for the RI, consisting of:

- Gasoline-range petroleum hydrocarbons by NWTPH-Gx
- Total diesel-range extended petroleum hydrocarbons (TPH-D+O) by NWTPH-Dx, both with and without silica gel cleanup
- Semivolatile organic compounds, including polycyclic aromatic hydrocarbons (PAHs) and pentachlorophenol, by EPA 8270D, with low-level carcinogenic PAH (cPAH) analysis by EPA 8270D-SIM
- Total and dissolved metals by EPA 200.8/6020A
- Polychlorinated biphenyls by EPA Method 8082
- Volatile organic compounds (VOCs) by EPA Method 8260C
-

Other constituent and geochemical indicator parameters for groundwater, consisting of:

- Extractable and volatile petroleum hydrocarbons (EPH/VPH) by NW-EPH/VPH
- Total and dissolved organic carbon by EPA 9060/SM5310B
- Nitrate and sulfate by EPA 300.0
- Methane by RSK-175
- Alkalinity by SM 2320B

The RI will include at least four consecutive quarters of groundwater monitoring and sampling at all Subject Property monitoring wells. The groundwater analytical approach for subsequent sampling events will be determined based on the results of the first groundwater sampling event to be completed after the new monitoring wells are installed. The scope and frequency of subsequent groundwater monitoring will be determined in consultation with Ecology.

A.2.3.2. Groundwater Sample Identification

Each sample collected during a groundwater monitoring and sampling event will be assigned a unique sample identification number. The sample identification number will include the well number and the date the sample was collected in YYYY-MM-DD format. For example, a groundwater sample collected from monitoring well MW-1 collected on May 1, 2023, will be labeled as MW-1-2023-05-01. Sample identification labels will be filled out and affixed to appropriate laboratory-supplied containers immediately before sample collection. The labels will be filled out in indelible ink and will include the date, time sampled, sample identification number, project name, project number, sampler's initials, and analyte preservative(s) if any.

A.2.4. Methane Investigation

An evaluation for methane will be conducted using three existing groundwater monitoring wells on the Subject Property and four new gas monitoring probes. The methane investigation will occur concurrently with the initial groundwater monitoring and sampling events. Installation and monitoring details are described in the following sections.

A.2.4.1. Modification of Existing Monitoring Wells

Well caps with gas monitoring ports are required for gas sampling from existing monitoring wells with standard construction details. The well caps will be fabricated from a 2-inch PVC slip cap with a threaded hole drilled in the top for attachment of a valved barb. The gas sampling well caps must be installed at least 1 week prior to baseline sampling to allow sufficient time for equilibrium.

A.2.4.2. Gas Monitoring Probe Installation

Like the soil investigation, the gas probes will be installed using a combination of direct-push and/or either sonic or hollow-stem auger drilling methods, depending on what the driller deems appropriate. Soil samples will be collected continuously from the ground surface to the total depth of each boring for observation, lithologic description, and field screening (see section A.2.1.3 for detailed procedures).

Soil samples and cuttings will be field-screened for the presence of volatile organic vapors using a PID). The PID is designed to detect and measure VOC vapors in air, but it does not detect methane. The VOC concentrations will be used to monitor worker health and safety during drilling, and to indicate if VOCs appear to be present in the soil encountered during drilling (measurements will indicate a potential for contamination that may be investigated further). Aspect personnel will be equipped with personal breathing space monitors (aka 4-gas meters) capable of measuring ambient oxygen, carbon monoxide, and combustible gases (methane, measured as lower explosive limit [LEL]). A portable gas meter (Landtec GEM series 5000 or equivalent) will be used to monitor concentrations of methane, carbon dioxide, oxygen, and hydrogen sulfide at the bore hole and within the work zone. Methane, carbon dioxide, oxygen, and hydrogen sulfide measurements will be taken from the top of the drill casing after each sample run, and periodic ambient air measurements will be recorded as part of Health and Safety monitoring.

In the case of elevated levels of methane or hydrogen sulfide, drilling will cease and a brush fan, provided by the drilling contractor, will be used to clear the immediate area of dangerous gases. Drilling will resume after mitigation plans approved by Aspect's Health and Safety officer are put into place to ensure safe drilling operations.

Pertinent geologic and hydrogeologic subsurface conditions, PID, methane, carbon dioxide, oxygen, and hydrogen sulfide readings will be recorded on field forms (Attachment A). Field calibration of equipment will be recorded in field notes and retained along with any vendor calibration record

Following drilling, each gas monitoring probe will be constructed with a 3/4-inch diameter Schedule 40 PVC casing, a pre-fabricated PVC screen with 0.010-inch

continuous slots (CSS), and a sand filter pack. The top of the screened interval will be installed above the seasonal high groundwater level as indicated by the lithology during drilling. Once the casing is set, the boring will be backfilled with sand to 3 feet above the top of the screened interval to form the filter pack for the monitoring probe. A minimum 3-foot well seal will be installed above the filter pack using hydrated bentonite chips.

To allow for monitoring, each probe will be fitted with a valved barb or quick connect fitting supplied and installed by Aspect upon completion of the probe. The valve will be closed to prevent unintended discharge of subsurface vapors to the atmosphere. Aspect is prepared to install either flush mount or above ground protective monuments based on constraints identified during a pre-installation site visit to mark the drilling locations. If the probe is completed below ground, a 10-inch steel, flush-mount monument will be installed in the concrete surface seal. Alternatively, if the probe is completed above ground, a 4-inch schedule 80 PVC protective casing will be installed. The driller will install bollards as specified by WAC 173-160 for the above ground completion.

Following drilling, the ground surface and top of casing elevations will be surveyed for each of the completed monitoring probes. The survey data will be used to prepare updated site figures showing the as-constructed locations for each of the probes.

A.2.4.3. Methane Monitoring

Each gas monitoring event will be scheduled to evaluate conditions during falling barometric pressure. Baseline monitoring will be conducted at each new monitoring probe at the time of completion. During baseline monitoring, methane, carbon dioxide, and oxygen concentrations, static probe pressure, and barometric pressure will be measured at each point using a portable gas meter. The probe casing will be purged with the portable gas meter until concentrations stabilize or until a minimum of three casing volumes have been purged prior to recording. An intrinsically safe SKC pump can be used in addition to the portable gas meter to achieve higher purge rates for the existing monitoring wells, which are 2-inch-diameter and have a larger casing volume. Final measurements will be recorded on a Gas Monitoring Record field sheet (Appendix X), using the data recording features of the portable LFG monitor. Results of baseline monitoring will be reported with results of routine monitoring.

A.2.5.Wetland Sampling

A.2.5.1. Sediment Sampling

Wetland sediments will be collected from 12 sample stations. At each station, hand tools will be used to remove sediment from the ground surface to a total depth of 8 inches below ground surface. Discrete sediment samples will be collected from 0 to 4-inches and 4- to 8-inches from each location. The preliminary wetland sediment sample stations are depicted on Figure 2.

The sediment samples will be submitted for laboratory analysis of the sediment COPCs, in addition to analysis of total solids, total organic carbon, and grain size.

Sediment samples will be assigned a unique sample identification number that consists of a prefix of ‘SED,’ the wetland identification, a sequential sample location number, and

the six-digit date on which the sample was collected. For example, the second sediment sample collected from wetland B on March 17, 2023, would be labeled as: SED-B-02-20230317.

A.2.5.2. Surface Water Sampling

Surface water samples will be collected from the Subject Property wetlands A through D. An Aspect field representative will collect two surface water grab samples using direct fill sampling techniques. Where feasible, samples will be collected at least 6 inches below the surface of the water using a discrete interval sampler. The discrete interval sampler will be cleaned between samples by rinsing with distilled water. Surface water samples will be submitted for laboratory analysis of the surface water COPCs.

Surface water samples will be assigned a unique sample identification number that consists of a prefix of 'SW', the wetland identification, and the six-digit date on which the sample was collected. For example, the surface water sample collected from wetland B on March 17, 2023 would be labeled as: SW-B-20230317.

A.2.6. Sample Custody and Field Documentation

A.2.6.1. Sample Custody

Upon collection, soil, groundwater and sediment samples will be placed upright in a cooler. Ice or blue ice will be placed in each cooler to meet sample preservation requirements. Inert cushioning material will be placed in the remaining space surrounding the sample containers, as needed, to limit movement during shipping. If the sample coolers/containers are being shipped, not hand delivered, to the laboratory, the COC form will be placed in a waterproof bag taped to the inside lid of the cooler/container for shipment.

After collection, samples will be maintained in Aspect's custody until formally transferred to the analytical laboratory. For purposes of this work, custody of the samples will be defined as follows:

- In plain view of the field representatives
- Inside a cooler that is in plain view of the field representative, or
- Inside any locked space such as a cooler, locker, car, or truck to which the field representative has the only immediately available key(s)

A COC record provided by the laboratory will be initiated at the time of sampling for all samples collected. The record will be signed by the field representative and others who subsequently take custody of the sample. Couriers or other professional shipping representatives are not required to sign the COC form; however, shipping receipts will be collected and maintained as a part of custody documentation in project files. A copy of the COC form with appropriate signatures will be kept by Aspect's project manager.

Upon sample receipt, the laboratory will fill out a cooler receipt form to document sample delivery conditions. A designated sample custodian will accept custody of the shipped samples and will verify that the COC form matches the samples received. The

laboratory will notify the Aspect project manager, as soon as possible, of any issues noted with the sample shipment or custody.

A.2.6.2. Field Documentation

While conducting field work, the field representative will document pertinent observations and events, specific to each activity, on field forms (e.g., boring log form, as-built well completion form, well development form, groundwater sampling form, etc.) and/or in a field notebook, and, when warranted, provide photographic documentation of specific sampling efforts. Field notes will include a description of the field activity, sample descriptions, and associated details such as the date, time, and field conditions.

A.2.6.3. Location Positioning

The horizontal coordinates and elevations of any new monitoring wells will be surveyed by a licensed surveyor relative to Washington State Plane coordinates (horizontal) and NAVD88 (vertical). Monitoring well top-of-casing and ground surface elevations will be surveyed to the nearest 0.01 foot, and horizontal coordinates to the nearest 0.1 foot, or better. Each well will be surveyed at the marked spot on the top of the PVC well casing from which depth-to-water measurements are collected.

A.3. Quality Assurance Project Plan

This QAPP identifies quality assurance and quality control (QA/QC) procedures and criteria required to ensure that data collected during the RI are of known quality and are acceptable to achieve project objectives. Specific protocols and criteria are also set forth in this QAPP for data quality evaluation, upon the completion of data collection, to determine the level of completeness and usability of the data. It is the responsibility of the project personnel performing or overseeing the sampling and analysis activities to adhere to the requirements of the QAPP.

A.3.1. Purpose of the QAPP

As stated in Ecology Guidelines for Preparation of Quality Assurance Project Plans for Environmental Studies (Ecology Publication No. 04-03-030, December 2016), specific goals of this QAPP are as follows:

- Focus project manager and project team to factors affecting data quality during the planning stage of the project
- Facilitate communication among field, laboratory, and management staff as the project progresses
- Document the planning, implementation, and assessment procedures for QA/QC activities for the investigation
- Ensure that the DQOs are achieved
- Provide a record of the project to facilitate final report preparation

The DQOs for the project include both qualitative and quantitative objectives, which define the appropriate type of data, and specify the tolerable levels of potential decision

errors that will be used as a basis for establishing the quality and quantity of data needed to support the environmental assessment. To ensure that the DQOs are achieved, this QAPP details aspects of data collection, including analytical methods, QA/QC procedures, and data quality reviews. This QAPP describes both quantitative and qualitative measures of data to ensure that the DQOs are achieved. DQOs dictate data collection rationale, sampling and analysis designs that are presented in the main body of the RI Work Plan, and sample collection procedures that are presented in the FSP (Section A.2 of this Appendix).

A.3.2. Analytical Methods and Reporting Limits

Analytical methodologies applied to the analyses of samples collected during the RI are in accordance with the following documents:

- EPA SW Methods: EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, Third Edition, December 1996.
- Standard Methods for the Examination of Water and Wastewater, American Public Health Association, 20th Edition, 1995.
- Ecology Analytical Methods for Petroleum Hydrocarbons. Publication No. ECY 97-602, June 1997.

Table A-1 lists the laboratory analytical methods for soil, groundwater, surface water, and sediment analyses to be performed during the RI, along with samples containers, preservation, and analytical holding times for each analysis.

A.3.2.1. Detection Limit and Method

The detection limit (DL) is the minimum concentration of a compound that can be measured and reported with a 99 percent confidence that the analyte concentration is greater than zero. DLs are established by the laboratory using prepared samples, not samples of environmental media.

The level of quantitation (LOQ) is defined as the lowest concentration at which a chemical can be accurately and reproducibly quantified, within specified limits of precision and accuracy, for a given environmental sample. The LOQ can vary from sample to sample depending on sample size, sample dilution, matrix interferences, moisture content, and other sample-specific conditions. As a minimum requirement for organic analyses, the LOQ should be equivalent to or greater than the concentration of the lowest calibration standard in the initial calibration curve. The expected DLs and LOQs are summarized in Tables A-2 and A-3 for soil/sediment and water samples, respectively.

A.3.3. Data Quality Objectives

DQOs, including the Measurement Quality Indicators (MQIs)—precision, accuracy, representativeness, comparability, completeness, and sensitivity—and sample-specific LOQs are dictated by the data quality objectives, project requirements, and intended uses of the data. For this project, the analytical data must be of sufficient technical quality to determine whether contaminants are present and, if present, whether their concentrations

are greater than or less than applicable screening criteria based on protection of human health and the environment.

The quality of data generated through this RI will be assessed against the MQIs set forth in this QAPP. Specific QC parameters associated with each of the MQIs are summarized in Table A-4. Specific MQI goals and evaluation criteria (i.e., DLs, LOQs, percent recovery (%R) for accuracy measurements, relative percent difference (RPD) for precision measurements, are defined in Tables A-2 and A-3. Definitions of these parameters and the applicable QC procedures are presented below.

A.3.3.1. Precision

Precision measures the reproducibility of measurements under a given set of conditions. Specifically, it is a quantitative measure of the variability of a group of measurements compared with their average values. Analytical precision is measured through matrix spike/matrix spike duplicate (MS/MSD) samples and laboratory control samples/laboratory control sample duplicate (LCS/LCSD) for organic analysis and through laboratory duplicate samples for inorganic analyses.

Analytical precision is quantitatively expressed as the RPD between the LCS/LCSD, MS/MSD, or laboratory duplicate pairs and is calculated with the following formula:

$$RPD\,(\%) = 100 \times \frac{|S - D|}{(S + D)/2}$$

where:
S = analyte concentration in sample
D = analyte concentration in duplicate sample

Analytical precision measurements will be carried out at a minimum frequency of 1 per 20 samples for each matrix sampled, or 1 per laboratory analysis group. Laboratory precision will be evaluated against laboratory quantitative RPD performance criteria as defined in Tables A-2 and A-3 for specific analytical methods and sample matrices. If the control criteria are not met, the laboratory will supply a justification of why the limits were exceeded and implement the appropriate corrective actions. The RPD will be evaluated during data review and validation. The data reviewer will note deviations from the specified limits and will comment on the effect of the deviations on reported data.

A.3.3.2. Accuracy

Accuracy measures the closeness of the measured value to the true value. The accuracy of chemical test results is assessed by "spiking" samples with known standards (surrogates, blank spikes, or matrix spikes) and establishing the average recovery. Accuracy is quantified as the %R. The closer the %R is to 100 percent, the more accurate the data.

Surrogate recovery will be calculated as follows:

$$\text{Recovery}(\%) = \frac{MC}{SC} \times 100$$

where:

SC = spiked concentration
MC = measured concentration

MS percent recovery will be calculated as follows:

$$\text{Recovery}(\%) = \frac{MC - USC}{SC} \times 100$$

where:

SC = spiked concentration
MC = measured concentration
USC = unspiked sample concentration

Accuracy measurements on MS samples will be carried out at a minimum frequency of 1 in 20 samples per matrix analyzed. Blank spikes will also be analyzed at a minimum frequency of 1 in 20 samples (not including QC samples) per matrix analyzed. Surrogate recoveries for organic compounds will be determined for each sample analyzed for respective compounds. Laboratory accuracy will be evaluated against the performance criteria defined in Table A-2 and A-3. If the control criteria are not met, the laboratory will supply a justification of why the limits were exceeded and implement the appropriate corrective actions. Percent recoveries will be evaluated during data review and validation, and the data reviewer will comment on the effect of the deviations on the reported data.

A.3.3.3. Representativeness

Representativeness measures how closely the measured results reflect the actual concentration or distribution of the chemical compounds in the matrix sampled. The SAP sampling techniques and sample handling protocols (e.g., homogenizing, storage, preservation, and use of duplicates and blanks) have been developed to ensure representative samples. Only representative data will be used in the RI. The RI objectives and approach for sampling is described in Section 7 of the RI Work Plan. The RI field sampling procedures are described in the SAP (Section A.2) of this appendix.

The representativeness of a data point is determined by assessing the integrity of the sample upon receipt at the laboratory (e.g., consistency of sample ID and collection date/time between container labels vs. COC forms, breakage/leakage, cooler temperature, preservation, headspace for VOA containers, etc.); compliance of method required sample preparation, and analysis holding times; the conditions of blanks (trip blank, rinsate blank, field blank, method/preparation blank, and calibration blank) associated with the sample; and the overall consistency of the results within a field duplicate pair.

A.3.3.4. Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. This goal will be achieved using standard techniques to collect samples, EPA-approved standard methods to analyze samples, and consistent

units to report analytical results. Data comparability also depends on data quality. Data of unknown quality cannot be compared.

A.3.3.5. Completeness

Completeness is defined as the percentage of measurements made that are judged to be valid. Results will be considered valid if the precision, accuracy, and representativeness objectives are met, and if RLs are sufficient for the intended uses of the data. Completeness is calculated as follows:

$$Completeness\ (\%) = \frac{V}{P} \times 100$$

where:

V = number of valid measurements
P = number of measurements taken

Valid and invalid data (i.e., data qualified with the R flag [rejected]) will be identified during data validation. The target completeness goal for this project is 95 percent.

A.3.3.6. Sensitivity

Sensitivity depicts the level of ability an analytical system (i.e., sample preparation and instrumental analysis) of detecting a target component in a given sample matrix with a defined level of confidence. Factors affecting the sensitivity of an analytical system include: analytical system background (e.g., laboratory artifact or method blank contamination), sample matrix (e.g., mass spectrometry ion ratio change, coelution of peaks, or baseline elevation), and instrument instability.

A.3.4. Quality Control Procedures

Field and laboratory QC procedures are outlined below.

A.3.4.1. Field Quality Control

Beyond use of standard sampling protocols defined in the SAP, field QC procedures include maintaining the field instrumentation used. Field instruments (e.g., PID for evaluating presence of VOCs in soil samples, multi-gas meter for methane gas monitoring, and the YSI multimeter for measuring field parameters during groundwater sampling) are maintained and calibrated regularly prior to use, in accordance with manufacturer recommendations.

In addition, field QC samples will be collected and submitted for analyses to monitor the precision and accuracy associated with field procedures. Field QC samples to be collected and analyzed for this RI include field duplicates, trip blanks, and equipment rinsate blanks. The definition and sampling requirements for field QC samples are presented below.

A.3.4.1.1. Blind Field Duplicates

Blind field duplicate samples are used to check for sampling and analysis reproducibility; however, the field duplicate sample results include variability introduced during both field sampling and laboratory preparation and analysis, and EPA data validation guidance provides no specific evaluation criteria for field duplicate samples. Advisory evaluation criteria are set forth at 35 percent for RPD (if both results are greater than five times the RL) and two times the LOQs for concentration difference (if either of the result is less than five times the LOQ) between the original and field duplicate results.

Field duplicates will be submitted "blind" to the laboratory as discrete samples (i.e., given unique sample identifiers to keep the duplicate identity unknown to the laboratory), but will be clearly identified in the field log. Field duplicate samples will be collected at a frequency of 5 percent (1 per 20) of the field samples for each matrix and analytical method, but not less than one duplicate per sampling event per matrix.

If a given soil sample depth interval lacks sufficient volume (recovery) to supply material for a planned analysis and its field duplicate analysis, the field duplicate aliquot will be collected for that analysis from another depth interval in that same location if practical.

A.3.4.1.2. Trip Blank

Trip blank samples will be used to monitor possible VOC cross contamination occurring during sample transport. Trip blank samples are prepared and supplied by the laboratory using organic-free reagent-grade water into a VOC vial prior to the collection of field samples. The trip blank sample vials are placed with and accompany the VOC samples through the entire transporting process. One trip blank will be collected for each soil sampling round and each groundwater sampling round, where VOC analyses are conducted.

In case a target compound is present in a trip blank, results for all samples shipped with this trip blank will be evaluated and data qualified accordingly if determined that the results are affected.

A.3.4.1.3. Equipment Rinsate Blank

Equipment rinsate blanks are collected to determine the potential of cross-contamination introduced by soil sampling equipment that is used between samples. Groundwater sampling is conducted using dedicated equipment; therefore, rinsate blanks are not needed for groundwater sampling QC. The deionized water used for soil sampling equipment decontamination is rinsed through the decontaminated sampling equipment and collected into adequate sample containers for analysis of the preliminary COPCs. The blank is then processed, analyzed, and reported as a regular field sample. **One rinsate blank will be conducted for each round of soil sampling.** The rinsate blank sampled will be labeled with a "RB-" prefix and the date it is collected (e.g., RB-20220501).

A.3.4.2. Laboratory Quality Control

The laboratories' analytical procedures must meet requirements specified in the respective analytical methods or approved laboratory standard operating procedures (SOPs), e.g., instrument performance check, initial calibration, calibration check, blanks,

surrogate spikes, internal standards, and/or labeled compound spikes. Specific laboratory QC analyses required for this project will consist of the following at a minimum:

- Instrument tuning, instrument initial calibration, and calibration verification analyses as required in the analytical methods and the laboratory standard operating procedures (SOPs).
- Laboratory and/or instrument method blank measurements at a minimum frequency of 5 percent (1 per 20 samples) or in accordance with method requirements, whichever is more frequent.
- Accuracy and precision measurements at a minimum frequency of 5 percent (1 per 20 samples) or in accordance with method requirements, whichever is more frequent. In cases where a pair of MS/MSD or MS/laboratory duplicate analyses are not performed on a project sample, a set of LCS/LCSD analyses will be performed to provide sufficient measures for analytical precision and accuracy evaluation.

The laboratory's QA officers are responsible for ensuring that the laboratory implements the internal QC and QA procedures detailed in their Quality Assurance Manual.

A.3.5. Corrective Actions

If routine QC audits by the laboratory result in detection of unacceptable conditions or data, actions specified in the laboratory SOPs will be taken. Specific corrective actions are outlined in each SOP used and can include the following:

- Identifying the source of the violation
- Reanalyzing samples if holding-time criteria permit
- Resampling and analyzing
- Evaluating and amending sampling and analytical procedures
- Accepting, but qualifying data to indicate the level of uncertainty

If unacceptable conditions occur, the laboratory will contact Aspect's project manager to discuss the issues and determine the appropriate corrective action. Corrective actions taken by the laboratory during analysis of samples for this project will be documented by the laboratory in the case narrative associated with the affected samples.

In addition, the project data quality manager will review the laboratory data generated for this investigation to ensure that project DQOs are met. If the review indicates that non-conformances in the data have resulted from field sampling or documentation procedures or laboratory analytical or documentation procedures, the impact of those nonconformances on the overall project data usability will be assessed. Appropriate actions, including resampling and/or reanalysis of samples may be recommended to the project manager to achieve project objectives.

A.3.6. Data Reduction, Quality Review, and Reporting

All data will undergo a QA/QC evaluation at the laboratory, which will then be reviewed by the Aspect database manager and the project data quality manager. Initial data reduction, evaluation, and reporting at the laboratory will be carried out in full compliance with the method requirement and laboratory SOPs. The laboratory internal review will include verification (for correctness and completeness) of electronic data deliverable (EDD) accompanied with each laboratory report. The Aspect database manager will verify the completeness and correctness of all laboratory deliverables (i.e., laboratory report and EDDs) before releasing the deliverables for data validation.

A.3.6.1. Minimum Data Reporting Requirements

The following sections specify general and specific requirements for analytical data reporting to provide sufficient deliverables for project documentation and data quality assessment.

General Requirements

The following requirements apply to laboratory reports for all types of analyses:

- A laboratory report will include a cover page signed by the laboratory director, the laboratory QA officer, or his/her designee to certify the eligibility of the reported contents and the conformance with applicable analytical methodology.
- Definitions of abbreviations, data flags, and data qualifiers used in the report.
- Cross reference of field sample names and laboratory sample identity for all samples in the sample delivery group (SDG).
- Completed COC document signed and dated by parties of acquiring and receiving.
- Completed sample receipt document with record of cooler temperature and sample conditions upon receipt at the laboratory. Anomalies such as inadequate sample preservation, inconsistent bottle counts, and sample container breakage, and communication record and corrective actions in response to the anomalies will be documented and incorporated in the sample receipt document. The document will be initialed and dated by personnel that complete the document.
- Case narrative that addresses any anomalies or QC outliers in relation to sample receiving, sample preparation, and sample analysis on samples in the SDG. The narrative will be presented separately for each analytical method and each sample matrix.
- All pages in the report are to be paginated. Any insertion of pages after the laboratory report is issued will be paginated with starting page number suffixed with letters (e.g., pages inserted between pages 134 and 135 should be paginated as 134A, 134B, etc.)
- Any resubmitted or revised report pages will be submitted to Aspect with a cover page stating the reason(s) and scope of resubmission or revision, and signed by laboratory director, QA officer, or the designee.

Specific Requirements

The following presents specific requirements for laboratory reports:

- Sample results: Sample results will be evaluated and reported down to the DLs. Detections at levels greater than the DLs, but less than the LOQs, will be reported and flagged with "J." Results less than the DLs will be reported at the LOQs and flagged with "U." All soil sample results will be reported on a dry-weight basis. The report pages for sample results (namely Form 1s) will, at minimum, include sample results, LOQs, unit, proper data flags, dates of sample collection, preparation, and analysis, dilution factor, percent moisture (for solid samples), and sample volume (used for analysis).
- Instrument run log: The run log will list, in chronological order, all analytical runs on field samples, QC samples, calibrations, and calibration verification analyses in the SDG with data file name (and/or legible laboratory codes) and analysis date/time for each analytical run.
- Original sample preparation and analyst worksheet: Initialed and dated by analyst and reviewer.
- GC/MS and inductively coupled plasma (ICP)/MS tune report: Including ion abundance ratios and criteria for all required ions.
- Initial calibration summary: Including data file name for each calibration standard file; response factor (RF) or calibration factor (CF) for each calibration standard and each target and surrogate compound; average RF or CF, percent relative standard deviation (%RSD), correlation coefficient, or coefficient of determination; and absolute and relative retention times and ion ratios for HRGC/HRMS methods for each target compound and surrogate (labeled) compounds. As applicable and if required by the methods, initial calibrations should be verified with a second-source standard (namely the initial calibration verification [ICV]) at the mid-point concentration of the initial calibration. ICV results should be reported as part of the initial calibration.
- Calibration verification summary: Including true amount, calculated amount, and percent difference (%D), or percent drift ($\%D_f$) as applicable, for target compounds.
- Method blank and calibration blank (as applicable such as metals analyses) results.
- LCS and LCSD (if matrix spike duplicate analysis is not performed) results with laboratory acceptance criteria for %R and RPD.
- Surrogate spike results with laboratory acceptance criteria for %R.
- MS and MSD results with laboratory acceptance criteria for %R and RPD. In cases where MS/MSD analyses were not performed on a project sample, LCS/LCSD analyses should be performed and reported instead.
- Internal standard (as applicable) results: Internal standard absolute retention times and response areas in field samples, QC analyses, and associated calibration verification analyses.

- Labeled compound (HRGC/HRMS methodology only) results, ion abundance ratios, and recovery.

A.3.7. Data Quality Verification and Validation

Reported analytical results will be qualified by the laboratory to identify QC concerns in accordance with the specifications of the analytical methods. Additional laboratory data qualifiers may be defined and reported by the laboratory to more completely explain QC concerns regarding a particular sample result. All data qualifiers will be defined in the laboratory's narrative reports associated with each case.

A Level 2b data validation will be performed on the data collected as described in the RI Work Plan. In cases where a systematic QC problem is suspected, such as unusual detections of an analyte or consistent outlying results of a QC parameter, a more detailed review, including a Level 4 validation, will be performed on laboratory records pertinent to the concerned analysis to further evaluate the extent of the QC issue and the final data quality and usability. The actual level of validation for each data point will be entered in the electrical database submitted to the Ecology Environmental Information Management system (EIMs). Data validation will be conducted following the guidance below:

- EPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, Office of Superfund Remediation and Technical Innovation, U.S. Environmental Protection Agency, January 2010, EPA 540/R-10/011.
- EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, Office of Superfund Remediation and Technical Innovation, U.S. Environmental Protection Agency, June 2008, EPA-540-R-08-01.

The data validation will examine and verify the following parameters against the method requirements and laboratory control limits specified in Tables A-2 and A-3:

- Sample management and holding times
- Instrument performance check, calibration, and calibration verification
- Laboratory and field blank results
- Detection and reporting limits
- Laboratory replicate results
- MS/MSD results
- LCS and/or standard reference material results
- Field duplicate results
- Surrogate spike recovery (organic analyses only)
- Internal standard recovery (internal calibration methods only)
- Inter-element interference check (ICP analyses only)
- Serial dilution (metals only)

- Labeled compound recovery (isotope dilution methods only)
- Ion ratios for detected compounds (high resolution GC/MS methods only)

Data qualifiers will be assigned based on outcome of the data validation. Data qualifiers are limited to and defined as follows:

- U = The analyte was analyzed for but was determined to be non-detect above the reported sample quantitation limit, or the quantitation limit was raised to the concentration found in the sample due to blank contamination.
- J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ = The analyte was not detected above the reported quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet QC criteria. The presence or absence of the analyte cannot be verified.
- DNR = Do not report from this analysis; the result for this analyte is to be reported from an alternative analysis.

In cases of multiple analyses (such as an undiluted and a diluted analysis) performed on one sample, the optimal result will be determined and only the determined result will be reported for the sample.

The scope and findings of the data validation will be documented and discussed in the Data Validation Report(s). The Data Validation Report(s) will be appended to the RI report.

A.3.8. Preventative Maintenance Procedures and Schedules

Preventative maintenance in the laboratory will be the responsibility of the laboratory personnel and analysts. This maintenance includes routine care and cleaning of instruments and inspection and monitoring of carrier gases, solvents, and glassware used in analyses. Details of the maintenance procedures are addressed in the respective laboratory SOPs.

Precision and accuracy data are examined for trends and excursions beyond control limits to determine evidence of instrument malfunction. Maintenance will be performed when an instrument begins to change as indicated by the degradation of peak resolution, shift in calibration curves, decrease in sensitivity, or failure to meet one or another of the method-specific QC criteria.

Maintenance and calibration of instruments used in the field for sampling (e.g., PID for evaluating presence of VOCs in soil samples and the YSI multimeter for measuring field

parameters during groundwater sampling) will be conducted regularly in accordance with manufacturer recommendations prior to use.

A.3.9. Performance and System Audits

The Aspect project manager has responsibility for reviewing the performance of the laboratory QA program; this review will be achieved through regular contact with the analytical laboratory's project manager. To ensure comparable data, all samples of a given matrix to be analyzed by each specified analytical method will be processed consistently by the same analytical laboratory.

A.3.10. Data and Records Management

Records will be maintained documenting all activities and data related to field sampling and chemical analyses.

A.3.10.1. Field Documentation

Inspection and monitoring results will be documented on field report forms and/or in field notebooks. Adequate records will be maintained for each sample collected. The field representative will document pertinent observations and events specific to each activity and specific to each sample collected and, when warranted, provide photographic documentation of specific sampling efforts. Field notes will include the following:

- Date, time, weather conditions, project location, and sampler's name
- Sample location, sample type, and sample number
- Description of the field activity
- Sample descriptions and sampling method
- Size, type, and quantity of sample containers
- Field equipment used
- Field parameters

Pertinent observations of the sample condition that are worthy of noting in the field documentation include the following:

- Sample color
- Sedimentation or turbidity
- Oil or sheen
- Separate phase liquids
- Odor
- Effervescence
- Beginning canister vacuum (soil gas samples only)
- Ending canister vacuum (soil gas samples only)

Other information to be included in the field notebook includes the following:

- Reason for sampling
- Problems encountered due to unusual conditions
- Communications with Ecology, City staff, laboratory, or field staff

A.3.10.2. Analytical Data Management

Raw data received from the analytical laboratory will be reviewed, entered into a computerized database, and verified for consistency and correctness. The database will be updated based on data review and independent validation, if necessary.

The following field data will be included in the database:

- Sample location coordinates
- Sample type (i.e., groundwater or soil)
- Soil or groundwater sampling depth interval

Information regarding whether concentrations represent total phase (unfiltered samples) or dissolved phase (filtered samples) will be compiled and stored in the database. Data will be submitted to Ecology's Environmental Information Management (EIM) database once data have been reviewed and validated.

A.4. References for Appendix A

ASTM International, Inc. (ASTM) D2488-09a, 2009, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), ASTM International, West Conshohocken, PA, 2009, www.astm.org.

Puls, R.W. and M.J. Barcelona, 1996 (Rev. 2017), Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures, EPA Ground Water Issue, EPA/540/S-95/504.

US Environmental Protection Agency (EPA), 2008, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, Office of Superfund Remediation and Technical Innovation, U.S. Environmental Protection Agency, June 2008, EPA-540-R-08-01.

US Environmental Protection Agency (EPA), 2010, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, Office of Superfund Remediation and Technical Innovation, U.S. Environmental Protection Agency, January 2010, EPA 540/R-10/011.

Washington State Department of Ecology (Ecology) 2016, Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies, Publication No. 04-03-030, December 2016.

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TABLES

Table A-1. Analytical Methods, Sample Containers, Preservation, and Holding Times

Project No. 210507, 2200 Cooper Point Road NW, Olympia, Washington

Sample Matrix	Analytical Parameter	Analytical Method	Sample Container	No. Containers	Preservation Requirements	Holding Time
Soil	Petroleum hydrocarbons, diesel- and oil-range	NWTPH-Dx	8 ounce glass jar	1	4°C ±2°C	14 days for extraction; 40 days for analysis
	Petroleum hydrocarbons, gasoline-range	NWTPH-Gx	8 ounce jar, 3 40-ml VOA vials	4	4°C ±2°C, Freeze within 48 hours to <-7°C	14 days for extraction; 40 days for analysis
	Metals	EPA 200.8/6020A/7471A	4 ounce glass jar	1	4°C ±2°C	6 months, Hg-28 days
	Polychlorinated Biphenyls	EPA 8082	8 ounce glass jar	1	4°C ±2°C	14 days for extraction; 40 days for analysis
	Pentachlorphenol	EPA 8270D	8 ounce glass jar	1	4°C ±2°C	14 days for extraction; 40 days for analysis
	Volatile Organic Compounds	EPA 8260C	Method 5035A, 40-ml VOA vials, 2 ounce jar	5	4°C ±2°C, Freeze within 48 hours to <-7°C, Methanol, Sodium Bisulfate	14 days
	Low-level PAHs	Method 8270D-SIM	8 ounce glass jar	1	4°C ±2°C	14 days for extraction; 40 days for analysis
Sediment	Total solids	SM2540G	4 ounce glass jar	1	4°C ±2°C	14 days
	Total organic carbon	PSEP	4 ounce glass jar	1	4°C ±2°C	14 days
	Grain size	PSEP	16 ounce glass or plastic jar	1	4°C ±2°C	none
	Sulfide	PSEP	2 ounce glass jar, no headspace	1	4°C ±2°C	7 days
	Metals	EPA 6020A, 7196A, 7471B	4 ounce glass jar	1	4°C ±2°C	6 months 28 days for Hg
	Semivolatile organic compounds/polychlorinated biphenyls/pesticides	EPA 8270D (with SIM for LL PAHs); EPA 8081	16 ounce glass jar	1	4°C ±2°C	14 days for extraction; 40 days for analysis
	Volatile organic compounds	EPA 8260C	2 ounce glass jar, no headspace	1	4°C ±2°C	14 days
Groundwater/Surface Water	Petroleum hydrocarbons, diesel- and oil-	NWTPH-Dx	500-mL Amber Glass, 40-mL VOA vial	2	4°C ±2°C, HCl	7 days for extraction, 40 days for analysis
	Petroleum hydrocarbons, gasoline-	NWTPH-Gx	40-mL VOA vial	3	4°C ±2°C, HCl	14 days
	Petroleum hydrocarbons, extractable (EPH)	NW-EPH	1-L Amber glass	2	≤6°C, HCl pH<2	14 days for extraction, 40 days for analysis
	Petroleum hydrocarbons, volatile (VPH)	NW-VPH	40-mL VOA vial	3	≤6°C, HCl pH<2	14 days
	Metals, total/dissolved (field filter)	Method 200.7/200.8	500-mL HDPE	1	4°C ±2°C, HNO3 pH < 2 (after filtration)	180 days
	Low-level PAHs	EPA 8270D (w/8270D-SIM for LL PAHs)	500-mL Amber Glass	2	4°C ±2°C	7 days for extraction, 40 days for analysis
	Pentachlorophenol	EPA 8270D	500-mL Amber Glass	2	4°C ±2°C	7 days for extraction, 40 days for analysis
	Polychlorinated biphenyls	EPA 8082	1-L Amber Glass	2	≤6°C	7 days for extraction; 40 days for analysis
	Volatile Organic Compounds	EPA 8260	40-mL VOA Vials	3	4°C ±2°C, 2 with HCl pH < 2, 2 without HCl	14 days for analysis
	Total Organic Carbon	SM5310B/EPA 9060A	205-mL HDPE	1	≤6°C, HCl pH <2	28 days
	Dissolved Organic Carbon	SM5310B	250-mL Amber glass	1	H2SO4 ph<2, ≤6°C, (after filtration)	28 days
	Methane	RSK 175	40-mL VOA vial	3	4°C ±2°C, HCl pH<2	14 days
	Nitrogen as Nitrate	353.2/9056	500-mL HDPE	1	≤6°C	48 hours
	Sulfate	300.0/9056	500-mL HDPE	1	≤6°C	28 days
	Alkalinity	SM 2320B-97	500-mL HDPE	1	≤6°C	14 days

Table A-2. Measurement Quality Objectives for Soil and Sediment Samples

Project No. 210507, 2200 Cooper Point Road NW, Olympia, Washington

Analyte Name	DL[(1)]	LOQ	LCS/LCS %R[(A)]	MS/MSD %R[(A)]	RPD (%)	Surrogate %R[(A)]
Metals by EPA 200.8/6020A (mg/kg)						
Antimony	0.100	0.200	75 - 125	80 - 120	20	n/a
Arsenic	0.250	0.500	75 - 125	80 - 120	20	n/a
Beryllium	0.100	0.200	75 - 125	80 - 120	20	n/a
Cadmium	0.0500	0.100	75 - 125	80 - 120	20	n/a
Chromium	0.250	0.500	75 - 125	80 - 120	20	n/a
Copper	0.250	0.500	75 - 125	80 - 120	20	n/a
Lead	0.0500	0.100	75 - 125	80 - 120	20	n/a
Nickel	0.250	0.500	75 - 125	80 - 120	20	n/a
Selenium	0.250	0.500	75 - 125	80 - 120	20	n/a
Silver	0.100	0.200	75 - 125	80 - 120	20	n/a
Thallium	0.100	0.200	75 - 125	80 - 120	20	n/a
Zinc	2.00	4.00	75 - 125	80 - 120	20	n/a
Mercury by EPA 7471B (mg/kg)						
Mercury	0.0125	0.025	75 - 125	80 - 120	20	n/a
Volatile Organic Compounds (VOCs) by SW8260C (ug/kg)						
1,1,1,2-Tetrachloroethane	0.233	1.00	80 - 120	80 - 120	30	n/a
1,1,1-Trichloroethane	0.226	1.00	78 - 133	78 - 133	30	n/a
1,1,2,2-Tetrachloroethane	0.253	1.00	71 - 120	71 - 120	30	n/a
1,1,2-Trichloroethane	0.286	1.00	77 - 120	77 - 120	30	n/a
1,1,2-Trichlorotrifluoroethane (Freon 113)	0.287	2.00	72 - 142	72 - 142	30	n/a
1,1-Dichloroethane	0.203	1.00	65 - 139	65 - 139	30	n/a
1,1-Dichloroethene	0.336	1.00	73 - 138	73 - 138	30	n/a
1,2,3-Trichlorobenzene	0.305	5.00	76 - 122	76 - 122	30	n/a
1,2,3-Trichloropropane	0.517	2.00	75 - 120	75 - 120	30	n/a
1,2,4-Trimethylbenzene	0.230	1.00	77 - 125	77 - 125	30	n/a
1,2-Dibromo-3-chloropropane	0.586	5.00	61 - 128	61 - 128	30	n/a
1,2-Dichloroethane	0.191	1.00	77 - 120	77 - 120	30	n/a
1,2-Dichloroethene, cis-	0.240	1.00		75 - 124	30	n/a
1,2-Dichloroethene, trans-	0.266	1.00	73 - 131	73 - 131	30	n/a
1,2-Dichloropropane	0.162	1.00	74 - 120	74 - 120	30	n/a
1,3,5-Trimethylbenzene (Mesitylene)	0.254	1.00	77 - 126	77 - 126	30	n/a
1,3-Dichloropropane	0.209	1.00	77 - 120	77 - 120	30	n/a
1,3-Dichloropropene, cis-	0226	1.00	80 - 124	80 - 124	30	n/a
1,3-Dichloropropene, trans-	0.216	1.00	80 - 126	80 - 126	30	n/a
1,4-Dichloro-2-butene, trans-	0.437	5.00	62 - 127	62 - 127	30	n/a
2-Butanone (MEK)	0.513	5.00	64 - 120	64 - 120	30	n/a
2-Hexanone (Methyl butyl ketone)	0.439	5.00	62 - 128	62 - 128	30	n/a
4-Chlorotoluene	0.277	1.00	75 - 121	75 - 121	30	n/a
4-Isopropyltoluene (4-Cymene)	0.236	1.00	78 - 131	78 - 131	30	n/a
Acetone	0.482	5.00	48 - 132	48 - 132	30	n/a
Acrolein	3.81	50.0	60 - 130	60 - 130	30	n/a
Acrylonitrile	1.03	5.00	59 - 124	59 - 124	30	n/a
Benzene	0.296	1.00	80 - 120	80 - 120	30	n/a
Bromobenzene	0.153	1.00	75 - 120	75 - 120	30	n/a
Bromochloromethane	0.323	1.00	69 - 133	69 - 133	30	n/a
Bromodichloromethane	0.254	1.00	80 - 122	80 - 122	30	n/a
Bromoform (Tribromomethane)	0.297	1.00	63 - 120	63 - 120	30	n/a
Bromomethane (Methyl bromide)	0.187	1.00	40 - 172	40 - 172	30	n/a
Carbon disulfide	0.559	1.00	72 - 146	72 - 146	30	n/a
Carbon tetrachloride (Tetrachloromethane)	0.213	1.00	76 - 136	76 - 136	30	n/a
Chlorobenzene	0.219	1.00	80 - 120	80 - 120	30	n/a
Chloroethane	0.462	1.00	53 - 154	53 - 154	30	n/a
Chloroform	0.234	1.00	75 - 126	75 - 126	30	n/a
Chloromethane	0.263	1.00	65 - 129	65 - 129	30	n/a
Dibromochloromethane	0.266	1.00	77 - 123	77 - 123	30	n/a
Dibromomethane	0.147	1.00	80 - 120	80 - 120	30	n/a
Dichlorodifluoromethane	0.207	1.00	67 - 142	67 - 142	30	n/a
Dichloromethane (Methylene chloride)	0.635	2.00	61 - 128	61 - 128	30	n/a
Ethylbenzene	0.202	1.00	80 - 120	80 - 120	30	n/a
Ethylene dibromide (1,2-Dibromoethane)	0.176	1.00	79 - 120	79 - 120	30	n/a
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	0.410	5.00	72 - 135	72 - 135	30	n/a
Isopropylbenzene (Cumene)	0.233	1.00	77 - 127	77 - 127	30	n/a
Methyl iodide (Iodomethane)	0.215	1.00	34 - 181	34 - 181	30	n/a
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	0.420	5.00	70 - 124	70 - 124	30	n/a
Methyl tert-butyl ether (MTBE)	0.231	1.00	68 - 124	68 - 124	30	n/a
n-Butylbenzene	0.262	1.00	75 - 134	75 - 134	30	n/a
n-Propylbenzene	0.272	1.00	76 - 126	76 - 126	30	n/a
o-Xylene	0.224	1.00	80 - 120	80 - 120	30	n/a
sec-Butylbenzene	0.240	1.00	77 - 127	77 - 127	30	n/a
Styrene	0.138	1.00	80 - 122	80 - 122	30	n/a
tert-Butylbenzene	0.306	1.00	77 - 125	77 - 125	30	n/a
Tetrachloroethene (PCE)	0.257	1.00	76 - 131	76 - 131	30	n/a
Toluene	0.151	1.00	78 - 120	78 - 120	30	n/a
Trichloroethene (TCE)	0.212	1.00	80 - 120	80 - 120	30	n/a
Trichlorofluoromethane (Fluorotrichloromethane)	0.266	1.00	57 - 161	57 - 161	30	n/a
Vinyl acetate	0.381	5.00	54 - 138	54 - 138	30	n/a
Vinyl chloride	0.235	1.00	74 - 134	74 - 134	30	n/a
1,2-Dichloroethane-d4	n/a	n/a	n/a	n/a	n/a	80 - 149
1,2-Dichlorobenzene-d4	n/a	n/a	n/a	n/a	n/a	80 - 120
Toluene-d8	n/a	n/a	n/a	n/a	n/a	77 - 120
4-Bromofluorobenzene	n/a	n/a	n/a	n/a	n/a	80 - 120
Dibromofluoromethane	n/a	n/a	n/a	n/a	n/a	80 - 120

Table A-2. Measurement Quality Objectives for Soil and Sediment Samples

Project No. 210507, 2200 Cooper Point Road NW, Olympia, Washington

Analyte Name	DL[(1)]	LOQ	LCS/LCS %R[(A)]	MS/MSD %R[(A)]	RPD (%)	Surrogate %R[(A)]
Semivolatile Organic Compounds (SVOCs) by SW8270D (ug/kg)						
1,2,4-Trichlorobenzene	15.9	67.0	50 - 120	50 - 120	30	n/a
1,2-Dichlorobenzene	18.4	67.0	48 - 120	48 - 120	30	n/a
1,3-Dichlorobenzene	15.7	67.0	47 - 120	47 - 120	30	n/a
1,4-Dichlorobenzene	15.6	67.0	46 - 120	46 - 120	30	n/a
1,4-Dioxane	n/a	67.0	n/a	n/a	30	n/a
2,2'-Oxybis (1-chloropropane)	18.7	67.0	36 - 120	36 - 120	30	n/a
2,4,5-Trichlorophenol	150	330	52 - 120	52 - 120	30	n/a
2,4,6-Trichlorophenol	142	330	51 - 120	51 - 120	30	n/a
2,4-Dichlorophenol	74.7	330	51 - 120	51 - 120	30	n/a
2,4-Dimethylphenol	16.2	67.0	40 - 120	40 - 120	30	n/a
2,4-Dinitrophenol	77.3	670	15 - 169	15 - 169	30	n/a
2,4-Dinitrotoluene	96.0	330	57 - 127	57 - 127	30	n/a
2,6-Dinitrotoluene	96.0	330	54 - 124	54 - 124	30	n/a
2-Chloronaphthalene	21.3	67.0	48 - 120	48 - 120	30	n/a
2-Chlorophenol	14.3	67.0	45 - 120	45 - 120	30	n/a
2-Methylphenol (o-Cresol)	23.3	67.0	45 - 120	45 - 120	30	n/a
2-Nitroaniline	120	330	51 - 120	51 - 120	30	n/a
2-Nitrophenol	63.4	67.0	50 - 120	50 - 120	30	n/a
3,3'-Dichlorobenzidine	89.3	330	37 - 140	37 - 140	30	n/a
3-Methylphenol & 4-Methylphenol (m&p-Cresol)	n/a	n/a	n/a	n/a	n/a	n/a
3-Methylphenol (m-Cresol)	n/a	n/a	n/a	n/a	n/a	n/a
3-Nitroaniline	104	330	39 - 142	39 - 142	30	n/a
4-Bromophenyl-phenyl ether	19.3	67.0	50 - 120	50 - 120	30	n/a
4-Chloro-3-methylphenol	115	330	54 - 120	54 - 120	30	n/a
4-Chloroaniline	100	330	17 - 149	17 - 149	30	n/a
4-Methylphenol (p-Cresol)	22.4	67.0	47 - 120	47 - 120	30	n/a
4-Nitroaniline	102	330	47 - 124	47 - 124	30	n/a
4-Nitrophenol	48.2	330	23 - 130	23 - 130	30	n/a
Aniline	21.8	67.0	10 - 129	10 - 129	30	n/a
Benzidine	210	670	57 - 120	57 - 120	30	n/a
Benzoic acid	251	670	10 - 160	10 - 160	30	n/a
Benzyl alcohol	86.7	330	16 - 120	16 - 120	30	n/a
Biphenyl (1,1'-Biphenyl)	1.44	5.00	30 - 160	30 - 160	30	n/a
bis(2-Chloroethoxy)methane	17.3	67.0	49 - 120	49 - 120	30	n/a
bis(2-Chloroethyl)ether	16.9	67.0	43 - 120	43 - 120	30	n/a
bis(2-Ethylhexyl)phthalate	23.9	67.0	63 - 128	63 - 128	30	n/a
Butylbenzyl phthalate	24.6	67.0	44 - 144	44 - 144	30	n/a
Dibenzofuran	18.2	67.0	55 - 120	55 - 120	30	n/a
Diethyl phthalate	20.9	67.0	54 - 120	54 - 120	30	n/a
Dimethyl phthalate	26.5	67.0	56 - 120	56 - 120	30	n/a
Di-n-butyl phthalate	33.1	67.0	60 - 120	60 - 120	30	n/a
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	122	670	10 - 157	10 - 157	30	n/a
Di-n-octyl phthalate	19.1	67.0	59 - 120	59 - 120	30	n/a
Hexachlorobenzene	18.9	67.0	50 - 121	50 - 121	30	n/a
Hexachlorocyclopentadiene	62.4	330	23 - 149	23 - 149	30	n/a
Hexachloroethane	18.8	67.0	43 - 120	43 - 120	30	n/a
Isophorone	13.4	67.0	57 - 120	57 - 120	30	n/a
Nitrobenzene	25.6	67.0	39 - 120	39 - 120	30	n/a
n-Nitrosodimethylamine	84.0	330	43 - 120	43 - 120	30	n/a
n-Nitrosodi-n-propylamine	20.8	67.0	44 - 120	44 - 120	30	n/a
n-Nitrosodiphenylamine	16.9	67.0	54 - 138	54 - 138	30	n/a
Pentachlorophenol	96.7	330	40 - 123	40 - 123	30	n/a
Phenol	16.1	67.0	37 - 120	37 - 120	30	n/a
2-Fluorophenol	n/a	n/a	n/a	n/a	n/a	22 - 120
Phenol-d5	n/a	n/a	n/a	n/a	n/a	27 - 120
2-Chlorophenol-d4	n/a	n/a	n/a	n/a	n/a	36 - 120
1,2-Dichlorobenzene-d4	n/a	n/a	n/a	n/a	n/a	38 - 120
Nitrobenzene-d5	n/a	n/a	n/a	n/a	n/a	32 - 120
2-Fluorobiphenyl	n/a	n/a	n/a	n/a	n/a	39 - 120
2,4,6-Tribromophenol	n/a	n/a	n/a	n/a	n/a	31 - 131
p-Terphenyl-d14	n/a	n/a	n/a	n/a	n/a	31 - 130
Polycyclic Aromatic Hydrocarbons by SW8270D-SIM (ug/kg)						
1-Methylnaphthalene	1.61	5.00	39 - 120	39 - 120	30	n/a
2-Methylnaphthalene	1.69	5.00	35 - 120	35 - 120	30	n/a
Acenaphthene	1.49	5.00	39 - 120	39 - 120	30	n/a
Acenaphthylene	1.61	5.00	35 - 120	35 - 120	30	n/a
Anthracene	1.78	5.00	36 - 120	36 - 120	30	n/a
Benzo(a)anthracene	2.22	5.00	42 - 120	42 - 120	30	n/a
Benzo(a)pyrene	2.38	5.00	36 - 120	36 - 120	30	n/a
Benzo(b)fluoranthene	2.11	5.00	35 - 127	35 - 127	30	n/a
Benzo(g,h,i)perylene	2.79	5.00	38 - 120	38 - 120	30	n/a
Benzo(k)fluoranthene	2.28	5.00	37 - 129	37 - 129	30	n/a
Chrysene	1.92	5.00	48 - 120	48 - 120	30	n/a
Dibenzo(a,h)anthracene	2.56	5.00	38 - 120	38 - 120	30	n/a
Fluoranthene	1.87	5.00	46 - 120	46 - 120	30	n/a
Fluorene	1.47	5.00	41 - 120	41 - 120	30	n/a
Indeno(1,2,3-c,d)pyrene	3.01	5.00	40 - 120	40 - 120	30	n/a
Naphthalene	2.26	5.00	36 - 120	36 - 120	30	n/a
Phenanthrene	1.58	5.00	46 - 120	46 - 120	30	n/a
Pyrene	2.26	5.00	49 - 120	49 - 120	30	n/a
Total HPAH	n/a	n/a	n/a	n/a	n/a	n/a
Total LPAH	n/a	n/a	n/a	n/a	n/a	n/a
Total PAH	n/a	n/a	n/a	n/a	n/a	n/a
2-Methylnaphthalene-d10	n/a	n/a	n/a	n/a	n/a	32 - 120
Dibenzo[a,h]anthracene-d14	n/a	n/a	n/a	n/a	n/a	21 - 133
Fluoranthene-d10	n/a	n/a	n/a	n/a	n/a	36 - 134

Table A-2. Measurement Quality Objectives for Soil and Sediment Samples

Project No. 210507, 2200 Cooper Point Road NW, Olympia, Washington

Analyte Name	DL[(1)]	LOQ	LCS/LCS %R[(A)]	MS/MSD %R[(A)]	RPD (%)	Surrogate %R[(A)]
Petroleum Hydrocarbons by NWTPH-Gx/-Dx (mg/kg)						
Gasoline-Range Hydrocarbons	n/a	20	n/a	n/a	n/a	n/a
Diesel-Range Hydrocarbons	1.50	50	n/a	n/a	n/a	n/a
Oil-Range Hydrocarbons	3.00	100	n/a	n/a	n/a	n/a
o-Terphenyl	n/a	n/a	n/a	n/a	n/a	50-150
n-Triacontane	n/a	n/a	n/a	n/a	n/a	50-150
Polychlorinated Biphenyls by EPA 8082 (ug/kg)						
Aroclor 1016	1.56	4	51-120	51-120	30	n/a
Aroclor 1221	1.56	4	51-120	51-120	30	n/a
Aroclor 1232	1.56	4	51-120	51-120	30	n/a
Aroclor 1242	1.56	4	51-120	51-120	30	n/a
Aroclor 1248	1.56	4	51-120	51-120	30	n/a
Aroclor 1254	1.56	4	51-120	51-120	30	n/a
Aroclor 1260	0.589	4	59-120	59-120	30	n/a

Notes

(1) - Based on current laboratory control criteria. Some values may vary slightly between instruments and can be subject to change as the laboratory updates the charted values periodically.

%R - percent recovery
LCS/LCSD - laboratory control samples and laboratory control sample duplicate
DL - Detection Limit
LOQ = Level of Quantitation
mg/kg - milligram per kilogram
MS/MSD - Matrix spike and matrix spike duplicate
n/a - not applicable
RPD - Relative percent difference
ug/kg - micrograms per kilogram

Table A-3. Measurement Quality Objectives for Water Samples

Project No. 210507, 2200 Cooper Point Road NW, Olympia, Washington

Analyte Name	DL[(1)]	LOQ	LCS/LCS %R[(A)]	MS/MSD %R[(A)]	RPD (%)	Surrogate %R[(A)]
Total and Dissolved Metals by EPA 200.8/6020A (u/L)						
Antimony	0.1	0.2	80 - 120	75 - 125	20	n/a
Arsenic	0.048	0.2	80 - 120	75 - 125	20	n/a
Beryllium	0.2	0.1	80 - 120	75 - 125	20	n/a
Cadmium	0.01	0.1	80 - 120	75 - 125	20	n/a
Chromium	0.045	0.5	80 - 120	75 - 125	20	n/a
Copper	0.25	0.5	80 - 120	75 - 125	20	n/a
Lead	0.046	0.1	80 - 120	75 - 125	20	n/a
Nickel	0.25	0.5	80 - 120	75 - 125	20	n/a
Selenium	0.127	0.5	80 - 120	75 - 125	20	n/a
Silver	0.008	0.2	80 - 120	75 - 125	20	n/a
Thallium	0.1	0.2	80 - 120	75 - 125	20	n/a
Zinc	4.0	2.0	80 - 120	75 - 125	20	n/a
Total and Dissolved Mercury by EPA 7470A (ug/L)						
Mercury	0.007000	0.100	80 - 120	75 - 125	20	n/a
Volatile Organic Compounds (VOCs) by SW8260C (ug/L)						
1,1,1,2-Tetrachloroethane	0.0396	0.200	80 - 128	80 - 128	30	n/a
1,1,1-Trichloroethane	0.0408	0.200	79 - 124	79 - 124	30	n/a
1,1,2,2-Tetrachloroethane	0.0598	0.200	80 - 120	80 - 120	30	n/a
1,1,2-Trichloroethane	0.129	0.200	80 - 120	80 - 120	30	n/a
1,1,2-Trichlorotrifluoroethane (Freon 113)	0.0429	0.200	76 - 124	76 - 124	30	n/a
1,1-Dichloroethane	0.0533	0.200	80 - 120	80 - 120	30	n/a
1,1-Dichloroethene	0.0540	0.200	74 - 120	74 - 120	30	n/a
1,2,3-Trichlorobenzene	0.110	0.500	80 - 125	80 - 125	30	n/a
1,2,3-Trichloropropane	0.131	0.500	80 - 120	80 - 120	30	n/a
1,2,4-Trimethylbenzene	0.0243	0.200	80 - 122	80 - 122	30	n/a
1,2-Dibromo-3-chloropropane	0.366	0.500	79 - 129	79 - 129	30	n/a
1,2-Dichloroethane	0.0717	0.200	80 - 121	80 - 121	30	n/a
1,2-Dichloroethene, cis-	0.0427	0.200	78 - 120	78 - 120	30	n/a
1,2-Dichloroethene, trans-	0.0485	0.200	75 - 120	75 - 120	30	n/a
1,2-Dichloropropane	0.0352	0.200	80 - 120	80 - 120	30	n/a
1,3,5-Trimethylbenzene (Mesitylene)	0.0150	0.200	80 - 120	80 - 120	30	n/a
1,3-Dichloropropane	0.0622	0.200	80 - 120	80 - 120	30	n/a
1,3-Dichloropropene, cis-	0.0610	0.200	80 - 127	80 - 127	30	n/a
1,3-Dichloropropene, trans-	0.0815	0.200	79 - 132	79 - 132	30	n/a
1,4-Dichloro-2-butene, trans-	0.324	1.00	47 - 147	47 - 147	30	n/a
2-Butanone (MEK)	0.814	5.00	73 - 123	73 - 123	30	n/a
2-Chlorotoluene	0.0236	0.200	80 - 120	80 - 120	30	n/a
2-Hexanone (Methyl butyl ketone)	0.902	5.00	80 - 129	80 - 129	30	n/a
4-Chlorotoluene	0.0159	0.200	80 - 120	80 - 120	30	n/a
4-Isopropyltoluene (4-Cymene)	0.0263	0.200	80 - 124	80 - 124	30	n/a
Acetone	2.06	5.00	64 - 125	64 - 125	30	n/a
Acrolein	2.48	5.00	60 - 124	60 - 124	30	n/a
Acrylonitrile	0.604	1.00	76 - 123	76 - 123	30	n/a
Benzene	0.0266	0.200	80 - 120	80 - 120	30	n/a
Bromobenzene	0.0605	0.200	80 - 120	80 - 120	30	n/a
Bromochloromethane	0.0607	0.200	80 - 120	80 - 120	30	n/a
Bromodichloromethane	0.0506	0.200	80 - 122	80 - 122	30	n/a
Bromoform (Tribromomethane)	0.0618	0.200	62 - 149	62 - 149	30	n/a
Bromomethane (Methyl bromide)	0.252	1.00	68 - 130	68 - 130	30	n/a
Carbon disulfide	0.0370	0.200	77 - 124	77 - 124	30	n/a
Carbon tetrachloride (Tetrachloromethane)	0.0439	0.200	71 - 139	71 - 139	30	n/a
Chlorobenzene	0.0230	0.200	80 - 120	80 - 120	30	n/a
Chloroethane	0.0861	0.200	68 - 133	68 - 133	30	n/a
Chloroform	0.0273	0.200	80 - 120	80 - 120	30	n/a
Chloromethane	0.0948	0.500	77 - 122	77 - 122	30	n/a
Dibromochloromethane	0.0481	0.200	80 - 120	80 - 120	30	n/a
Dibromomethane	0.145	0.200	80 - 120	80 - 120	30	n/a
Dichlorodifluoromethane	0.0521	0.200	68 - 133	68 - 133	30	n/a
Dichloromethane (Methylene chloride)	0.485	1.00	71 - 125	71 - 125	30	n/a
Ethylbenzene	0.0371	0.200	80 - 120	80 - 120	30	n/a
Ethylene dibromide (1,2-Dibromoethane)	0.0745	0.200	80 - 120	80 - 120	30	n/a
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	0.0734	0.500	80 - 135	80 - 135	30	n/a
Isopropylbenzene (Cumene)	0.0212	0.200	80 - 120	80 - 120	30	n/a
Methyl iodide (Iodomethane)	0.227	1.00	76 - 123	76 - 123	30	n/a
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	0.974	5.00	80 - 125	80 - 125	30	n/a
Methyl tert-butyl ether (MTBE)	0.0729	0.500	79 - 121	79 - 121	30	n/a
n-Butylbenzene	0.0248	0.200	80 - 125	80 - 125	30	n/a
n-Propylbenzene	0.0235	0.200	80 - 120	80 - 120	30	n/a
o-Xylene	0.0349	0.200	80 - 120	80 - 120	30	n/a
sec-Butylbenzene	0.0237	0.200	80 - 121	80 - 121	30	n/a
Styrene	0.0454	0.200	80 - 121	80 - 121	30	n/a
tert-Butylbenzene	0.0256	0.200	80 - 121	80 - 121	30	n/a
Tetrachloroethene (PCE)	0.0474	0.200	80 - 120	80 - 120	30	n/a
Toluene	0.0399	0.200	80 - 120	80 - 120	30	n/a
Trichloroethene (TCE)	0.0489	0.200	80 - 120	80 - 120	30	n/a
Trichlorofluoromethane (Fluorotrichloromethane)	0.0375	0.200	74 - 135	74 - 135	30	n/a
Vinyl acetate	0.0688	0.200	74 - 120	74 - 120	30	n/a
Vinyl chloride	0.0572	0.200	74 - 123	74 - 123	30	n/a
Semivolatile Organic Compounds (SVOCs) by SW8270D (ug/L)						
1,2,4-Trichlorobenzene	0.254	1.00	28 - 120	28 - 120	30	n/a
1,2-Dichlorobenzene	0.250	1.00	28 - 120	28 - 120	30	n/a
1,3-Dichlorobenzene	0.266	1.00	24 - 120	24 - 120	30	n/a
1,4-Dichlorobenzene	0267	1.00	24 - 120	24 - 120	30	n/a
1,4-Dioxane	0.0847	0.4	45-120	45-120	40	39-129
2,2'-Oxybis (1-chloropropane)	0.241	1.00	47 - 120	47 - 120	30	n/a
2,3,4,6-Tetrachlorophenol	0.244	1.00	58 - 120	58 - 120	30	n/a
2,4,5-Trichlorophenol	1.10	5.00	58 - 120	58 - 120	30	n/a
2,4,6-Trichlorophenol	1.04	3.00	53 - 120	53 - 120	30	n/a
2,4-Dichlorophenol	1.11	3.00	54 - 120	54 - 120	30	n/a
2,4-Dimethylphenol	1.12	3.00	37 - 120	37 - 120	30	n/a

Table A-3. Measurement Quality Objectives for Water Samples

Project No. 210507, 2200 Cooper Point Road NW, Olympia, Washington

Analyte Name	DL[(1)]	LOQ	LCS/LCS %R[(A)]	MS/MSD %R[(A)]	RPD (%)	Surrogate %R[(A)]
2,4-Dinitrophenol	3.35	20.0	40 - 120	40 - 120	30	n/a
2,4-Dinitrotoluene	1.12	3.00	51 - 120	51 - 120	30	n/a
2,6-Dinitrotoluene	1.14	3.00	52 - 120	52 - 120	30	n/a
2-Chloronaphthalene	0.248	1.00	42 - 120	42 - 120	30	n/a
2-Chlorophenol	0.220	1.00	48 - 120	48 - 120	30	n/a
2-Methylphenol (o-Cresol)	0.211	1.00	44 - 120	44 - 120	30	n/a
2-Nitroaniline	1.46	3.00	31 - 120	31 - 120	30	n/a
2-Nitrophenol	0.263	3.00	47 - 120	47 - 120	30	n/a
3,3'-Dichlorobenzidine	1.77	5.00	44 - 120	44 - 120	30	n/a
3-Methylphenol & 4-Methylphenol (m&p-Cresol)	n/a	n/a	n/a	n/a	n/a	n/a
3-Methylphenol (m-Cresol)	n/a	n/a	n/a	n/a	n/a	n/a
3-Nitroaniline	1.53	3.00	36 - 120	36 - 120	30	n/a
4-Bromophenyl-phenyl ether	0.238	1.00	56 - 120	56 - 120	30	n/a
4-Chloro-3-methylphenol	1.12	3.00	59 - 120	59 - 120	30	n/a
4-Chloroaniline	1.73	5.00	10 - 132	10 - 132	30	n/a
4-Methylphenol (p-Cresol)	0.468	2.00	48 - 120	48 - 120	30	n/a
4-Nitroaniline	2.02	3.00	25 - 132	25 - 132	30	n/a
4-Nitrophenol	1.75	10.0	44 - 129	44 - 129	30	n/a
Aniline	0.973	1.00	21 - 120	21 - 120	30	n/a
Benzoic acid	3.92	3.92	37 - 120	37 - 120	30	n/a
Benzyl alcohol	0.552	0.552	26 - 120	26 - 120	30	n/a
bis(2-Chloroethoxy)methane	0.237	1.00	48 - 120	48 - 120	30	n/a
bis(2-Chloroethyl)ether	0.248	1.00	50 - 120	50 - 120	30	n/a
bis(2-Ethylhexyl)phthalate	2.14	3.00	58 - 120	58 - 120	30	n/a
Butylbenzyl phthalate	0.299	1.00	54 - 120	54 - 120	30	n/a
Dibenzofuran	0.309	1.00	36 - 120	36 - 120	30	n/a
Diethyl phthalate	0.273	1.00	60 - 120	60 - 120	30	n/a
Dimethyl phthalate	0.259	1.00	61 - 120	61 - 120	30	n/a
Di-n-butyl phthalate	0.291	1.00	65 - 120	65 - 120	30	n/a
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	3.61	10.0	56 - 120	56 - 120	30	n/a
Di-n-octyl phthalate	0.268	1.00	62 - 120	62 - 120	30	n/a
Hexachlorobenzene	0.280	1.00	54 - 120	54 - 120	30	n/a
Hexachlorocyclopentadiene	1.08	5.00	16 - 120	16 - 120	30	n/a
Hexachloroethane	0.300	2.00	18 - 120	18 - 120	30	n/a
Isophorone	0.423	1.00	57 - 120	57 - 120	30	n/a
Nitrobenzene	0.253	1.00	49 - 120	49 - 120	30	n/a
n-Nitrosodimethylamine	1.33	3.00	41 - 120	41 - 120	30	n/a
n-Nitrosodi-n-propylamine	0.269	1.00	50 - 120	50 - 120	30	n/a
n-Nitrosodiphenylamine	0.299	1.00	48 - 120	48 - 120	30	n/a
Pentachlorophenol	1.89	10.0	40 - 131	40 - 131	30	n/a
Phenol	0.271	1.00	48 - 120	48 - 120	30	n/a
Polycyclic Aromatic Hydrocarbons (PAHs) by SW8270D-SIM (ug/L)						
1-Methylnaphthalene	0.00313	0.0100	29 - 120	29 - 120	30	n/a
2-Methylnaphthalene	0.00384	0.0100	37 - 120	37 - 120	30	n/a
Acenaphthene	0.00311	0.0100	41 - 120	41 - 120	30	n/a
Acenaphthylene	0.00317	0.0100	41 - 120	41 - 120	30	n/a
Anthracene	0.00248	0.0100	40 - 120	40 - 120	30	n/a
Benzo(a)anthracene	0.00347	0.0100	42 - 120	42 - 120	30	n/a
Benzo(a)pyrene	0.00237	0.0100	35 - 120	35 - 120	30	n/a
Benzo(b)fluoranthene	0.00356	0.0100	44 - 120	44 - 120	30	n/a
Benzo(g,h,i)perylene	0.00312	0.0100	38 - 120	38 - 120	30	n/a
Benzo(k)fluoranthene	0.00345	0.0100	50 - 120	50 - 120	30	n/a
Chrysene	0.00313	0.0100	44 - 120	44 - 120	30	n/a
Dibenzo(a,h)anthracene	0.00303	0.0100	34 - 120	34 - 120	30	n/a
Fluoranthene	0.00337	0.0100	45 - 120	45 - 120	30	n/a
Fluorene	0.00317	0.0100	43 - 120	43 - 120	30	n/a
Indeno(1,2,3-c,d)pyrene	0.00334	0.0100	37 - 120	37 - 120	30	n/a
Naphthalene	0.00740	0.0100	37 - 120	37 - 120	30	n/a
Phenanthrene	0.00299	0.0100	41 - 120	41 - 120	30	n/a
Pyrene	0.00417	0.0100	41 - 120	41 - 120	30	n/a
Total Benzofluoranthenes (b,j,k)	0.00356	0.0100	46 - 120	46 - 120	30	n/a
Total HPAH	n/a	n/a	n/a	n/a	n/a	n/a
Total LPAH	n/a	n/a	n/a	n/a	n/a	n/a
Total PAH	n/a	n/a	n/a	n/a	n/a	n/a
Petroleum Hydrocarbons by NWTPH-Gx/-Dx (ug/L)						
Gasoline-Range Hydrocarbons	n/a	250	n/a	n/a	n/a	n/a
Diesel-Range Hydrocarbons	30	500	n/a	n/a	n/a	n/a
Oil-Range Hydrocarbons	50	1000	n/a	n/a	n/a	n/a
o-Terphenyl	n/a	n/a	n/a	n/a	n/a	50-150
n-Triacontane	n/a	n/a	n/a	n/a	n/a	50-150
PCB Aroclors by SW8082A (ug/L)						
Aroclor 1016	0.00248	0.01	50-103	25-144	30	n/a
Aroclor 1221	0.00276	0.01	n/a	n/a	n/a	n/a
Aroclor 1232	0.00276	0.01	n/a	n/a	n/a	n/a
Aroclor 1242	0.00248	0.01	n/a	n/a	n/a	n/a
Aroclor 1248	0.00248	0.01	n/a	n/a	n/a	n/a
Aroclor 1254	0.00248	0.01	n/a	n/a	n/a	n/a
Aroclor 1260	0.00276	0.01	56-100	40-127	30	n/a
Tetrachloro-m-xylene	n/a	n/a	n/a	n/a	n/a	50-150

Notes

[(1)] - Based on current laboratory control criteria. Some values may vary slightly between instruments and can be subject to change as the laboratory updates the charted values periodically.

%R - Percent recovery

DL - Detection Limit

LCS/LCSD - Laboratory control samples and laboratory control sample duplicate

LOQ - Level of Quantitation

MS/MSD - Matrix spike and matrix spike duplicate

n/a - not applicable

RPD - Relative percent difference

ug/L - microgram per liter

Table A-4. Measurement Quality Control Indicators

Project No. 210507, 2200 Cooper Point Road NW, Olympia, Washington

Measurement Quality Indicators	QC Parameters
Precision	RPD values of:
	(1) LCS/LCS Duplicate
	(2) MS/MSD
	(3) Field Duplicates
Accuracy/Bias	Percent Recovery (%R) or Percent Difference (%D) Values of:
	(1) Initial Calibration and Calibration Verification
	(2) LCS
	(3) MS
	(4) Surrogate Spikes
	Results of:
	(1) Instrument and Calibration Blank
	(2) Method (Preparation) Blank
	(3) Trip Blank
	(4) Equipment Rinsate Blank
Representativeness	Results of All Blanks
	Sample Integrity (CoC and Sample Receipt Forms)
	Holding Times
Comparability	Sample-specific Reporting Limits
	Sample Collection Methods
	Laboratory Analytical Methods
Completeness	Data Qualifiers
	Laboratory Deliverables
	Requested/Reported Valid Results
Sensitivity	MDLs and MRLs

Notes

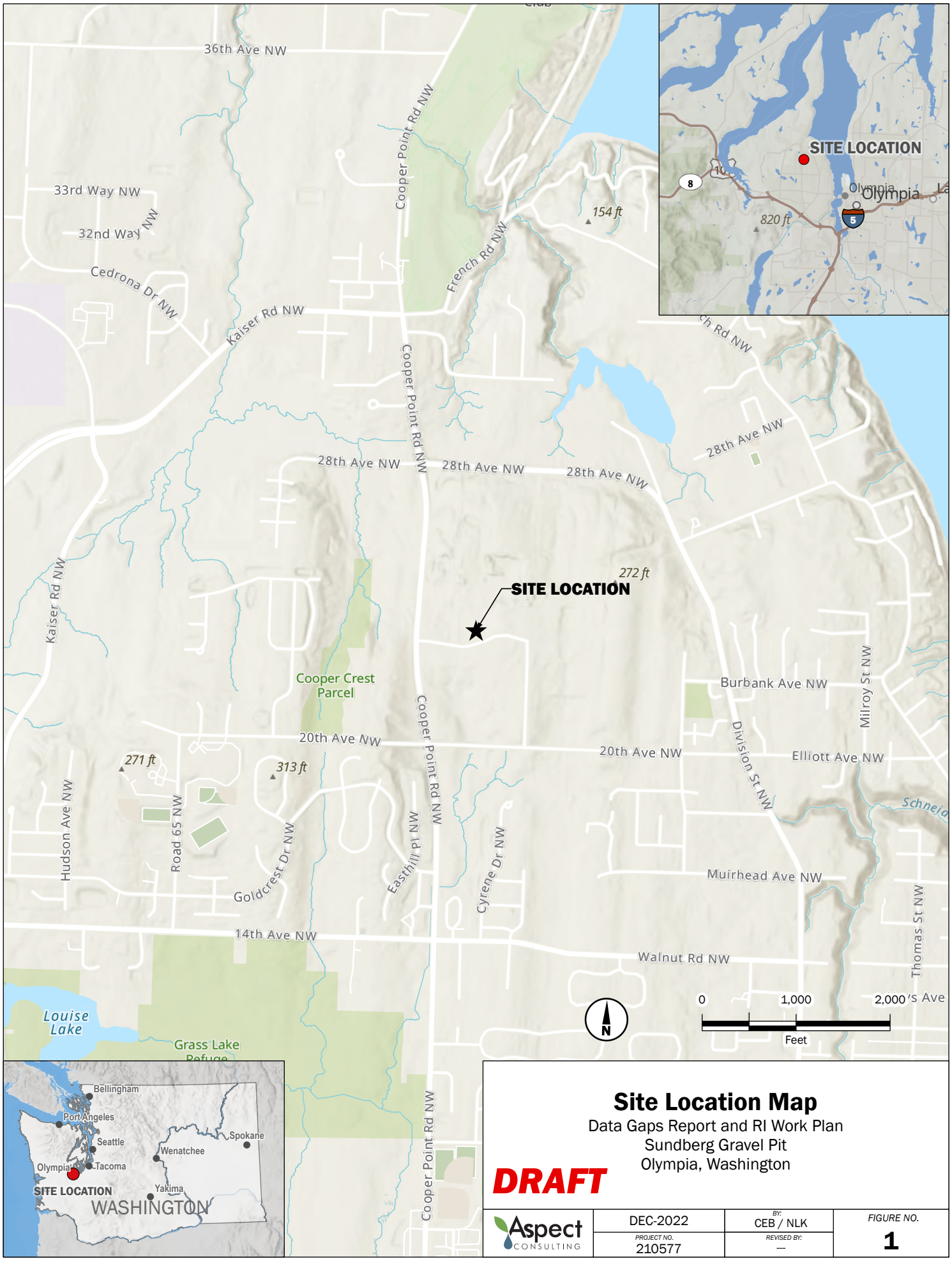
LCS = Laboratory Control Sample

MDL = Method Detection Limit

MRL = Method Reporting Limit

MS/MSD = Matrix Spike/Matrix Spike Duplicate

FIGURES



Site Location Map

Data Gaps Report and RI Work Plan
Sundberg Gravel Pit
Olympia, Washington

DRAFT

Aspect Consulting	DEC-2022	BY: CEB / NLK	FIGURE NO. 1
	PROJECT NO. 210577	REVISED BY: ---	

MW-13
B2/MW2
B4/MW4
Wetland D
B5/MW5
Wetland A
MW-14
B6/MW6
B7/MW7
B1/MW1
B8/MW8
MW-20
Wetland C
MW-12
B11/MW11
MW-19
MW-16
B10/MW10
B9/MW9
MW-15
Wetland B
MW-17
B3/MW3
MW-18
Wetland E
Butler Cove Watershed
Green Cove Watershed
COOPER PT RD NW
GROVE ST NW

Proposed Explorations

- Soil Boring Location
- Test Pit Exploration Location
- Monitoring Well Location
- Fill Investigation Location
- Preliminary Wetland Sediment Sampling Station
- Preliminary Wetland Surface Water Sample Location
- Methane Sample Location
- Existing Monitoring Well (AEG 2020/2021)
- Approximate location of former Underground Storage Tank (UST) and petroleum-impacted soil stockpile
- Wetland Boundary
- Green Cove Watershed
- 2-foot Contours
- Subject Property
- Thurston County Tax Parcel

Note: Locations are approximate.

N

0 100 200 Feet

Remedial Investigation Approach

Sampling and Analysis Plan
Sundberg Gravel Pit
Olympia, Washington

DRAFT

Aspect Consulting	MAY-2023	BY: CEB / NLK	FIGURE NO. A2
	PROJECT NO. 210577	REVISED BY: ---/---	

ATTACHMENT A

Field Forms

Sundberg Gravel Pit, 210577
Gas Monitoring Record

Gas Probe ID: MW-2

Date & Time:

Field Personnel:

Casing Volume Purged	Volume Purged (cc)	Purge Rate (cc/min)	Purge Time (s)	CH_4 (%volume)	CO_2 (%volume)	O_2 (%volume)	CO (ppm)	Bal (%volume)
0	0	0	0					
0.5	4,650	3000	93					
1.0	9,300	3000	186					
1.5	13,950	3000	279					
2.0	18,600	3000	372					
2.5	23,250	3000	465					
3.0	27,900	3000	558					

Comments:

Baro. Pressure (in Hg):
Probe Pressure (" wc):
Total Casing Volume (cc): 9,300
Probe Diameter (in): 2
Stickup (ft): 0
Top of Screen (ft): 10
Depth to Water (ft):
Total Depth (ft): 15

Screen submerged?

Sundberg Gravel Pit, 210577
Gas Monitoring Record

Gas Probe ID: MW-9

Date & Time:

Field Personnel:

Casing Volume Purged	Volume Purged (cc)	Purge Rate (cc/min)	Purge Time (s)	CH_4 (%volume)	CO_2 (%volume)	O_2 (%volume)	CO (ppm)	Bal (%volume)
0	0	0	0					
0.5	4,650	3000	93					
1.0	9,300	3000	186					
1.5	13,950	3000	279					
2.0	18,600	3000	372					
2.5	23,250	3000	465					
3.0	27,900	3000	558					

Comments:

Baro. Pressure (in Hg):
Probe Pressure (" wc):
Total Casing Volume (cc): 9,300
Probe Diameter (in): 2
Stickup (ft): 0
Top of Screen (ft): 5
Depth to Water (ft):
Total Depth (ft): 15

Screen submerged?

Sundberg Gravel Pit, 210577
Gas Monitoring Record

Gas Probe ID: MW-10

Date & Time:

Field Personnel:

Casing Volume Purged	Volume Purged (cc)	Purge Rate (cc/min)	Purge Time (s)	CH_4 (%volume)	CO_2 (%volume)	O_2 (%volume)	CO (ppm)	H_2S (ppm)	Bal (%volume)
0	0	0	0						
0.5	4,650	3000	93						
1.0	9,300	3000	186						
1.5	13,950	3000	279						
2.0	18,600	3000	372						
2.5	23,250	3000	465						
3.0	27,900	3000	558						

Comments:

Baro. Pressure (in Hg):
Probe Pressure (" wc):
Total Casing Volume (cc): 9,300
Probe Diameter (in): 2
Stickup (ft): 0
Top of Screen (ft): 5
Depth to Water (ft):
Total Depth (ft): 15

Screen submerged?

Sundberg Gravel Pit, 210577
Gas Monitoring Record

Gas Probe ID: GP-1

Date & Time:

Field Personnel:

Casing Volume Purged	Volume Purged (cc)	Purge Rate (cc/min)	Purge Time (s)	CH_4 (%volume)	CO_2 (%volume)	O_2 (%volume)	CO (ppm)	H_2S (ppm)	Bal (%volume)
0	0	0	0						
0.5	300	550	33						
1.0	600	550	65						
1.5	900	550	98						
2.0	1,200	550	131						
2.5	1,500	550	164						
3.0	1,800	550	196						

Comments:

Baro. Pressure (in Hg):	
Probe Pressure (" wc):	
Total Casing Volume (cc):	600
Probe Diameter (in):	0.75
Stickup (ft):	2.5
Top of Screen (ft):	-3
Depth to Water (ft):	
Total Depth (ft):	7

Screen submerged?

Sundberg Gravel Pit, 210577
Gas Monitoring Record

Gas Probe ID: GP-2

Date & Time:

Field Personnel:

Casing Volume Purged	Volume Purged (cc)	Purge Rate (cc/min)	Purge Time (s)	CH_4 (%volume)	CO_2 (%volume)	O_2 (%volume)	CO (ppm)	H_2S (ppm)	Bal (%volume)
0	0	0	0						
0.5	500	550	55						
1.0	1,000	550	109						
1.5	1,500	550	164						
2.0	2,000	550	218						
2.5	2,500	550	273						
3.0	3,000	550	327						

Comments:

Baro. Pressure (in Hg):
Probe Pressure (" wc):
Total Casing Volume (cc): 1,000
Probe Diameter (in): 0.75
Stickup (ft): 2.5
Top of Screen (ft): 2
Depth to Water (ft):
Total Depth (ft): 12

Screen submerged?

Sundberg Gravel Pit, 210577
Gas Monitoring Record

Gas Probe ID: GP-3

Date & Time:

Field Personnel:

Casing Volume Purged	Volume Purged (cc)	Purge Rate (cc/min)	Purge Time (s)	CH_4 (%volume)	CO_2 (%volume)	O_2 (%volume)	CO (ppm)	H_2S (ppm)	Bal (%volume)
0	0	0	0						
0.5	300	550	33						
1.0	600	550	65						
1.5	900	550	98						
2.0	1,200	550	131						
2.5	1,500	550	164						
3.0	1,800	550	196						

Comments:

Baro. Pressure (in Hg):	
Probe Pressure (" wc):	
Total Casing Volume (cc):	600
Probe Diameter (in):	0.75
Stickup (ft):	2.5
Top of Screen (ft):	-3
Depth to Water (ft):	
Total Depth (ft):	7

Screen submerged?

Sundberg Gravel Pit, 210577
Gas Monitoring Record

Gas Probe ID: GP-4

Date & Time:

Field Personnel:

Casing Volume Purged	Volume Purged (cc)	Purge Rate (cc/min)	Purge Time (s)	CH_4 (%volume)	CO_2 (%volume)	O_2 (%volume)	CO (ppm)	H_2S (ppm)	Bal (%volume)
0	0	0	0						
0.5	500	550	55						
1.0	1,000	550	109						
1.5	1,500	550	164						
2.0	2,000	550	218						
2.5	2,500	550	273						
3.0	3,000	550	327						

Comments:

Baro. Pressure (in Hg):	
Probe Pressure (" wc):	
Total Casing Volume (cc):	1,000
Probe Diameter (in):	0.75
Stickup (ft):	2.5
Top of Screen (ft):	1
Depth to Water (ft):	
Total Depth (ft):	11

Screen submerged?

APPENDIX B

Previous Exploration Logs

maps, which identified the area as the Alderwood series – a soil with shallow glacial till that tends to perch seasonal groundwater. This appears to be due to mining and removal of the overlying impermeable ablative till, and subsequent exposure of underlying gravelly and sandy advance outwash glacial deposits. Unfortunately, because these exposed substrates have been weathering for such a short period of time (some less than 1 year, most less than 50), evidence of seasonal saturation in the substrates that would develop over decades or centuries of chemical and physical changes are for the most part lacking or inconclusive.

For reasons explained above, it may be prudent to engage for a Phase II site assessment to verify if there are buried contaminants in the very common deep fills that dominate the site, but also for a more extensive geotechnical site assessment to provide a formal evaluation of the type of fill, whether it is or is not structural, and whether it might be necessary to remove fill entirely in some areas.

Robinson and Noble does provide Phase II site assessments; they might also have staff that could provide geotechnical assessments in concert with the drilling needed for Phase II work – which might be less expensive overall.

Respectfully submitted,

Pacific Rim Soil and Water, Inc.
Lisa Palazzi, CPSS

Pit 1

Horiz	Dpth	Col	CF	Txt	Struc	Perc	Mott	Roots	OM	%C
A	0-9	10YR3/2	10	L	WFSBk	0.2-0.6	—	CF, CM	6	12
Bs	9-18	10YR3/3	15	GrSL	MMSBk	2-6	—	CF, CM	<3	15
2Bsm	18-27	10YR4/3	15	GrLFS	MA sw	0-0.06	CMD	FM, FF	—	<10
2Cd	27-48	10YR4/2	25	GrLFS	MA	0-0.06	CMD	—	—	<10

Pit 1 was excavated in the far southeast corner of the site, in an area proposed for a stormwater facility. It was typical Alderwood soils with densic till at 27+ inches depth; harder till at 48 inches.

Pit 2

Horiz	Dpth	Col	CF	Txt	Struc	Perc	Mott	Roots	OM	%C
Fill1	0-23	mixed	25	GrLFS	MA	0-0.06	CMD	MF, CM	4	15
Fill2	23-33	10YR4/1	10	LFS	MA	0-0.06	CMD	CF	<3	<10
2Cd	33-60	10YR4/2	35	VGrLFS	MA	0-0.06	CMD	—	<3	<10
3C	60+	10YR4/3	--	LFS	WFSBk	0.6	—	—	<3	<10

Pit 2 was located farther north in the same proposed stormwater facility area. The surface was reworked fill and native surface over densic till and with loamy fine sand below.

Pit 3

Horiz	Dpth	Col	CF	Txt	Struc	Perc	Mott	Roots	OM	%C
Fill	0-19	10YR3/2	40	VGrLFS	MA	<0.2	--	MF, CM	4	<10
A	19-24	10YR3/2	40	VGRSL	MA	<0.2	--	MF	6	12
Bs	24-34	10YR3/3	40	VGRSL	MA	0.6-2	--	CF	<3	12
Bsm	34-38	10YR4/3	60	GrLFS	MA	<0.6	CMD	CF	<3	<10
2Cd	38-48	10YR4/3	60	GRLFS	MA/SG	<0.6	CMD	FF	<3	<10
2Cd2	48+	10YR4/2	50	VGrLFS	MA	0-0.06	—	—	<3	<10

Alderwood series. Fill over gravelly over densic till.

Pit 4

Horiz	Dpth	Col	CF	Txt	Struc	Perc	Mott	Roots	OM	%C
A	0-5	10YR3/2	15	GrSL	WFG	<0.6	—	MF, CM	6	12
Bs	5-18	10YR3/3	15	GrSL	WFSBk	06-2	—	CF	4	15
2Bsm	18-27	10YR4/3	35	VGrLFS	MA	<0.6	CMD	—	<3	12
2Cd	27-66+	10YR4/2	40	VGrLFS	MA	0-0.06	CMD	—	<3	<10

Alderwood series. Densic till at 27 inches; very gravelly

Pit 5

Horiz	Dpth	Col	CF	Txt	Struc	Perc	Mott	Roots	OM	%C
Fill	0-30	10YR5/4	15	GrSL	MIXED	2-6	—	CM	3	--
B1	30-39	10YR5/4	15	GrSL	MMSBk	2-6	—	CM	<3	18
B2	39-52	10YR5/4	15	GrSL	MMSBK	2-6	--	CM	<3	18
C1	52-90	10YR6/3	0	SiL	MA	0.6-2	--	FM	<3	18
C2m	90-120	10YR4/2	35	VGRSL	MA	0.06-0.2	CMD	—	<3	<10

Soil surface slopes to east. Soil pit measurements are taken from the high side. Base of pit varies from 5-7 feet below grade, dependent on where one take the measurement. From 0-30 is old fill – estimated at 50-100 years old. Below that, the buried surface is full of charcoal. The fill is about 40% coarse fragments with sandy loam fine fraction texture and weakly cemented zones. Estimated percolation rate of 2-6 inches per hour through the fill.

Pit 6

Horiz	Dpth	Col	CF	Txt	Struc	Perc	Mott	Roots	OM	%C
Fill	0-72	mixed	gravel – sandy loam – woody debris – concrete chunks....							
B	72-84	10YR5/4	40	VGRSL	WFSBK	6-20	--	--	<3	15
C1	84-156	2.5Y4/3	50	XGrLMS		SG	20+	--	--	<3<10
C2	156-192	2.5Y4/3	50	XGrLMS		SG	20+	--	--	<3<10

Six feet of mixed fill (not structural) overlying very to extremely gravelly sandy substrates with high infiltration potential.

Pit 7

This pit is located in the base of the gravel pit approximately 20 feet lower in elevation than Pit 6. Surface topo here is significantly different than what is shown on GeoData. The pit was dug to 7 feet, where groundwater was encountered. The surface to about 3 feet depth was mixed from gravel pit activities; substrate from 3-7 feet was clean sorted sand and gravel (glacial flood deposit).

Pit 8

This pit is at the east end of an old gravel pit excavation near the northwest site corner, in an area proposed for stormwater facilities.

0-9 inches:	The surface was saturated and compacted fill;
9-16 inches:	10YR5/4 gravelly sandy loam – dry
16-84 inches:	Weakly cemented layered ablative till – expect to be saturated during winter months
84-138 inches:	Loose medium to fine sand with occasional lenses holding up water; damp but not saturated. May be wet in winter, but possibly dry between upper saturated layer and underlying groundwater table.
138-180 inches:	Wet but not saturated. No mottling, but deep enough that it may not have adequate OM content to support microbial population that creates the mottling patterns. Groundwater at 14.5 feet depth, expected to rise in winter months.

Pit 9

Pit is located at west end of same old excavation. The surface is not saturated, nor is there any ablative till layer as was observed in Pit 8. The substrate is medium to fine sand from surface to 14.5 feet depth. No gravels. Saturated at 14.5 feet. There was a buried, green plastic, 6" diameter perforated pipe extending to about 15 feet depth that appears to have been either an old monitoring well of some sort or a drain. There was no silica sand screen and no bentonite. Estimated to have been in place at least 10-20 years. It was full of sand, so long since non-functional.

Pit 10

Pit is located right at the southwest corner of Cooper Ridge parcel, or at NW corner of main (central) Sundberg parcel. Mixed fill (non-structural) to 10 feet depth. Possibly disturbed native at 11 feet. The fill smells of diesel or oil; it has large chunks of concrete, asphalt, large boles of wood and construction debris. May be an old dump.

Pit 11
Pit is located southeast of Pit 10 about 100 feet in an area where we noticed earlier had black, non-native material pushed out of scattered mole holes. Fill to 12 feet depth. Pit base at 13.5 feet. Surface 3 feet is compacted and saturated; has a lot of coarse woody debris – 12-18 inch diameter tree boles that may have been placed to create a "corduroy" road surface across the saturated fill. At 12 feet, we broke through the base of fill into clean gravelly to very gravelly medium sand that appeared to be draining. However, that rate of inflow from the saturated fill above was greater than the rate of drainage; the pit was filling. The lowest fill had old Olympia oyster shells, which suggests that some old road may have been surfaced with shell waste from the waterfront (about 100 years old).

Pit 12
Pit was located east of the dirt road running up the west side of the gravel pit, and directly northwest of a small sediment pond on the west side of the gravel pit. 0-8 feet of massive random fill; severely compacted and completely impermeable. Water ponding at 6 feet depth. From 8-10 feet, an old disturbed sandy native surface. Possibly seasonally saturated, but not saturated today.

Pit 13
Pit located in northern portion of proposed southwest stormwater facility. 0-4 feet was relatively clean loamy sand fill. From 4-10 feet, the fill was old asphalt and concrete – structural fill. From 10-11 feet (pit base) – loose 100% woody debris. Did not reach native material.

Pit 14
Pit located in southern portion of proposed southwest stormwater facility. 0-2 feet is mottled sandy loam and loam sand mixed; no woody debris. From 2-12 feet – mixed fill with large logs, chunks of concrete and asphalt (2 feet or more in diameter), rebar; metal strips, cedar planks. Most of the asphalt and concrete debris is at 8-11 feet depth. Water was seeping in rapidly at 12 feet. The substrate below 12 feet was coarse sand, and appears to be native material. Possible that the seeping was from water trapped in fill, but appears to be coming from sandy substrates.

Pit 15
Pit was located about 80 feet east of double-wide trailer south of entry road. Top foot is mottled sandy loam. From 1-7 feet, mixed extremely gravelly sandy loam fill with about 15% woody debris. Fill includes concrete chunks; burn debris, and the base of the fill slopes deeper to the south. So it appears we are digging at the northern edge of a deeper fill hole. Below 7 feet depth, the substrate is native material – extremely gravelly loamy sand with color suggesting that it might once have been within about 3 feet of a native surface. The substrates are seeping rapidly and saturated below 7 feet depth (fill interface).

Pit 16
Pit is located in what may have been parking area west of old shop about 500 feet east and slightly north of Pit 15.
0-32 inches: The surface is clean fill – extremely gravelly loam sand with no wood and no garbage.
32-65 inches: Extremely gravelly loam sand native material with weakly cemented gravels.
65 inches to 11 feet depth: Extremely gravelly coarse sand with Mn stains on rock bases in a series of lenses of gravel.
11-12 feet: Uncemented medium sand – not wet or mottled.

Pit 17
Pit is located in southern portion of a secondary potential stormwater area west of wetland and east of shop (about 400 feet east of Pit 16). This pit had fill to 10+ feet. From 0-6 feet, the upper fill was mixed sandy loam with construction debris and a strong odor of diesel or oil. Below 6 feet, the fill was mostly large logs and lumber, possibly from an old log building. The lumber was squared off logs with notched ends – most pieces about 6-8 feet long (RR ties?). The pit base at 10 feet was still in fill, but was saturated, so we stopped digging since the fill pit sidewalls were unstable. Water was also seeping from 3 feet depth – from above a secondary fill layer. We thought it possible that the water at 10 feet was the same surface elevation as in the wetland to the east?

Pit 18
Pit located farther north, and slightly west of Pit 17 (about 300 feet).
0-7 feet: Relatively clean very gravelly sandy loam fill, massive and mixed with minor amounts of wire, coarse wood, etc. Seeping at 7 feet.
7-9 feet: Older fill with about 60% by volume coarse and fine woody debris and other fill material, including an old tire sidewall.
9-15 feet: The substrate was gleyed and mottled massive coarse sandy loam. Colors indicate saturation, but it is not saturated today. This material is possibly a native material base, but is disturbed and mixed.

Pit 19

Pit is located farther north and slightly west (about 300 feet from Pit 18), just south of cross-site gravel road.
0-30 inches: Massive, dark-brown fine sandy loam fill.
30-40 inches: Massive, severely gleyed silt loam fill.
40 inches to 11 feet: Older fill with dark brownish black color and a great deal of bark (about 25%). The balance is very gravelly sandy loam fill. Possibly a place where logs were stripped of bark?
Seeping at 40 inches, but not below.

Pit 20
Pit is located about 200-300 feet north and slightly west of Pit 19; Profile very similar to Pit 19
0-26 inches: Massive, dark-brown fine sandy loam fill.
26-36 inches: Massive, severely gleyed silt loam fill.
36 inches to 11 feet: Older fill with dark brownish black color and a great deal of bark (about 25%). The balance is very gravelly sandy loam fill.
11 feet+: started to hit a lighter colored layer with concrete chunks.

Pit 21
Pit is located on a wide flat area northwest of the double-wide trailer, and north of the main west to east gravel road. Surface here looks very different than what is shown on GeoData topography maps.
0-13 inches: Very gravelly sandy loam/ loamy sand fill surface; brown colored
13-30 inches: Very gravelly sandy loam/ loamy sand fill; gleyed and mottled (suggesting seasonal saturation)
30 inches to 6 feet: dark brown very gravelly sandy loam with about 10% metal debris
6 feet to 12 feet: Extremely gravelly coarse sand – almost blue in color, indicating seasonally saturated, but no mottles and not 100% saturated today. Water was seeping from top of occasional weakly cemented lenses of sandy gravelly material. Expect more water later in the winter as series of perched water tables develop in this zone.

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOL	GROUP NAME
COARSE GRAINED SOILS More than 50% Retained on No. 200 Sieve	GRAVEL More than 50% Of Coarse Fraction Retained on No. 4 Sieve	GRAVEL WITH < 5 % FINES	GW	Well-Graded GRAVEL
			GP	Poorly-Graded GRAVEL
		GRAVEL WITH BETWEEN 5 AND 15 % FINES	GW-GM	Well-Graded GRAVEL with silt
			GW-GC	Well-Graded GRAVEL with clay
			GP-GM	Poorly-Graded GRAVEL with silt
			GP-GC	Poorly-Graded GRAVEL with clay
		GRAVEL WITH > 15 % FINES	GM	Silty GRAVEL
			GC	Clayey GRAVEL
	SAND More than 50% Of Coarse Fraction Passes No. 4 Sieve	SAND WITH < 5 % FINES	SW	Well-Graded SAND
			SP	Poorly-Graded SAND
		SAND WITH BETWEEN 5 AND 15 % FINES	SW-SM	Well-Graded SAND with silt
			SW-SC	Well-Graded SAND with clay
			SP-SM	Poorly-Graded SAND with silt
			SP-SC	Poorly-Graded SAND with clay
		SAND WITH > 15 % FINES	SM	Silty SAND
			SC	Clayey SAND
FINE GRAINED SOILS More than 50% Passes No. 200 Sieve	SILT AND CLAY	Liquid Limit Less than 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
		Liquid Limit 50 or more	MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS			PT	PEAT

NOTES:

(1) Soil descriptions are based on visual field and laboratory observations using the classification methods described in ASTM D-2488. Where laboratory data are available, classifications are in accordance with ASTM D-2487.

(2) Solid lines between soil descriptions indicate a change in the interpreted geologic unit. Dashed lines indicate stratigraphic change within the unit.

(3) Fines are material passing the U.S. No. 200 Sieve.

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Unified Soil Classification System (USCS)
Sundberg Estates
2200 Cooper Point Road NW
Olympia, Washington

Project No.: A-245	January 2015	**Figure A-1**

AGES, LLC

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Test Pit TP-1

DATE: December 23, 2014 LOGGED BY: BPK ELEV:

Depth (feet)	Soil Description	Notes M%	Notes Other
0	**FILL:** sand with silt and gravel, trace topsoil, loose, moist.		
	TOPSOIL		
	Gray mottled orange silty **SAND** with gravel, medium dense,moist (SM)		
	Tan **SAND** with silt, fine-grained sand, medium dense, moist. (SP-SM) (Outwash)		
5	Gray **SILT** with sand, fine-grsined sand, medium stiff, moist. (SM) (Outwash)		
	Tan **SAND** with silt, fine-grained sand, medium dense, moist. (SP-SM) (Outwash)		
10	Test Hole terminated at a depth of 10.0 feet below surface grades.		
	No groundwater seepage encountered.		

Test Pit TP-2

DATE: December 23, 2014 LOGGED BY: BPK ELEV:

Depth (feet)	Soil Description	Notes M%	Notes Other
0	**FILL:** Topsoil, sand, gravel, tree roots, woody debris, loose, moist.		
	TOPSOIL		
5	Brown mottled orange **GRAVEL** with silt and sand, medium dense,moist. (GP-SM) (Outwash)		▼
10	Test Hole terminated at a depth of 9.0 feet below surface grades.		
	Moderate groundwater seepage encountered at 8.0 feet below surface grades.		

Figure A-2

Project No.: A-245

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Test Pit TP-3

DATE: December 23, 2014 LOGGED BY: BPK ELEV:

Depth (feet)	Soil Description	Notes M%	Notes Other
0	Gray mottled orange **SAND** with silt and gravel, cobbles to 6 inches, medium dense, moist. (SP-SM) (Outwash) (Possible Old Fill)		
	Gray **SAND** with silt and gravel, medium dense, moist. (SP-SM) (Outwash) (Possible Old Fill)		
5	Reddish-brown **GRAVEL** with silt and sand, cobbles to 4 inches, medium dense, moist. (GP-GM) (Possible Original Surface Layer)		
	Grayish-brown **GRAVEL** with sand, trace silt, cobbles to 6 inches, medium dense, moist. (GP) (Outwash)		
10	Test Hole terminated at a depth of 9.0 feet below surface grades. No groundwater seepage encountered.		

Test Pit TP-4

DATE: December 23, 2014 LOGGED BY: BPK ELEV:

Depth (feet)	Soil Description	Notes M%	Notes Other
0	**FILL:** Brown and tan silty sand with gravel, loose, moist.		
	FILL: Brown sand with silt and gravel, some topsoil, loose, moist.		
	FILL: Bluish-gray sandy silt loose, moist.		▼
	TOPSOIL		
5	Gray **SAND** with gravel, coarse-grained sand, cobbles to 4 inches, medium dense, moist. (SP) (Outwash)		
10	Test Hole terminated at a depth of 9.0 feet below surface grades. Light groundwater seepage encountered from 3.5 to 4.0 feet below the surface.		

Figure A-3

Project No.: A-245

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Test Pit TP-5

DATE: December 23, 2014 LOGGED BY: BPK ELEV:

Depth (feet)	Soil Description	Notes M%	Notes Other
0	**FILL:** Alternating layers of Brown silty sand with gravel and bluish-gray silt with sand, loose, moist.		
5	**FILL:** Topsoil, gravel, sand, tree roots, woody debris, and occasional large pieces of wood, loose, moist.		
10	Gray **GRAVEL** with silt and sand, medium dense, moist. (GP-GM) (Outwash)		
	Test Hole terminated at a depth of 12.0 feet below surface grades. No groundwater seepage encountered.		

Test Pit TP-6

DATE: December 24, 2014 LOGGED BY: BPK ELEV:

Depth (feet)	Soil Description	Notes M%	Notes Other
0			
5	**FILL:** Topsoil, gravel, sand, garbage, tree roots, woody debris, loose, moist.		▼
10			
	Test Hole terminated at a depth of 10.0 feet below surface grades. Light groundwater seepage encountered at 3.5 feet below surface grades.		

Figure A-4

Project No.: A-245

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Test Pit TP-7

DATE: December 24, 2014 LOGGED BY: BPK ELEV:

Depth (feet)	Soil Description	Notes M%	Notes Other
0	**FILL:** Sand, silt, gravel, and topsoil, loose, moist.		
5	Gray **GRAVEL** with silt and sand, cobbles to 6 inches, medium dense, moist. (GP-GM) (Outwash)		
10	Test Hole terminated at a depth of 10.0 feet below surface grades. No groundwater seepage encountered.		

Test Pit TP-8

DATE: December 24, 2014 LOGGED BY: BPK ELEV:

Depth (feet)	Soil Description	Notes M%	Notes Other
0			
5	**FILL:** Alternating layers of brown silty gravel with sand, brown silty sand with gravel, bluish-gray silt with sand and gravel, and topsoil with woody debris, loose, moist.		
10	Gray **GRAVEL** with silt and sand, medium dense, moist. (GP-GM) (Outwash)		
	Test Hole terminated at a depth of 13.0 feet below surface grades. No groundwater seepage encountered.		

Figure A-5

Project No.: A-245

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Test Pit TP-9

DATE: December 24, 2014 LOGGED BY: BPK ELEV:

Depth (feet)	Soil Description	Notes M%	Notes Other
0	Tan **SAND** with silt and gravel, cobbles to 3 inches, medium dense, moist. (SP-SM) (Outwash) (Possible Old Fill)		▼
5	Gray **SAND** with silt, trace gravel, medium dense, moist. (SP-SM) (Outwash) (Possible Old Fill)		▼
	Brown **GRAVEL** with silt and sand, cobbles to 4 inches, medium dense,moist. (GP-GM) (Outwash) (Possible Original Surface Layer)		
10	Test Hole terminated at a depth of 8.0 feet due to heavy sidewall caving. Light groundwater seepage encountered at 3.5 feet, and heavy groundwater seepage encountered at 5.5 feet below surface grades.		

Test Pit TP-10

DATE: December 24, 2014 LOGGED BY: BPK ELEV:

Depth (feet)	Soil Description	Notes M%	Notes Other
0	**FILL:** Topsoil, woody debris		
	FILL: Brown to reddish-orange silty sand with gravel, loose, moist.		
5	**FILL:** Topsoil, gravel, sand, silt, cobbles to 6 inches, woody debris, loose, moist. Large logs from 7 to 8 feet.		
10	Test Hole terminated at a depth of 8.0 feet due to large logs. No groundwater seepage encountered.		

Figure A-6

Project No.: A-245

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Test Pit TP-11

DATE: December 24, 2014 LOGGED BY: BPK ELEV:

Depth (feet)	Soil Description	Notes M%	Notes Other
0	**TOPSOIL**		
	Reddish-orange silty **SAND** with gravel, medium dense, moist. (SM)		
5	Gray **GRAVEL** with silt and sand, cobbles to 6 inches, medium dense, moist. (GP-GM) (Outwash)		▼
	Test Hole terminated at a depth of 8.0 feet due to heavy sidewall caving.		
10	Moderate groundwater seepage encountered at 6.5 feet below surface grades.		

Test Pit TP-12

DATE: December 24, 2014 LOGGED BY: BPK ELEV:

Depth (feet)	Soil Description	Notes M%	Notes Other
0	Gray **GRAVEL** with silt and sand, cobbles to 4 inches, medium dense, moist. (GP-GM) (Outwash)		
	Gray **SAND**, trace silt and gravel, fine-grained sand, medium dense, moist. (SP) (Outwash)		
5	Gray **GRAVEL** with silt and sand, cobbles to 4 inches, medium dense, moist. (GP-GM) (Outwash)		▼
	Test Hole terminated at a depth of 7.0 feet belowsurface grades.		
10	Light groundwater seepage encountered at 5.5 feet below surface grades.		

Figure A-7

Project No.: A-245

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Test Pit TP-13

DATE: December 24, 2014 LOGGED BY: BPK ELEV:

Depth (feet)	Soil Description	Notes M%	Notes Other
0	Tan silty **SAND** with gravel, cobbles to 4 inches, medium dense, moist. (SM) (Outwash)		
5	Test Hole terminated at a depth of 5.0 feet due to heavy sidewall caving. No groundwater seepage encountered.		
10			

Figure A-8

Project No.: A-245

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: B1 Well #: MW1 Page: 1 of 1

Start Date/Time: 11/09/20; 0830	Boring Depth (ft): 15	Well Depth (ft): 15
End Date/Time: 11/09/20; 0915	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): 8	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): 10.9	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 241.9	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.065914, -122.941671	Filter Pack: Monterey #2 sand

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Sample ID	DEPTH (ft)
0							OL—Organic silts with gravel (20%), dark yellowish brown topsoil			0
							SM—Silt and sand with cobbles (30%), olive	0.2		
							SM—Silt and sand with cobbles and gravel (10—20%), olive	0.3		
5								0.3		5
				Soil	0930		SM—Sand and silt with gravel (40—50%), olive	0.3	B1-7	
10							SM—Sand and silt with very little gravel , olive	0.3		10
							SM —Sand and silt with increasing gravel and cobbles, olive	0.2		
15				Soil	1000			0.2	B1-15	15

NOTES: Groundwater sample MW1-111220 collected 11/12/20 at 1500. Wellhead PID = 0.0 ppm and LEL = 0.0%.

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: B2 Well #: MW2 Page: 1 of 1

Start Date/Time: 11/10/20; 1200	Boring Depth (ft): 15	Well Depth (ft): 15
End Date/Time: 11/10/20; 1245	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): 11.5	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): 12.4	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 214.2	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.068592, -122.940474	Filter Pack: Monterey #2 sand

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Sample ID	DEPTH (ft)
0										0
							SM—Sandy silt with cobbles and gravel (50%), olive	0.6		
								0.7		
5							CL—Clay with cobbles and gravel (30%), gray	0.8		5
				Soil	1245			0.6	B2-7/ B2-7a	
10								0.5		10
							SP—Very fine grained sands; well sorted, dark gray	0.6		
								0.8	B2-15/ B2-15a	
15				Soil	1245					15

NOTES: Groundwater sample MW2-111320 collected 11/13/20 at 1130. Wellhead PID = 0.2 ppm and LEL = 0.0%.

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: B3 Well #: MW3 Page: 1 of 1

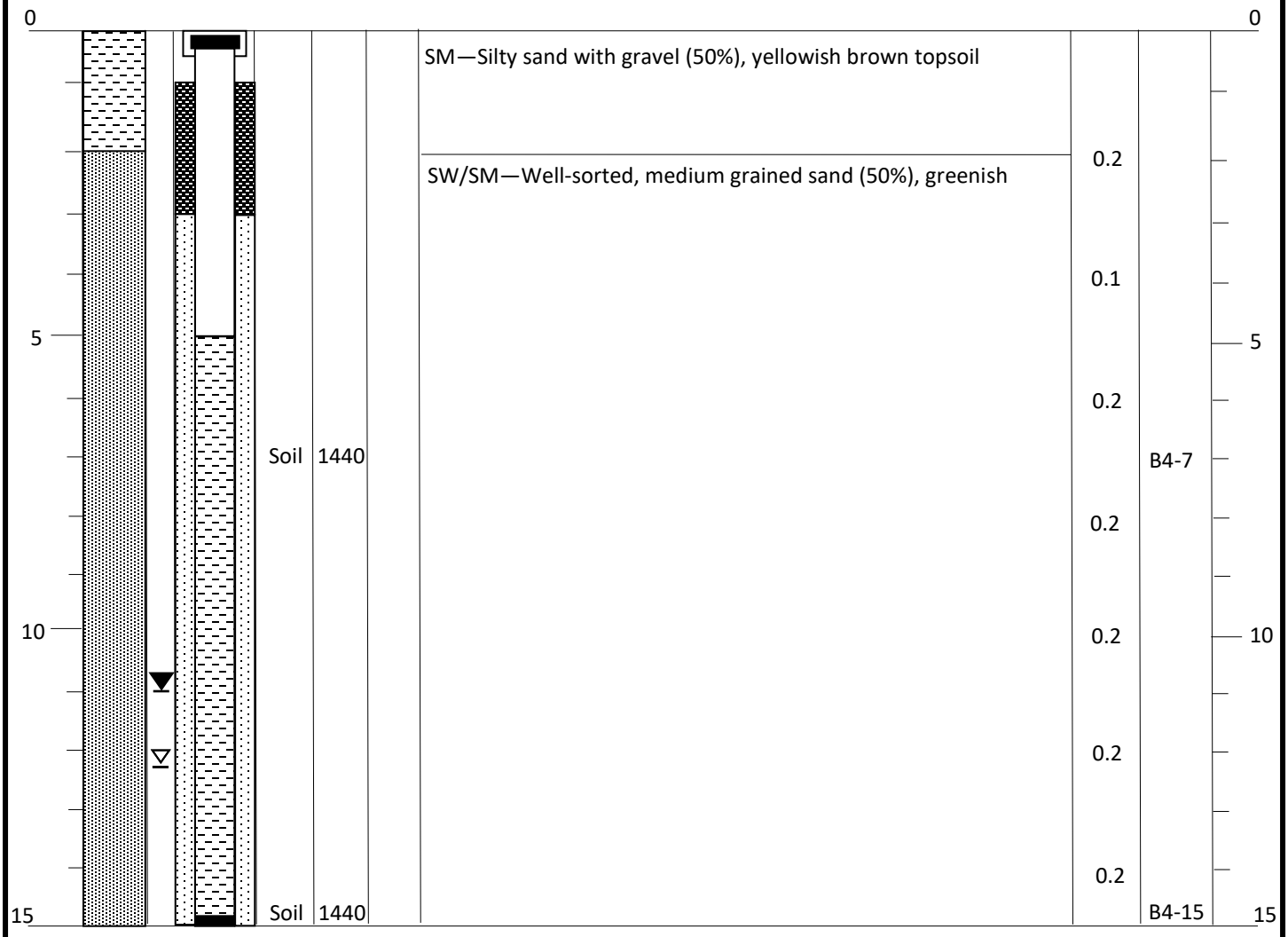
Start Date/Time: 11/09/20; 1040	Boring Depth (ft): 15	Well Depth (ft): 15
End Date/Time: 11/09/20; 1120	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): 7.5	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): 8.2	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 248.7	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.066258, -122.936654	Filter Pack: Monterey #2 sand

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Sample ID	DEPTH (ft)
0							OH—Silt and gravel grading to silty clay with gravel. Rounded cobbles and gravel (~5—10%), dark olive topsoil			0
							PT—Peat and highly organic silt with wood fragments and small amount of rounded cobbles (0.25—8.5 inches), black	0.3		
								0.5		
5								0.5		5
				Soil	1100				B3-7/ B3-7a	
								0.4		
10				Soil	1100			26.2	B3-10	10
							GM to GP—Gray, silty gravel and saturated gravelly silt with rounded cobbles (20%) grading to sandy gravel then to gravel, gray	1.2		
								0.6	B3-15/ B3-15a	
15				Soil	1100					15

NOTES: Additional sample collected from 10 feet bgs due to elevated PID reading. Groundwater sample MW3-111420 and duplicate MW3-111420a collected 11/14/20 at 0915 and 0930, respectively. Wellhead PID = 0.0 ppm and LEL = 0.0%.

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: B4 Well #: MW4 Page: 1 of 1

Start Date/Time: 11/09/20; 1430	Boring Depth (ft): 15	Well Depth (ft): 15
End Date/Time: 11/09.20; 1330	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): 11	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): 12.2	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 214.1	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.068348, -122.940434	Filter Pack: Monterey #2 sand



NOTES: Groundwater sample MW4-111320 collected 11/13/20 at 0930. Wellhead PID = 0.5 ppm and LEL = 0.0%.

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: B5 Well #: MW5 Page: 1 of 1

Start Date/Time: 11/10/20; 1240	Boring Depth (ft): 15	Well Depth (ft): 15
End Date/Time: 11/10/20; 1325	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): 10.5	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): 11.3	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 218.9	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.067991, -122.940416	Filter Pack: Monterey #2 sand

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Sample ID	DEPTH (ft)
0							GM—Silty, sandy, gravel mixture, dark reddish brown			0
							PT—Peat with gravel and clay (fill material), black	0.5		
								0.7		
5							Metal fragments at 5 to 5.5 feet			5
				Soil	1330		SW—Medium grained sand with gravel and cobbles (10—20%), olive gray	0.6	B5-7	
								0.9		
10								Note		10
							SP—Very fine grained sands; well sorted, dark gray	0.6		
								0.5		
15				Soil	1330				B5-15	15

NOTES: A PID reading could not be collected from 10 feet bgs due to the presence of scrap metal. Groundwater sample MW5-111220 collected 11/12/20 at 1615. Wellhead PID = 0.3 ppm and LEL = 40.0%.

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: B6 Well #: MW6 Page: 1 of 1

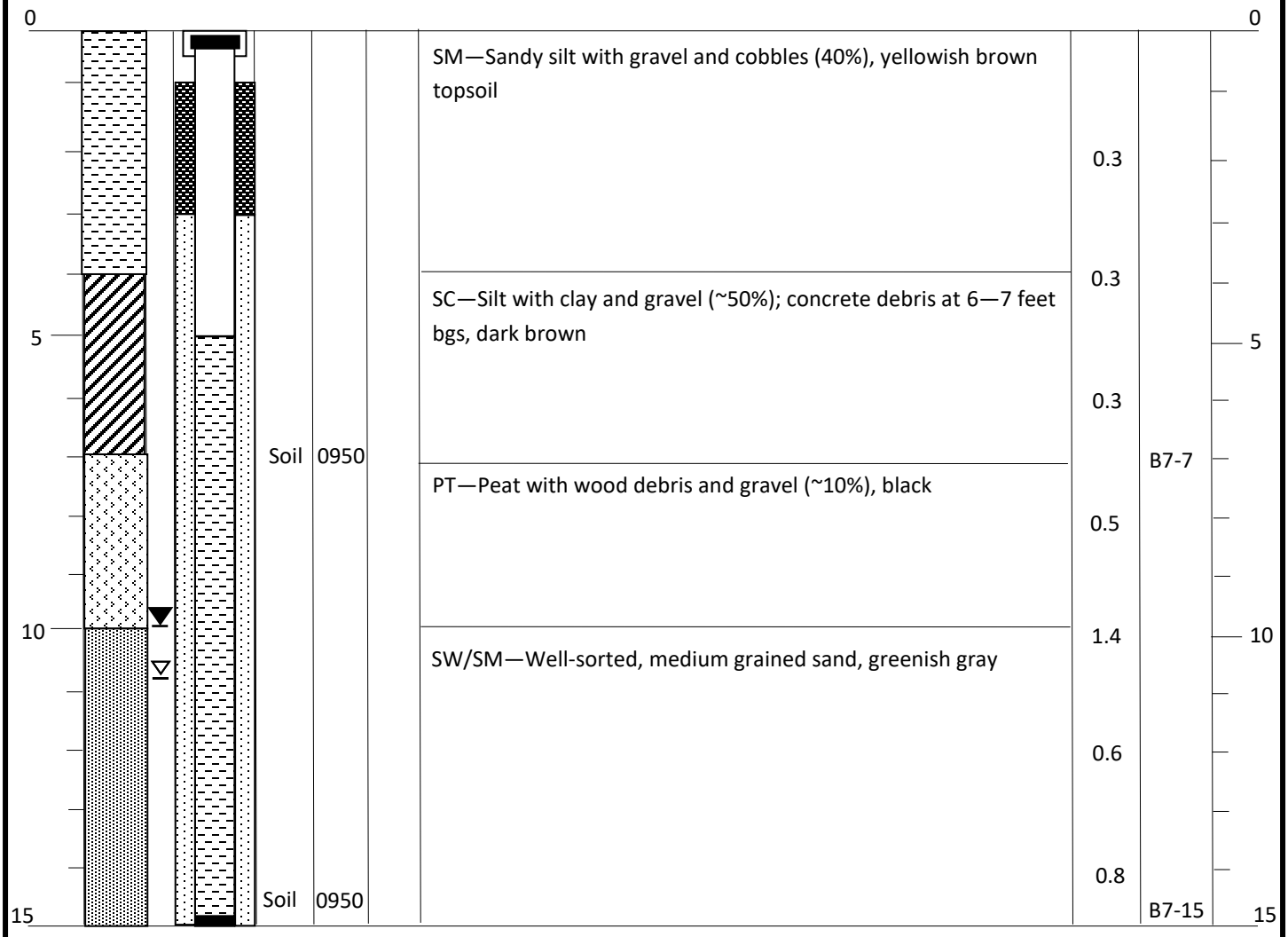
Drilling Start Date/Time:	Boring Depth (ft): 15	Well Depth (ft): 15
Drilling End Date/Time:	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): 9	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): 9.9	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 247.4	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.066719, -122.941400	Filter Pack: Monterey #2 sand

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Sample ID	DEPTH (ft)
0							SM—Sandy silt with gravel and cobbles (40%), yellowish brown topsoil	0.6		0
								0.6		
5							Large (4 inch by 2 inch) oval/sphere asphalt boulder	0.7		5
				Soil	1200		SW—Medium grained sand with gravel and cobbles (10—20%), greenish gray	0.8	B6-7	
10								0.7		10
								0.7		
15				Soil	1200			1.0	B6-15	15

NOTES: Groundwater sample MW6-111220 collected 11/12/20 at 1220. Wellhead PID = 0.1 ppm and LEL = 0.0%.

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: B7 Well #: MW7 Page: 1 of 1

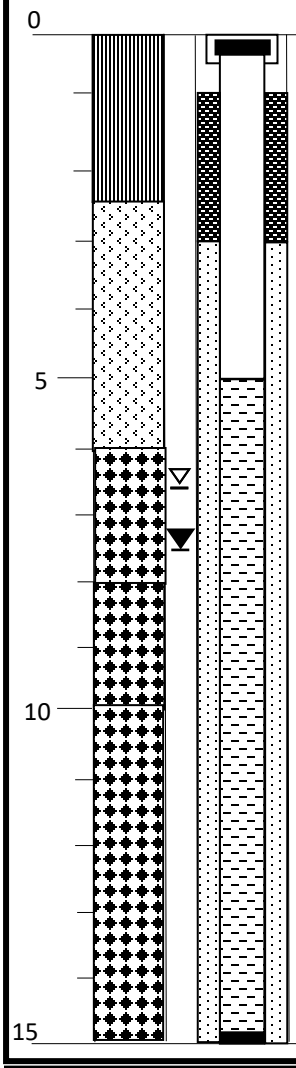
Start Date/Time: 11/10/20; 0900	Boring Depth (ft): 15	Well Depth (ft): 15
End Date/Time: 11/10/20; 0945	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): 10	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): 10.8	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 226.3	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.066375, -122.941490	Filter Pack: Monterey #2 sand



NOTES: Groundwater sample MW7-111220 collected 11/12/20 at 1345. Wellhead PID = 0.2 ppm and LEL = 0.0%.

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: B8 Well #: MW8 Page: 1 of 1

Drilling Start Date/Time:	Boring Depth (ft): 15	Well Depth (ft): 15
Drilling End Date/Time:	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): 7.5	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): 6.5	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 254.2	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.065724, -122.940326	Filter Pack: Monterey #2 sand

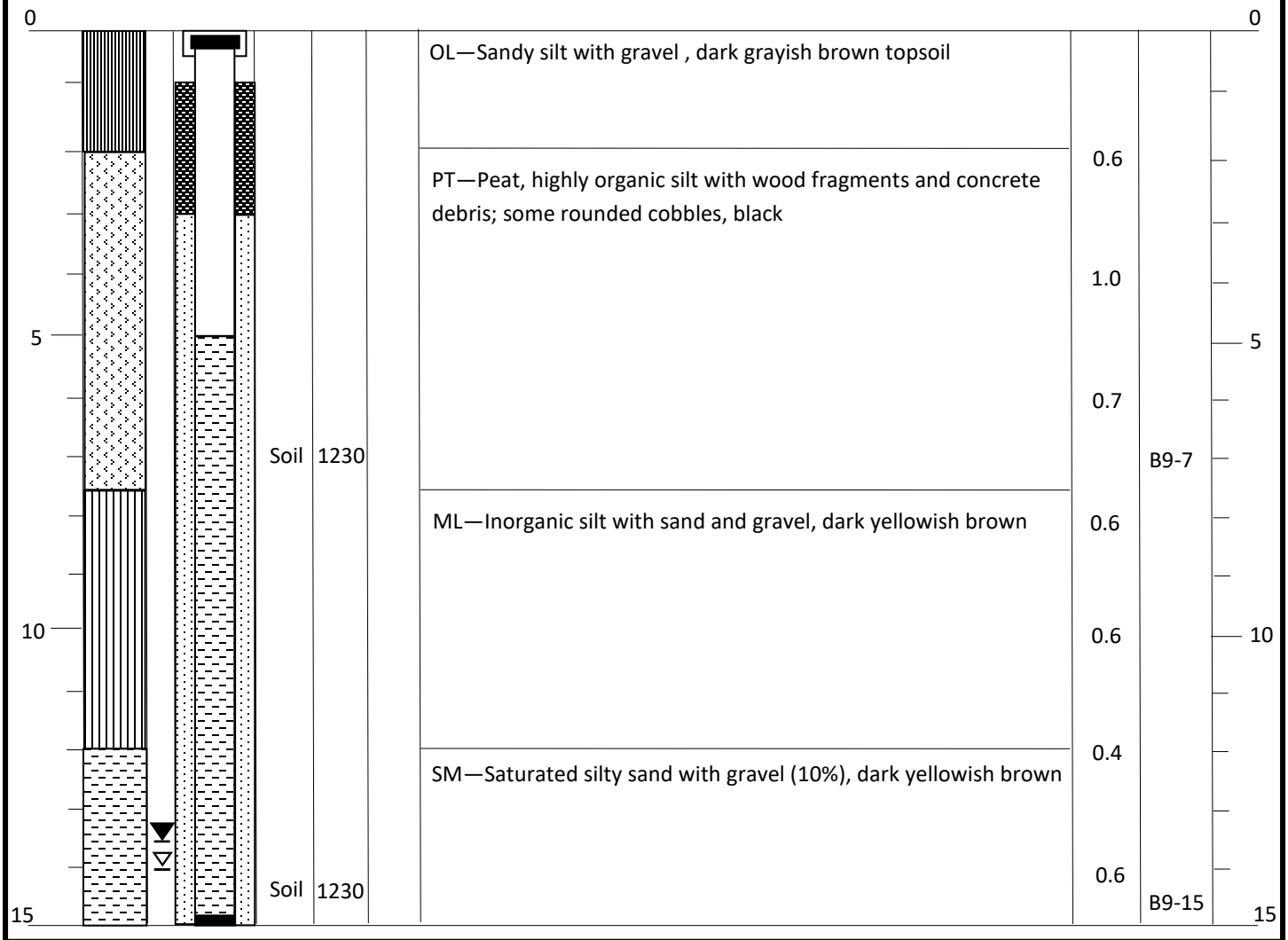


DEPTH (ft)	COLLECT: Sample Type	COLLECT: Time	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Sample ID	DEPTH (ft)
0				OL—Organic silt and sand with gravel and rounded cobbles, dark yellowish brown topsoil	0.3		0
				PT—Peat, highly organic silt with wood fragments and concrete debris; some rounded cobbles, black	0.4		
5	Soil	1030		GM—Sandy, silty gravel, olive	0.3	B8-7	5
				GM—Silty gravel with sand (~30%) and cobbles, olive	0.3		
10				GM—Gravel with sand (20—40%), pale olive	0.2		10
					0.3		
15	Soil	1030			0.2	B8-15	15

NOTES: Groundwater sample MW8-111420 collected 11/14/20 at 1030. Wellhead PID = 0.3 ppm and LEL = 0.0%.

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: B9 Well #: MW9 Page: 1 of 1

Start Date/Time: 11/09/20; 1140	Boring Depth (ft): 15	Well Depth (ft): 15
End Date/Time: 11/09/20; 1220	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): 13.5	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): 14.0	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 261.3	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.066891, -122.936880	Filter Pack: Monterey #2 sand



NOTES: Approximately 1 foot of water was present in MW9 and was declared effectively dry; a groundwater sample could not be collected.

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: 10 Well #: MW10 Page: 1 of 1

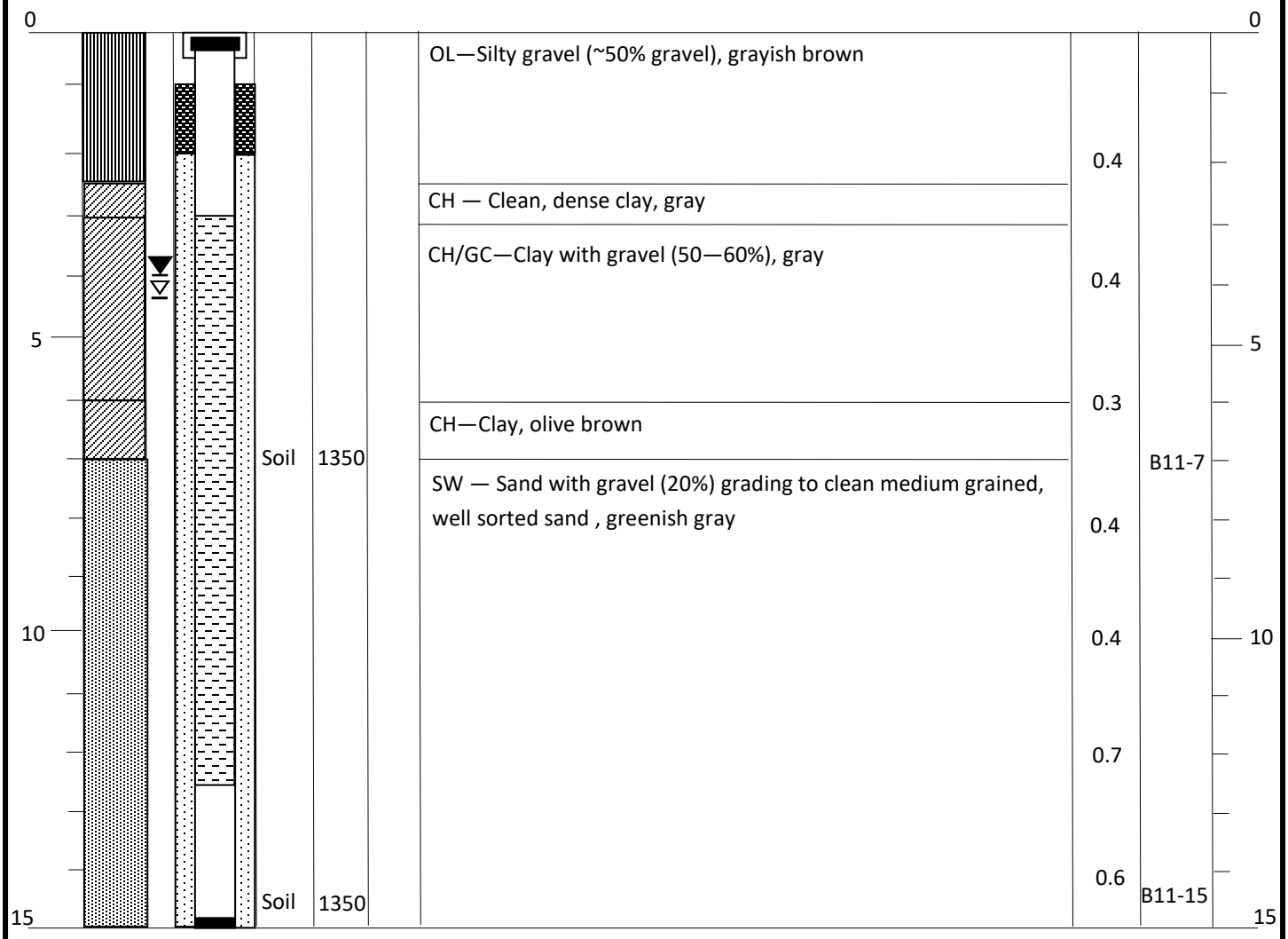
Start Date/Time: 11/09/20; 1240	Boring Depth (ft): 15	Well Depth (ft): 15
End Date/Time: 11/09/20; 1320	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): NA	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): NA	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 249.8	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.067168, -122.937087	Filter Pack: Monterey #2 sand

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Sample ID	DEPTH (ft)
0							OH—Clay with gravel and cobbles (~10—15%), brown			0
							PT—Peat with gravel and cobbles (50%), black	0.5		
								0.8		
5								0.6		5
				Soil	1315		GP/SC—Poorly graded gravels with sands, silts, and clays, brown		B10-7	
								0.4		
10								0.4		10
								0.4		
							SW—Well-graded, medium grained sand with gravel (~5—10%) No free water, light olive gray			
15				Soil	1315			0.4	B10-15	15

NOTES: No water was present in MW10 and was declared dry; a groundwater sample could not be collected.

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: 11 Well #: MW11 Page: 1 of 1

Start Date/Time: 11/09/20; 1340	Boring Depth (ft): 15	Well Depth (ft): 15
End Date/Time: 11/09/20; 1415	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): 4	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): 4.3	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 223.7	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.067653, -122.938828	Filter Pack: Monterey #2 sand



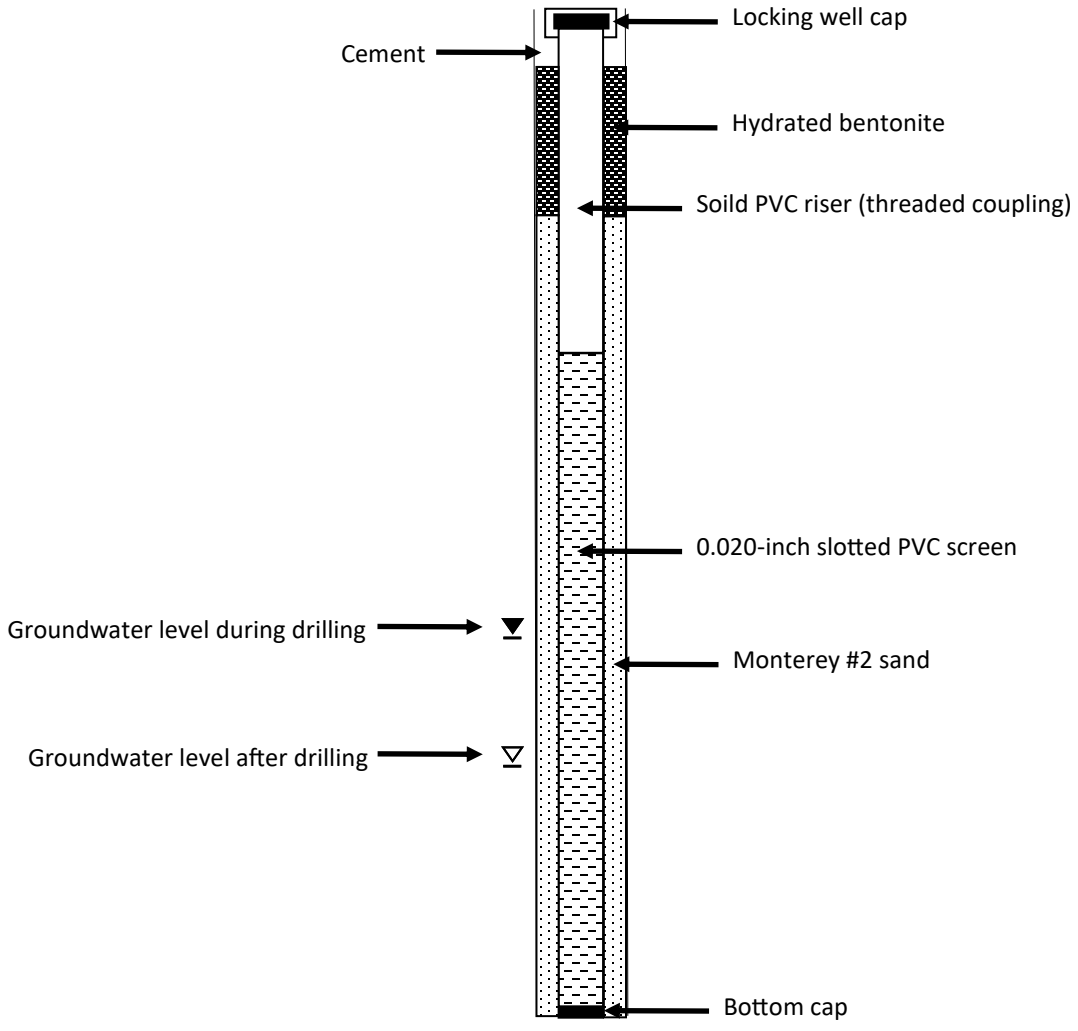
NOTES: Groundwater sample MW11-111420 collected 11/14/20 at 0830. Wellhead PID = 0.3 ppm and LEL = 0.0%.

UNIFIED SOIL CLASSIFICATION SYSTEM—ASTM D2488

GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
GM	Silty gravels, gravel-sand-silt mixtures
SW	Well-graded sands, gravelly sands, little or no fines
SP	Poorly graded sands, gravelly sands, little or no fines
SM	Silty sands, sand-silt mixtures
SC	Clayey sands, sand-clay mixtures

ML	Inorganic silts & very fine sands, silty or clayey sands
CL	Inorganic clays of low to medium plasticity, gravelly clays
OL	Organic silts and organic silty clays of low plasticity
CH	Inorganic clays of high plasticity, fat clays
OH	Organic clays of medium to high plasticity, organic silts
PT	Peat and other highly organic soils

MONITORING WELL DIAGRAM



Associated Environmental Group, LLC

Client:	**AEG-CLIENTS**
Project:	**21-142**
Address:	**2200 Cooper Point Road SW, Olympia, WA**

BORING LOG

Boring No. **B-12**

Page: **1 of 1**

Drilling Start Date:	**06/24/2021 08:25**	Boring Depth (ft):	**15.0**
Drilling End Date:	**06/24/2021 09:01**	Boring Diameter (in):	**2.00**
Drilling Company:	**Cascade**	Sampling Method(s):	**Direct Push**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**11.0**
Drilling Equipment:	**Track Mounted Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Tim**	Ground Surface Elev. (ft):	
Logged By:	**B. Dilba**	Location (Lat, Long):	

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0				DP	08:32		4.00	(0') Poorly graded SAND with gravel (SP); mostly fine-coarse grained sand, little fine-coarse gravel, trace silt, medium dense, moist, light brown		B12-3	0
5				DP	08:36		5.00	(3.5') Poorly graded SAND with silt (SP-SM); mostly fine grained sand, trace fine-coarse gravel, few silt, dense, moist, dark bluish-gray			5
10		▽		DP	08:45		5.00	(6') Poorly graded GRAVEL with sand (GP); mostly fine-coarse grained gravel, some fine-coarse sand, dense, moist, light bluish-gray		B12-8	10
15								(15') Boring terminated		B12-12	15
20											20

NOTES:

Associated Environmental Group, LLC	Client: AEG-CLIENTS	BORING LOG
	Project: 21-142	Boring No. B-13
	Address: 2200 Cooper Point Road SW, Olympia, WA	Page: 1 of 1

Drilling Start Date:	**06/24/2021 09:11**	Boring Depth (ft):	**15.0**
Drilling End Date:	**06/24/2021 09:40**	Boring Diameter (in):	**2.00**
Drilling Company:	**Cascade**	Sampling Method(s):	**Direct Push**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**7.0**
Drilling Equipment:	**Track Mounted Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Tim**	Ground Surface Elev. (ft):	
Logged By:	**B. Dilba**	Location (Lat, Long):	

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0				DP	09:14		4.00	(0') Poorly graded SAND with gravel (SP); mostly fine-coarse grained sand, little fine-coarse gravel, trace silt, medium dense, moist, light brown			0
								(2.5') Poorly graded SAND (SP); mostly fine-medium grained sand, trace silt, loose, dry, light bluish-gray		B13-4	
5				DP	09:22		5.00				5
										B13-8	
10				DP	09:30		5.00				10
										B13-14	
15								(15') Boring terminated			15
20											20

NOTES:

Associated Environmental Group, LLC

Client:	**AEG-CLIENTS**
Project:	**21-142**
Address:	**2200 Cooper Point Road SW, Olympia, WA**

BORING LOG

Boring No. **B-14**

Page: **1 of 1**

Drilling Start Date:	**06/24/2021 10:07**	Boring Depth (ft):	**15.0**
Drilling End Date:	**06/24/2021 10:31**	Boring Diameter (in):	**2.00**
Drilling Company:	**Cascade**	Sampling Method(s):	**Direct Push**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**10.0**
Drilling Equipment:	**Track Mounted Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Tim**	Ground Surface Elev. (ft):	
Logged By:	**B. Dilba**	Location (Lat, Long):	

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0				DP	10:12		4.00	(0') Poorly graded SAND with gravel (SP); mostly fine-coarse grained sand, little fine-coarse gravel, trace silt, medium dense, moist, light brown			0
								(3.5') Poorly graded SAND with silt (SP-SM); mostly fine grained sand, trace fine-coarse gravel, few silt, dense, moist, dark bluish-gray		B13-4	
5				DP	10:14		5.00	(6') Poorly graded GRAVEL with sand (GP); mostly fine-coarse grained gravel, some fine-coarse sand, dense, moist, light bluish-gray		B13-8	5
10		▽		DP	10:21		5.00	(10.5') Well-graded SAND (SW); fine-coarse grained, medium dense, wet, light reddish-brown		B13-14	10
15								(15') Boring terminated			15
20											20

NOTES:

Associated Environmental Group, LLC	Client: AEG-CLIENTS	BORING LOG
	Project: 21-142	Boring No. B-15
	Address: 2200 Cooper Point Road SW, Olympia, WA	Page: 1 of 1

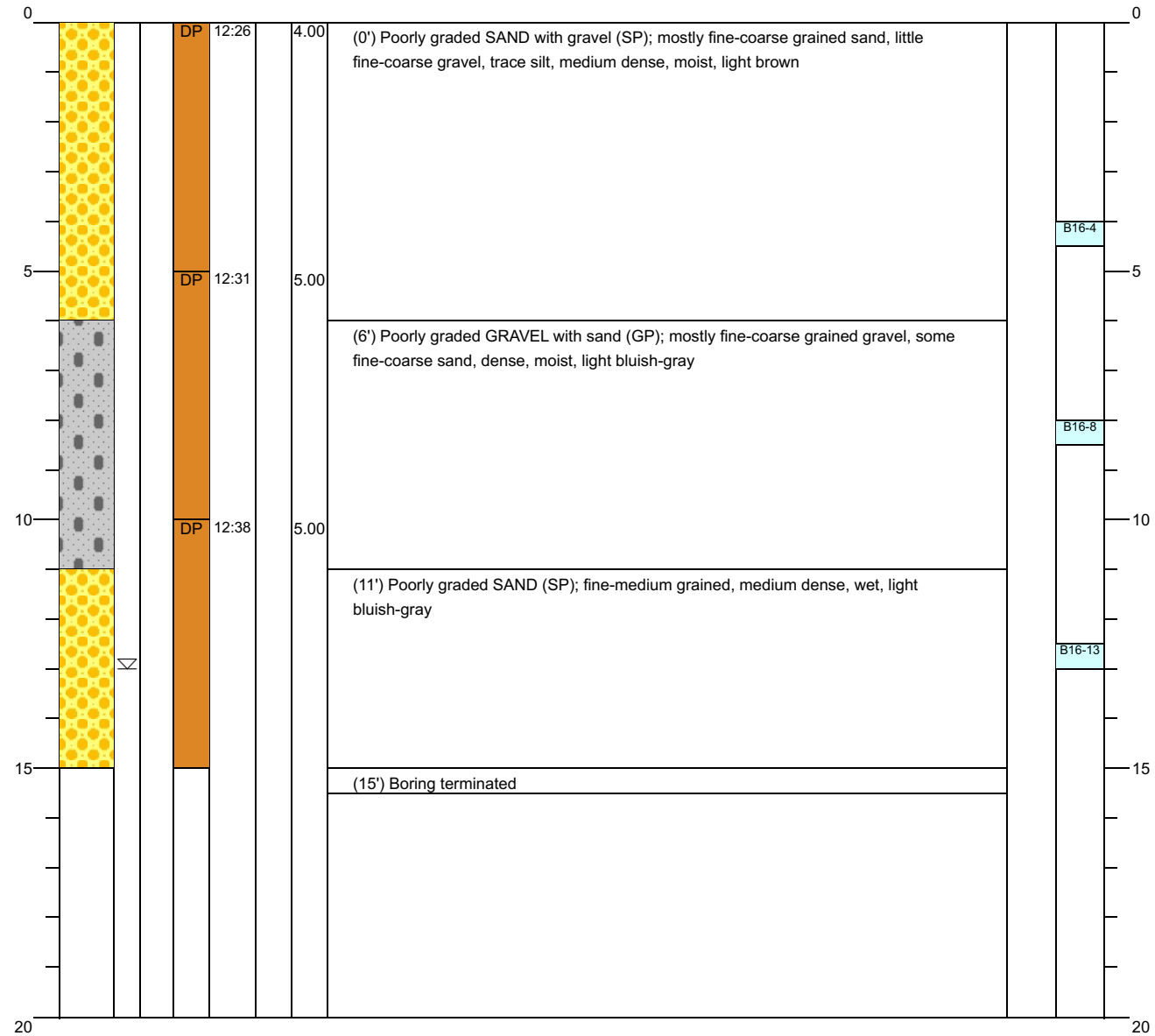
Drilling Start Date:	**06/24/2021 11:04**	Boring Depth (ft):	**15.0**
Drilling End Date:	**06/24/2021 11:31**	Boring Diameter (in):	**2.00**
Drilling Company:	**Cascade**	Sampling Method(s):	**Direct Push**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**12.0**
Drilling Equipment:	**Track Mounted Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Tim**	Ground Surface Elev. (ft):	
Logged By:	**B. Dilba**	Location (Lat, Long):	

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0				DP	11:08		4.00	(0') Poorly graded SAND with gravel (SP); mostly fine-coarse grained sand, little fine-coarse gravel, trace silt, medium dense, moist, light brown			0
								(3.5') Poorly graded SAND with silt (SP-SM); mostly fine grained sand, trace fine-coarse gravel, few silt, dense, moist, dark bluish-gray		B15-4	
5				DP	11:11		5.00	(6') Poorly graded GRAVEL with sand (GP); mostly fine-coarse grained gravel, some fine-coarse sand, dense, moist, light bluish-gray			5
										B15-8	
10		▽		DP	11:16		5.00	(10.5') Poorly graded SAND with gravel (SP); some fine-coarse grained sand, some fine-coarse gravel, dense, wet, light bluish-gray			10
										B15-14	
15								(15') Boring terminated			15
20											20

NOTES:

Associated Environmental Group, LLC	Client: AEG-CLIENTS	BORING LOG
	Project: 21-142	Boring No. B-16
	Address: 2200 Cooper Point Road SW, Olympia, WA	Page: 1 of 1

Drilling Start Date:	**06/24/2021 12:24**	Boring Depth (ft):	**15.0**
Drilling End Date:	**06/24/2021 12:55**	Boring Diameter (in):	**2.00**
Drilling Company:	**Cascade**	Sampling Method(s):	**Direct Push**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**13.0**
Drilling Equipment:	**Track Mounted Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Tim**	Ground Surface Elev. (ft):	
Logged By:	**B. Dilba**	Location (Lat, Long):	



NOTES:

Associated Environmental Group, LLC	Client: AEG-CLIENTS	BORING LOG
	Project: 21-142	Boring No. B-17
	Address: 2200 Cooper Point Road SW, Olympia, WA	Page: 1 of 1

Drilling Start Date:	**06/24/2021 13:10**	Boring Depth (ft):	**15.0**
Drilling End Date:	**06/24/2021 13:40**	Boring Diameter (in):	**2.00**
Drilling Company:	**Cascade**	Sampling Method(s):	**Direct Push**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**8.0**
Drilling Equipment:	**Track Mounted Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Tim**	Ground Surface Elev. (ft):	
Logged By:	**B. Dilba**	Location (Lat, Long):	

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0				DP	13:19		4.00	(0') Poorly graded SAND with gravel (SP); mostly fine-coarse grained sand, little fine-coarse gravel, trace silt, medium dense, moist, light brown		B17-4	0
5				DP	13:21		5.00	(6') Poorly graded GRAVEL with sand (GP); mostly fine-coarse grained gravel, some fine-coarse sand, dense, moist, light bluish-gray		B17-8	5
10		▽		DP	13:26		5.00	(8') Poorly graded SAND (SP); fine-medium grained, medium dense, wet, light bluish-gray		B17-13	10
15								(15') Boring terminated			15
20											20

NOTES:

Associated Environmental Group, LLC	Client: AEG-CLIENTS	BORING LOG
	Project: 21-142	Boring No. B-18
	Address: 2200 Cooper Point Road SW, Olympia, WA	Page: 1 of 2

Drilling Start Date:	**06/25/2021 06:35**	Boring Depth (ft):	**20.0**
Drilling End Date:	**06/25/2021 07:115**	Boring Diameter (in):	**2.00**
Drilling Company:	**Cascade**	Sampling Method(s):	**Direct Push**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Track Mounted Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Tim**	Ground Surface Elev. (ft):	
Logged By:	**B. Dilba**	Location (Lat, Long):	

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0				DP	06:37		4.00	(0') Poorly graded SAND with gravel (SP); mostly fine-coarse grained sand, little fine-coarse gravel, trace silt, medium dense, moist, light brown			0
								(3.5') Poorly graded SAND with silt (SP-SM); mostly fine grained sand, trace fine-coarse gravel, few silt, dense, moist, dark bluish-gray		B18-4	
5				DP	06:44		5.00	(6') Poorly graded GRAVEL with sand (GP); mostly fine-coarse grained gravel, some fine-coarse sand, dense, moist, light bluish-gray		B18-8	5
10				DP	06:54		5.00	(9') Poorly graded SAND (SP); fine-medium grained, trace silt, medium dense, moist, light reddish-brown		B18-13	10
15				DP	07:09		5.00	(15') Poorly graded GRAVEL with sand (GP); mostly fine-coarse grained gravel, some fine-coarse sand, dense, moist, light bluish-gray			15
								(17.5') Poorly graded SAND (SP); fine-medium grained, trace silt, medium dense, moist, light reddish-brown		B18-18	
20											20

NOTES:

Associated Environmental Group, LLC

Client:	**AEG-CLIENTS**	**BORING LOG**	
Project:	**21-142**	**Boring No.**	**B-18**
Address:	**2200 Cooper Point Road SW, Olympia, WA**	**Page:**	**2 of 2**

Drilling Start Date:	**06/25/2021 06:35**	Boring Depth (ft):	**20.0**
Drilling End Date:	**06/25/2021 07:115**	Boring Diameter (in):	**2.00**
Drilling Company:	**Cascade**	Sampling Method(s):	**Direct Push**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Track Mounted Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Tim**	Ground Surface Elev. (ft):	
Logged By:	**B. Dilba**	Location (Lat, Long):	

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
20								(20') Boring terminated			20
25											25
30											30
35											35
40											40

NOTES:

Associated Environmental Group, LLC	Client: AEG-CLIENTS	BORING LOG
	Project: 21-142	Boring No. B-19
	Address: 2200 Cooper Point Road SW, Olympia, WA	Page: 1 of 2

Drilling Start Date:	**06/25/2021 07:42**	Boring Depth (ft):	**20.0**
Drilling End Date:		Boring Diameter (in):	**2.00**
Drilling Company:	**Cascade**	Sampling Method(s):	**Direct Push**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**17.0**
Drilling Equipment:	**Track Mounted Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Tim**	Ground Surface Elev. (ft):	
Logged By:	**B. Dilba**	Location (Lat, Long):	

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0				DP	07:42		4.00	(0') Poorly graded SAND with gravel (SP); mostly fine-coarse grained sand, little fine-coarse gravel, trace silt, medium dense, moist, light brown			0
								(3.5') Poorly graded SAND with silt (SP-SM); mostly fine grained sand, trace fine-coarse gravel, few silt, dense, moist, dark bluish-gray		B19-5	
5				DP	06:44		5.00				5
								(6') Poorly graded GRAVEL with sand (GP); mostly fine-coarse grained gravel, some fine-coarse sand, dense, moist, light bluish-gray		B19-10	
10				DP	07:55		5.00				10
										B19-15	
15		▽		DP	08:07		5.00				15
								(17') Poorly graded SAND (SP); coarse grained, loose, wet, light bluish-gray		B19-17	
20											20

NOTES:

Associated Environmental Group, LLC

Client:	**AEG-CLIENTS**	**BORING LOG**
Project:	**21-142**	**Boring No. B-19**
Address:	**2200 Cooper Point Road SW, Olympia, WA**	**Page: 2 of 2**

Drilling Start Date:	**06/25/2021 07:42**	Boring Depth (ft):	**20.0**
Drilling End Date:		Boring Diameter (in):	**2.00**
Drilling Company:	**Cascade**	Sampling Method(s):	**Direct Push**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**17.0**
Drilling Equipment:	**Track Mounted Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Tim**	Ground Surface Elev. (ft):	
Logged By:	**B. Dilba**	Location (Lat, Long):	

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
20								(20') Boring terminated			20
25											25
30											30
35											35
40											40

NOTES:

Associated Environmental Group, LLC	Client: AEG-CLIENTS	BORING LOG
	Project: 21-142	Boring No. B-20
	Address: 2200 Cooper Point Road SW, Olympia, WA	Page: 1 of 1

Drilling Start Date:	**06/25/2021 09:03**	Boring Depth (ft):	**15.0**
Drilling End Date:		Boring Diameter (in):	**2.00**
Drilling Company:	**Cascade**	Sampling Method(s):	**Direct Push**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Track Mounted Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Tim**	Ground Surface Elev. (ft):	
Logged By:	**B. Dilba**	Location (Lat, Long):	

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0				DP	09:06		4.00	(0') Poorly graded SAND with gravel (SP); mostly fine-coarse grained sand, little fine-coarse gravel, trace silt, medium dense, moist, light brown			0
5				DP	09:13		5.00	(3.5') Poorly graded SAND with silt (SP-SM); mostly fine grained sand, trace fine-coarse gravel, few silt, dense, moist, dark bluish-gray		B20-5	5
								(6') Poorly graded GRAVEL with sand (GP); mostly fine-coarse grained gravel, some fine-coarse sand, dense, moist, light bluish-gray			
10				DP	09:24		0.60	(9') Lean CLAY (CL); trace fine sand, mostly clay, medium plasticity, hard, moist, light bluish-gray		B20-10	10
15								(15') Boring terminated		B20-15	15
								(17') Poorly graded SAND (SP); coarse grained, loose, wet, light bluish-gray			
20											20

NOTES:

Associated Environmental Group, LLC	Client: AEG-CLIENTS	BORING LOG
	Project: 21-142	Boring No. B-21
	Address: 2200 Cooper Point Road SW, Olympia, WA	Page: 1 of 1

Drilling Start Date:	**06/25/2021 10:01**	Boring Depth (ft):	**15.0**
Drilling End Date:	**06/25/2021 10:20**	Boring Diameter (in):	**2.00**
Drilling Company:	**Cascade**	Sampling Method(s):	**Direct Push**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**10.0**
Drilling Equipment:	**Track Mounted Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Tim**	Ground Surface Elev. (ft):	
Logged By:	**B. Dilba**	Location (Lat, Long):	

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0				DP	10:04		4.00	(0') Poorly graded SAND with gravel (SP); mostly fine-coarse grained sand, little fine-coarse gravel, trace silt, medium dense, moist, light brown			0
								(3.5') Poorly graded SAND with silt (SP-SM); mostly fine grained sand, trace fine-coarse gravel, few silt, dense, moist, dark bluish-gray		B21-5	
5				DP	10:07		5.00	(6') Poorly graded GRAVEL with sand (GP); mostly fine-coarse grained gravel, some fine-coarse sand, dense, moist, light bluish-gray			5
								(9') Poorly graded SAND (SP); fine-medium grained, trace silt, medium dense, moist, light reddish-brown		B21-10	
10		▽		DP	10:12		5.00				10
								(15') Boring terminated		B21-15	
15								(15') Poorly graded GRAVEL with sand (GP); mostly fine-coarse grained gravel, some fine-coarse sand, dense, moist, light bluish-gray			15
								(17.5') Poorly graded SAND (SP); fine-medium grained, trace silt, medium dense, moist, light reddish-brown			
20											20

NOTES:

APPENDIX C

Initial Draft RI Report
ENPRO 2021

APPENDIX C

Initial Draft RI Report, ENPRO, 2021

Green Cove Park Development
Remedial Investigation Report – V.1

Green Cove Park Development
2200 Cooper Point Road NW
Olympia, Washington
Parcels: 81700000000, 74202900000,
74202500200, and 74202500100

Ecology Facility Site ID No.: 82016954

Prepared for:

Green Cove Park, LLC/Westbrook Investments
429 29th Street NE, Suite A
Puyallup, Washington 98372

Prepared by:

ENPRO Environmental
151 Hekili Street, Suite 210
Kailua, Hawaii 96734

808.262.0909 (t)

Signature:

Licensure stamp here

ENPRO Project Number 1903-00129-RI
March 5, 2021

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Acronyms

ENPRO	ENPRO Environmental
AMEC	AMEC Earth & Environmental, Inc.
AST	above-ground storage tank
bgs	below ground surface
BTEX	benzene, ethylbenzene, toluene, and xylenes
CARA	critical aquifer recharge area
CLARC	Cleanup Levels and Risk Calculation
Client	Green Cove Park, LLC/Westbrook Investments
COC	contaminant/chemical of concern
CSCS	confirmed or suspected contaminated sites
CSM	conceptual site model
CUL	cleanup levels
cy	cubic yards
DOH	Washington State Department of Health
Ecology	Washington State Department of Ecology
EIM	Environmental Information Management
ENPRO	ENPRO Environmental
EPA	U.S. Environmental Protection Agency
Phase I ESA	Phase I Environmental Site Assessment
FSID	facility site dentification number
FSP	field sampling plan
IDW	investigation-derived waste
LEL	lower explosive limit
LNAPL	light non-aqueous phase liquid
mg/kg	milligrams/kilograms
mg/L	milligrams per liter
MTCA	Model Toxics Control Act
NACD 88	North American Vertical Datum of 1988
ORP	oxidation-reduction potential
PAH	polycyclic aromatic hydrocarbon

PCB	polychlorinated biphenyl
PID	photoionization detector
ppm	parts per million
PQL	practical quantitation limit
PCL	proposed cleanup level
PVC	polyvinyl chloride
QAPP	Quality Assurance Project Plan
QA/QC	quality assurance/quality control
RI	Remedial Investigation
RIWP	Remedial Investigation Work Plan
SVOC	semi-volatile organic compounds
TCE	trichloroethylene
TPH	total petroleum hydrocarbons
USDA	United States Department of Agriculture
USCS	Unified Soil Classification System
USGS	United States Geological Survey
UST	underground storage tank
VI	vapor intrusion
VCP	Voluntary Cleanup Program
VOA	volatile organic analysis
VOC	volatile organic compound
WAC	Washington Administrative Code

1.0 INTRODUCTION

On behalf of Green Cove Park, LLC/Westbrook Investments (Client), ENPRO Environmental (ENPRO) has prepared this Remedial Investigation (RI) for the former Sundberg Gravel Pit at 2200 Cooper Point Road NW in Olympia, Washington (the Site).

The Site is listed in the Washington State Department of Ecology's (Ecology's) database of Confirmed or Suspected Contaminated Sites (CSCS) list as Facility Site Identification Number (FSID) 82016954 for the following reasons, as stated in Ecology's *Initial Investigation Field Report* dated March 5, 2020:

- Lack of information on final fate relating to petroleum contaminated soils removed from the underground storage tank (UST) excavation
- Lack of characterization and remediation of the two visually impacted areas relating to drum storage
- Lack of compliance with the Washington State Model Toxics Control Act (MTCA) Table 830-1 sampling for the test pit projects of 2007 and 2008
- A 2015 aerial map of the Site shows fill piles of unknown origin at multiple locations; no testing has been completed at the Site after 2015.

The primary objective of this RI is to address the above listed data gaps. This RI documents the nature and extent of contamination and defines and evaluates corrective action alternatives for any identified contamination.

Following this introductory section, the remaining sections of this document are organized as follows:

- Section 2 – Field Investigations
- Section 3 – Conceptual Site Model (CSM)
- Section 4 – Summary, Conclusions, and Recommendations
- Section 5 - References

The information presented in this document is organized in accordance with the 2020 checklist and suggested template prepared as guidance by the Ecology Voluntary Cleanup Program (VCP), with supplemental information added where appropriate.

Appendices to this report include:

- Appendix A – Site Figures

Includes location map, aerial photographs, sample locations, laboratory results exceeding cleanup levels, surface soil map, groundwater contour map, geological cross-sections, and the CSM

- Appendix B – Photographs

  Includes Site photographs and representative photographs of field work and sample collection

- Appendix C – Exploratory Logs

  Includes copies of the logs for soil cores and monitoring wells completed during the RI

- Appendix D – Analytical Data for All Constituents

  Presents laboratory analytical data for all constituents, including those not detected in soil or groundwater (note that data tables in the main body of the report present data only for constituents detected in Site media to improve readability)

- Appendix E – Remedial Investigation Work Plan (RIWP)

  Provides background information and describes the soil and groundwater sampling and analysis plan

- Appendix F – Field Sampling Plan (FSP)

  Presents the collection and handling methods for soil and groundwater samples

- Appendix G – Quality Assurance Project Plan (QAPP)

  Describes quality assurance/quality control (QA/QC) procedures for the analytical laboratory

- Appendix H – Health and Safety Plan (HASP)

  Provides an overview of health and safety procedures for field investigation activities

1.1 GENERAL SITE INFORMATION

Site Name:	Green Cove Park (Former Sundberg Gravel Pit) 2200 Cooper Point Road NW Olympia, Washington 08502
Parcels:	Parcel A: 81700000000 (27.4 acres) Parcel B: 74202900000 (6.79 acres) Parcel C: 74202500200 (4.66 acres) Parcel D: 74202500100 (7.27 acres)
FSID:	82016954
Consultant:	ENPRO Environmental 151 Hekili Street, Suite 210

Kailua, HI 96734
kkim@enproenvironmental.com
808-748-2114

Property Owner: Jerry Mahan
437 29th Street NE, Suite G
Puyallup, Washington 98372
jerrymahan@msn.com
253-868-1100

The Site is zoned Rural Residential/Resource – One Unit per Five Acres (RRR 1/5).

The Site is in northern Olympia, near the west shore of Puget Sound's Budd Inlet (approximately 4,000 feet east of the Site) and is bordered to the north, south, and east by forested areas with rural residences beyond, and on the west by Cooper Point Road NW with a wooded area beyond (AMEC, 2004).

The Site is located between Grass Lake (approximately 6,000 feet southwest) and Kaufman Pond (approximately 2,000 feet northeast).

The Site generally slopes to the west, with regional topography sloping to the northwest. According to the United States Geological Survey (USGS) topographic map for the Tumwater Quadrangle, Washington, the Site is situated at an approximate elevation of 280 feet above mean sea level.

Stormwater runoff from the Site largely flows to the center of the Site (the former gravel pit) via drainage channels, and infiltrates into soil and the shallow most underlying perched aquifer. Stormwater does not recharge the deeper aquifer.

1.2 SITE HISTORY

AMEC Earth & Environmental, Inc. (AMEC) completed a Phase I Environmental Site Assessment (Phase I ESA) for the Site in 2004 (see Section 2.1). AMEC's report indicates the Site (Parcel A) had been used as a log storage yard and gravel pit since at least 1960 to the 1990s. During the time the Site operated as the Sundberg Gravel Pit, an UST and garage which supported vehicle maintenance activities had been located on the property (see Figure 3).

Following the end of the gravel pit operations, the UST was removed and assorted fill was placed at the Site, including construction debris (asphalt, concrete, wire, etc.) and wood debris.

Construction debris, wood debris, and random fill have also been reported on-site. The central portion of Parcel A was temporarily used to store lumber.

Parcel A (see Figure 2 and 3) was the location of the majority of the potential environmental concerns detailed in Section 2.1.

Previous investigations at the Site have indicated petroleum odors in two locations and diesel concentrations less than cleanup levels (CUL) in one discrete soil sample collected from the Site (see Section 2.1).

1.3 SITE USE

The Site is currently undeveloped and generally overgrown. The Client intends to develop the Site for residential use. Five wetlands have been identified at the Site (Soundview Consultants, 2020). No development is planned in the wetland areas.

2.0 FIELD INVESTIGATIONS

This section summarizes:

- Previous environmental investigations conducted at the Site
- The scope of this Remedial Investigation (RI)
- Sampling and analysis procedures
- Site geology and hydrogeology
- Proposed cleanup standards
- Analytical results

2.1 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

Underground Storage Tank Removal (Stemen, 1993)

The report entitled, "*Underground Storage Tank Removal Located at 2200 Cooper Point Road NW, Olympia, Site #011500, County Plot 8170000000"*, prepared by Stemen Environmental, Inc. (Stemen) and dated March 18, 1993 documents the removal of a 12,000-gallon diesel UST from Parcel C on February 8, 1993 (see Figure 3). Stained soil observed around the fill pipe during removal was attributed to delivery overfills and spills. Approximately 25 cubic yards (cy) of impacted soil were excavated from around the fill pipe and placed in a separate stockpile just north of and in line with the eastern half of the excavation.

Analytical results of soil samples collected from the excavation pit and approximately 75 cy of non-impacted soil indicated concentrations of total petroleum hydrocarbons (TPH) less than Ecology's 1993 CUL of 200 parts per million (ppm). Analytical results of a soil sample collected from the impacted soil stockpile indicated a concentration of 390 ppm for TPH. The final disposition of the impacted soil was not documented.

The report indicates a well 750 feet from the UST location, and notes that the water quality was "good." The water table was reported as being below the 50-foot level. No additional information was provided, and the location of the well was not mapped.

Phase I ESA (AMEC, 2004)

The report entitled, "*Phase I ESA: 220 Cooper Point Road NW, Olympia, Washington"*, prepared by AMEC and dated April 2, 2004 assesses 6 parcels, including Parcels A and C of the Site; parcels B and D are not included in the Phase 1 ESA. Parcel A is documented as an industrial property used for gravel mining, with the address of 2200 Cooper Point Road NW. Parcel C was

listed as occupied by a mobile home, well, and septic system, with the address 2721 Park Street NW. However, maps included with the report indicate that the previously listed features were on either Parcel A, B (not included in the report's scope of work), or C of the Site.

AMEC's reconnaissance noted the following:

- One, 500-gallon above-ground storage tank (AST) located near the garage on Parcel C (see Figure 3). The AST was reported as appearing new and in good condition, though it was sitting on gravel without secondary containment. The contents were not identified.
- Eight, 55-gallon drums within the garage, with two additional drums located outside the garage. The drums were stored on gravel with no secondary containment. The contents were not identified.
- Two, 6-foot by 6-foot areas of stained gravel/soil; one within the garage and one outside to the north, near an equipment and truck parking area.

AMEC's report did not indicate on which parcel the garage and nearby AST/drums were located, though from Site knowledge it is on Parcel C (see Figure 3).

AMEC reported an historical recognized environmental condition (REC) related to the former 12,000-gallon diesel UST that had been removed in 1993. AMEC indicated that the contaminated soils described by Stemen in 1993 had been removed and disposed of off-site.

Soil Investigation (Pacific Rim, 2007)

The report entitled, "*Soils Investigation Preliminary*", prepared by Pacific Rim Soil & Water, Inc. (Pacific Rim) and dated November 2, 2007 applies to 11 parcels, including the four parcels associated with the Site, and documents information from 21 test pit locations. Thirty-three soil samples were collected during the investigation.

Fill material with a diesel or oil odor was noted in Pit 10 (0 – 10 feet below ground surface (bgs)), near the northwest corner of Parcel A. Fill material with a strong petroleum odor was also noted in Pit 17 (0 – 6 feet bgs) near the south-central portion of Parcel A.

The following fill material was noted at the Site:

- Construction debris, large logs, and lumber in Pit 10 near the northwestern property boundary of Parcel A
- Woody debris in the form of 12- to 18-inch diameter tree boles in Pit 11 on Parcel A
- "Random fill" in Pit 12 on Parcel A
- Structural fill including asphalt and concrete in Pit 13 on Parcel B
- Logs, asphalt, concrete, rebar, metal strips, and cedar planks in Pit 14 on Parcel B
- Woody debris, concrete, and burn debris in Pit 15 on Parcel C

- Construction debris, large logs, and lumber in Pit 17 on Parcel A
- Woody debris and minor amounts of wire in Pit 18 on Parcel A
- Significant amounts of bark in Pit 19 on Parcel A

Perched groundwater was encountered in several pits in concert with loose gravelly sandy native substrates at depths of 10 to 15 feet bgs.

Phase II ESA (Robinson Noble, 2008)

The report entitled, "*Sundberg Estates Subsurface Investigation (Phase II Environmental Site Assessment)",* prepared by Robinson Noble Saltbush, Inc. (Robinson Noble), dated March 4, 2008, applies to 13 parcels, including the four parcels associated with the Site. This report documents information from 32 test pit locations. Thirty-three soil samples were collected during the investigation and analyzed for diesel-range hydrocarbons via the MWTPH-Dx/Dx-extended method.

Only one sample, collected from Test Pit 6 (near Pacific Rim's Pit 17 on the south-central portion of Parcel A), contained a detectable concentration of diesel-range hydrocarbons. The analytical result of 370 mg/kg was significantly less than the 2008 Model Toxics Control Act (MTCA) Method A Soil CUL of 2,000 mg/kg.

Fill material consisting of approximately 70 percent reworked material from the surrounding region, was noted in all but two test pits. The fill material ranged from compact fine silt, fine sand with clay, silty sand and gravel, sand and gravel, and gravel. The remaining fill material consisted of wood debris in various forms and construction debris (e.g., concrete, asphalt, brick, and solid waste).

Groundwater at the Site was estimated to occur at a depth of 47 feet bgs based on the static water level in a nearby well.

Robinson Noble concluded that the data and evidence did not indicate a need for additional contaminant investigation on any of the parcels.

Geotechnical Report (Ages, 2015)

The report entitled, "*Preliminary Geotechnical Report: Sundberg Estates"*, prepared by Ages, LLC (Ages) and dated January 12, 2015, applies to four parcels, though parcel numbers were not included in the report. It was difficult to ascertain test pit locations in relation to the current Site based on the maps included in the Ages report.

Ages excavated 13 test pits during this investigation. Field exploration indicated the area was generally underlain by fill consisting of sand, silt, gravel, cobbles, and topsoil with varying amounts of tree roots, logs, native sand, sand with silt and gravel, and gravel with silt and sand consistent with glacial outwash. Depth of fill ranged from 1.0 to 12.0 feet bgs.

Groundwater seepage was observed in four of the test pits at depths ranging from 3.5 to 8.0 feet bgs. The groundwater was reported as a seasonally perched water table that develops during the wet winter season.

Phase I ESA (Ages, 2015)

The report entitled, "*Phase 1 Environmental Site Assessment: Sundberg Estates*", prepared by Ages and dated January 30, 2015 included the Site and no additional parcels.

Ages' assessment revealed no evidence of RECs in connection with the Site except for:

- The presence of a 500-gallon AST with unidentified contents and no secondary containment near a detached garage located on the southwestern portion of the Site (previously noted in AMEC 2004)
- Ground staining in the vicinity of 55-gallon drums of unidentified contents within the aforementioned garage and in a parking area near the garage (previously noted in AMEC 2004)
- Fuel odor in two test pits reported by Pacific Rim in their 2007 preliminary soils investigation

Ages noted one water well present on Parcel C and no evidence of the septic system reported in AMEC's 2004 Phase I ESA.

Soil Sampling (Ages, 2015)

The report entitled, "*Environmental Soil Sampling*", prepared by Ages and dated July 20, 2015 included the Site and no additional parcels. The objective of the investigation was to obtain representative samples of soil and tree debris at the Site (the "fill piles" referred to in Ecology's 2020 *Initial Investigation* report, detailed later in this section) following the Ages 2015 Phase I ESA. Samples were analyzed for petroleum and heavy metals.

Eight samples were collected from the soil and tree debris stockpiles. A minor amount of heavy oil (140 mg/kg) was detected in one surface sample from the center of Parcel A (see Figure 2). The following metals were detected in minor concentrations at sample locations on Parcel A:

- Barium: 32.1 – 38.4 µg/g
- Chromium: 16.1 – 25.4 µg/g
- Lead: 5.99 – 7.29 µg/g

Solid Waste Letter (Thurston PH, 2015)

A letter entitled, "*Improper Solid Waste Handling – Former Sundberg Gravel Pit*", prepared by Thurston County Public Health and Social Services Department (Thurston PH) and

dated November 16, 2015 affirms that waste materials previously stored at the Site had been removed or managed according to Thurston PH's directions as follows:

- Brick and concrete materials had been removed
- Wood waste piles had been chipped on-site and used to control soil erosion
- Stumps and root wads remained on-site to be used as a wetland buffer enhancement

Hydrogeologic Report (Earth Solutions, 2016)

Parcel numbers were not included in the *Revised Hydrogeologic Report: Proposed Green Cove Park Residential Development, Cooper Point Road Northwest, Olympia, Washington*, prepared by Earth Solutions NW, LLC (Earth Solutions) and dated October 11, 2016. Based on the map included in the Earth Solutions report, it is ENPRO 's interpretation that this report applies to the Site and does not include additional parcels. The focus of the report was to evaluate potential impacts to surface and subsurface water resources that may result from the proposed development of the Site as a residential community.

Groundwater flow was reported to be to the northeast at a gradient of approximately 0.08 ft/ft. The Site was described as being in a high critical aquifer recharge area (CARA) zone and two potential aquifer conditions were assessed: shallow interflow and deep aquifer.

The report stated that the susceptibility to adversely impact CARA resources has been significantly lowered by replacing permeable native soils with non-permeable fill materials through historical use of the Site. Permeability of Site soils (fill and glacial till) that remain following permitted mining/extraction activities are much lower than the extracted soils. Remaining sandy soils are discontinuous and hydraulic communication is expected to be fairly low and sporadic. Furthermore, due to the mining of well-draining soils from the Site, the recharge potential for wetlands adjacent to the southeast and east of the Site from interflow is considered low.

The sporadic nature of the perched groundwater reported in Ages' 2015 *Preliminary Geotechnical Report* suggests these zones are relatively isolated and do not represent a defined groundwater table or a pervasive interflow regime.

The deeper aquifer is separated by a layer of glacial till and is effectively disconnected from direct recharge.

Based on a review of Ecology's well logs for the area, the static groundwater table is at depths of between 110 to 149 feet below existing grades. The soils overlying the groundwater table contain relatively thick, glacially consolidated, fine-grained deposits that do not transmit water readily to recharge the locally deep groundwater table.

Based on the depth of the local groundwater aquifer and the overlying soils, Earth Solutions concluded that the risk of affecting the functions and values of the deeper aquifer is negligible.

Phase I ESA Addendum (Ages, 2016)

The report entitled, "*Phase I ESA and Geotechnical Report Addendum"*, prepared by Ages and dated October 18, 2016, states that the staining noted in the vicinity of a dilapidated structure (previously indicated as a garage) in the Ages 2015 Phase I ESA appeared to be relatively minor and limited.

Additional empty and partially empty 5-gallon buckets were observed in the vicinity of the dilapidated structure. The labels on these buckets were faded, though a few were decipherable and indicated the contents to include motor oil, hydraulic oil, and paint. The staining and containers were localized in one flat area which appeared to be related to the typical maintenance and repair of motorized vehicles.

The AST referenced in the 2015 Ages Phase I ESA appeared to coincide with the location of the dilapidated structure.

Ages explored subsurface conditions in the existing drain field to the west of the dilapidated structure and did not observe any indication of contamination. Ages concluded the drain field was not used to dump hazardous waste.

Wetlands and Fish and Wildlife Habitat (Soundview Consultants, 2017)

A report entitled, *"Wetlands and Fish and Wildlife Habitat Assessment Report & Buffer Enhancement Plan"* prepared by Soundview Consultants and dated June 14, 2017 (revised September 27, 2018, February 20, 2020, and November 30, 2020), identified five wetlands onsite:

- Wetland A: 7,698 square feet, in the western portion of the Site. A small portion of Wetland A extends offsite to the west
- Wetland B: 14,191 square feet, eastern portion of the Site
- Wetland C: 10,919 square feet, southwestern portion of the Site, to the southeast of Wetland A
- Wetland D: 3,063 square feet, northwestern portion of the Site, to the northeast of Wetland A
- Wetland E: 1,329 square feet, southeastern portion of the Site, to the southeast of Wetland B and is almost entirely located onsite

The wetlands onsite were reported to likely provide limited water quality and hydrologic functions, such as stormwater retention and infiltration, water quality enhancement, and wildlife habitat due to the level of disturbance from the previous gravel mining activities within and surrounding the wetlands.

Technical Memorandum (Robinson Noble, 2019)

A report entitled, "*Technical Memorandum: Green Cove Records Review, Data Gaps Analysis, and Recommendations*", prepared by Robinson Noble for the City of Olympia and dated June 5, 2019 applies to 13 parcels, including the four parcels associated with the Site. This report reviews environmental records provided by the City of Olympia. Despite previously concluding that no additional investigation was needed at the Site (Robinson Noble, 2008), Robinson Noble noted the following potential environmental concerns:

- Potential contamination from fill materials at the Site
- Potential contamination from chemical drums and buckets, the previously used UST, and the previously used AST
- Potential soil contamination from dumping into an on-site septic system
- Potential methane gas concerns from the breakdown of organic materials buried as fill at the Site
- Potential shallow, perched groundwater contamination from fill materials, leaks, or spills

The report lists additional concerns related to the other nine parcels covered by this review but those parcels are not a part of the current Site, thus they are not included in this summary. Further, several of the concerns are not relevant to MTCA cleanup but rather are pertinent to the City land use permitting process.

Robinson Noble references complaints from citizens, citing a concern for potential contamination to the drinking water aquifers. However, Robinson Noble states that the Washington State Department of Health (DOH) source water assessment program mapping application does not show any wellhead protection areas which overlap the Site, thereby making it unlikely that the Site is a potential concern to any public water systems.

Initial Investigation (Ecology, 2020)

The *Initial Investigation Field Report*, prepared by Ecology and dated March 5, 2020, reviewed the following documents:

- 1993 Stemen UST removal report
- 2004 AMEC Phase I ESA
- 2015 Ages Phase I ESA
- 2015 Ages soil sampling report
- 2015 Ages geotechnical report
- 2016 Earth Solutions revised geologic report
- 2016 Ages Phase I ESA and geotechnical report addendum
- 2019 Robinson Noble technical memorandum

Ecology recommended the Site be placed on the CSCS for the following reasons:

- Lack of information on final fate relating to petroleum-contaminated soils removed from the UST excavation
- Lack of characterization and remediation of the two visually impacted areas relating to drum storage
- Lack of compliance with MTCA Table 830-1 sampling for the test pit projects of 2007 and 2008
- A 2015 aerial map of the Site shows fill piles of unknown origin at multiple locations; no testing has been completed at the Site after 2015.

2.2 SITE CHARACTERIZATION

In October 2020, ENPRO completed an RIWP that:

- Summarized prior Site environmental investigations
- Identified data gaps with respect to contaminant sources, migration, and exposure pathways
- Proposed additional environmental investigation to fill the identified data gaps

Ecology provided general comments on ENPRO's RIWP, which were incorporated into the final version (see Appendix E for the final RIWP). The RIWP field work was conducted from November 9 to 13, 2020. The data collection activities included:

- Sampling and analysis of Site soil obtained during:
  - Drilling of 11 soil borings (B1 through B11) (see Figure 4)
  - Collection of 25 surface soils (and two duplicate surface soil samples) (see Figure 5)
- Sampling and analysis of Site groundwater obtained from permanent monitoring wells (MW1 through MW11) (see Figure 4) – Note: per the RIWP, eleven permanent wells were installed to a total depth of 15 feet bgs. Monitoring well MW-10 did not encounter water. An insufficient amount of water was present in MW-9 for proper well development, purging, and sampling. Therefore, only 9 of the 11 permanent wells were sampled.
- Surface water quality parameter measurements, using field instrumentation, were recorded from three locations within the Parcel A wetlands. (see Figure 6)

Soil Borings and Soil Sample Collection

ENPRO engaged Cascade Drilling & Technical Services (Cascade) to complete 11 soil borings in accordance with the requirements of Chapter 173-160 Washington Administrative Code

(WAC) as described in the RIWP (see Figure 4 and Appendix E). Soil borings were advanced using a sonic drill rig and were sampled/monitored as follows:

- Photoionization detector (PID) readings were recorded for every two feet of each boring
- Lower explosive limit (LEL) readings for methane were recorded along the entire core length for each boring
- One soil sample was collected from each boring at approximately 7 feet bgs
- One soil sample was collected from each boring at approximately 15 feet bgs
- An additional soil sample was collected from Boring 3 at a depth of 10 feet bgs, based on a slightly elevated PID reading at this depth

All sampling was conducted by Mr. Ho'ano Rosario, ENPRO's field technician, and overseen by Mr. Kenton Beal, ENPRO's senior Registered Professional Geologist. Soil samples were collected into each of two pre-weighed volatile organic analysis (VOA) vials with a stir bar and two additional pre-weighed vials without a stir bar. In addition, soil was collected into two 8-ounce certified-clean jars. All samples were labelled, recorded on a chain-of-custody form, and packaged in an insulated sample chest for pick-up by the laboratory.

Two duplicate soil samples from B3 (at approximately 7 and 15 feet bgs) were collected as described above in accordance with ENPRO's QAPP (the QAPP is presented in Appendix G).

Each soil sample collected for chemical analysis was assigned a unique sample identification number including the boring number and the depth from which the sample was collected. For example, the soil sample collected from Boring B1 at a depth of seven feet bgs was identified as B1-7 and a duplicate sample collected from Boring B1 at a depth of seven feet bgs was identified as B1-7A.

Mr. Beal visually classified the soils for each boring in accordance with the Unified Soil Classification System (USCS) and Munsell color charts and recorded soil descriptions, field screening results, and other relevant details (e.g. staining, debris, odors, etc.) on ENPRO's boring log form. The boring logs are provided in Appendix C.

Surface Soil Sample Collection

Mr. Rosario, supervised by Mr. Beal, collected 25 surface soil samples and 2 duplicate samples using a laboratory-supplied disposable plastic syringe. Five-gram aliquots were placed into each of two pre-weighed VOA vials with a stir bar, two additional pre-weighed vials without a stir bar, and two 8-ounce certified-clean jars and submitted for analysis. All samples were labelled, recorded on a chain-of-custody form, and packaged in an insulated sample chest for pick-up by the laboratory.

Surface samples were numbered sequentially, for example: SS1, SS2, SS3, etc. and duplicate samples were identified as SS1A, SS2A, SS3A, etc.

Monitoring Wells and Groundwater Sample Collection

Under Mr. Beal's direction, Cascade converted each soil boring to a permanent monitoring well in accordance with Chapter 173-160 WAC. Mr. Beal documented installation of each well, including an as-built well completion diagram (see Appendix C). Wells were constructed with 2-inch-diameter, threaded polyvinyl chloride (PVC) casing. Well screens included a 0.020-inch slotted (20-slot) screen 10 feet in length. A filter pack consisting of silica sand was packed around the well screen. The well screen was installed to intersect the top of the groundwater surface to allow for observation of the potential presence of light non-aqueous phase liquid (LNAPL) free product. The filter pack was installed to a depth approximately 2 feet above the screened interval. Locking well caps were installed in the top of the well casing. Following installation of the well casing, filter pack and seal, the wells were completed with a square (approximately 2 feet by 2 feet) concrete pad (approximately 4 inches thick), and a flush-mounted, traffic-rated well cover.

After installation, each well was measured to determine the depth to groundwater below the top of casing. This measurement was used to calculate the well volume of each well, to determine how much water should be removed for well development. Less than one foot of water was detected in well MW-9 and water was not detected at all in MW-10. The remaining wells were developed using a low-flow peristaltic pump to remove fine-grained material from inside the well casing and filter pack to the extent practical, and to improve hydraulic communication between the well screen and the surrounding water-bearing formation. Each well was developed by removing a minimum of three casing volumes of water. Well development water was observed to be free of visible turbidity after removal of approximately one half well volume. The process is described in detail in Section 4 of the FSP (Appendix F).

Following well development and recharge, the wells were allowed to equilibrate for approximately 24 hours prior to sampling. As part of the groundwater sampling procedure, each well was purged of additional water immediately before collecting samples. Water was purged using a low-volume peristaltic pump, until the effluent was visibly clean, at which point groundwater parameters were recorded to evaluate that samples were obtained from water that was representative of the perched aquifer conditions.

Nine groundwater samples were collected at an ultra-low low flow rate (less than 0.25 liters per minute). Following documentation that the groundwater parameters had stabilized, the peristaltic pump effluent was discharged directly into laboratory-supplied sample containers. A duplicate groundwater sample was collected from MW3 in accordance with the QAPP (Appendix G). All samples were labelled, recorded on a chain-of-custody form, and packaged with ice in an insulated sample chest for delivery to the laboratory.

Each groundwater sample was assigned a unique sample identification number including the well number and the 6-digit date on which the sample was collected. For example, the groundwater sample collected from well MW3 on November 14, 2020 was identified as MW3-111420 and a duplicate sample collected from well MW3 on November 14, 2020 was identified as MW3-111420A.

Horizontal coordinates for each boring and surface soil sampling location were recorded using a hand-held GPS device with real-time differential correction as a preliminary measurement. Subsequently, monitoring well locations and elevations were professionally surveyed by CES NW, Inc. Monitoring well locations and elevations are presented in Table 7, Section 2.3.2.7 of this report.

2.2.1 SAMPLING AND MONITORING

The sampling strategy for this RI was based on the preliminary CSM provided in Section 4.0 of the RIWP (see Appendix E). Sampling techniques and protocols, including preservatives, filtration information, and containers are included in the FSP (Appendix F).

Eleven soil borings and groundwater monitoring wells, plus 25 surface soil samples were designed to assess the presence of COCs associated with historical use of the Site. Tables 1 through 3 below indicate the COCs that were analyzed for at each area of concern.

Table 1
Soil Boring Laboratory Analysis by Area of Concern

Analysis	UST Location	Buried Fill	Log Storage
NWTPH-Dx	*	*	*
NWTPH-Gx	*	*	*
BTEX	*	*	*
EDB			
EDC			
MTBE			
Total Pb			
PAHs		*	*
PCP			
PCBs		*	*
HVOCs	*	*	*
Total Cu			*
RCRA 8 (total)		*	*
TCLP			
Dioxins			
Furans			
# of Samples	2	21[1]	2

* = Analyzed
[1] = Includes two duplicate sample

Table 2
Groundwater Laboratory Analysis by Area of Concern

Analysis	UST Location	Buried Fill	Log Storage
NWTPH-Dx	*	*	*
NWTPH-Gx	*	*	*
BTEX	*	*	*
EDB		*	
EDC			
MTBE			
PAHs			
PCP			
PCBs		*	
HVOCs	*	*	*
RCRA 8 (total)	*	*	*
Cu (total)			*
RCRA 8 (dissolved)	*	*	*
Cu (dissolved)			*
TCLP			
Fe	*	*	*
Mn	*	*	*
Eh (ORP)	*	*	*
pH	*	*	*
Ammonia	*	*	*
Benzoic acid	*	*	*
# of Samples	1	10[1]	1

* = Analyzed
[1] = Includes one duplicate sample

Table 3
Surface Soil Laboratory Analysis by Area of Concern

Analysis	UST Location	Garage Interior	North of Garage	East of Garage	Log Storage	Fill Piles	Wetlands
NWTPH-Dx	*	*	*	*	*	*	*
NWTPH-Gx	*	*	*	*	*	*	*
BTEX					*	*	*
EDB							
EDC							
MTBE							
Total Pb							
PAHs	*	*	*	*	*	*	*
PCP					*		
PCBs	*	*	*	*		*	*

* = Analyzed
[1] = Includes one duplicate sample

Table 3 (continued)
Surface Soil Laboratory Analysis by Area of Concern

Analysis	UST Location	Garage Interior	North of Garage	East of Garage	Log Storage	Fill Piles	Wetlands
HVOCs	*	*	*	*	*	*	*
RCRA 8 (total)		*	*	*	*	*	*
Cu (total)					*	*	
TCLP			*				
# of Samples	3[1]	2	2	2	7[1]	8	3

* = Analyzed

[1] = Includes one duplicate sample

The analytical data collected during this investigation was evaluated relative to appropriate MTCA screening levels for unrestricted land use, compiled into a project database, and uploaded to Ecology's Environmental Information Management (EIM) database.

The rationale for data collection is presented by area in the following subsections. The FSP (Appendix F) details the field procedures followed during data collection. Additional information on laboratory analytical methods and quality control is provided in the QAPP (Appendix G).

2.2.1.1 Former UST

Background Rationale

A 12,000-gallon diesel UST had previously been removed from the northwestern portion of Parcel C (Stemen, 1993). Stained soil, attributed to delivery overfills and spills, was observed around the fill pipe during removal and approximately 25 cy of impacted soil were excavated from around the fill pipe and stockpiled just north of and in line with the eastern half of the excavation.

Laboratory results of soil samples collected from the excavation pit and approximately 75 cy of non-impacted soil indicated TPH concentrations were well below Ecology's 1993 action level of 200 ppm. The soil sample collected from the impacted soil stockpile indicated a concentration of 390 ppm for TPH. The final disposition of the impacted soil was not documented.

Data Collection/COCs

- Two soil samples were collected from one soil boring (B1) (Figure 4) – one at 7 feet bgs and one at 15 feet bgs – at the location of the former UST. These samples were analyzed for the COCs listed in Table 1 (Section 2.2.1)
- PID readings were collected at two-foot intervals along the length of the boring core

- Methane readings were recorded for the length of the boring core
- The boring was completed as a permanent well (MW1)
- One groundwater sample (MW1-111220) was collected from MW1 and analyzed for the COCs listed in Table 2 (Section 2.2.1)
- Two surface soil samples (SS1 and SS2) and one duplicate surface soil sample (SS2A) (Figure 5) were collected from the location of the former TPH-impacted stockpile and analyzed for the COCs listed in Table 3 (Section 2.2.1)

2.2.1.2 Garage Area

Background Rationale

Two Phase I ESA's (AMEC, 2004 and Ages, 2015) noted a dirt-floored garage near the central portion of Parcel C. Eight 55-gallon drums were reported to have been stored in this area, directly on the ground with no secondary containment. Contents were not identified. A 6-foot by 6-foot area of stained gravel/soil was noted within the garage. The garage building has since been removed and not present at the time of this RI.

Data Collection/COCs

- Two surface soil samples (SS5 and SS6) (Figure 5) were collected from the former interior of the garage for the COPCs listed in Table 3 (Section 2.2.1)

2.2.1.3 Former Drum Storage, AST, and Vehicle Maintenance Areas

Background Rationale

The Ages 2015 Phase I ESA reported one 500-gallon AST near the above-mentioned garage. The AST was reported as new and in good condition, though it was located on gravel without secondary containment. Contents were not identified.

Two 55-gallon drums were located outside the garage and were stored on gravel with no secondary containment. Contents were not identified. A 6-foot by 6-foot area of stained gravel/soil was reported outside the garage to the north, near an equipment and truck parking area.

Vehicle maintenance was reported to have occurred to the east of the former garage.

Data Collection/COCs

- Two surface soil samples (SS3 and SS4) (Figure 5) were collected from the stained area north of the garage to be analyzed for the COCs listed in Table 3 (Section 2.2.1)

- Two surface soil samples (SS7 and SS8) (Figure 5) were collected from the AST, drum storage, and vehicle maintenance area east of the garage and analyzed for the COCs listed in Table 3 (Section 2.2.1)

2.2.1.4 Debris Fill Areas

Background Rationale

Between the 2007 Pacific Rim and the 2008 Robinson Noble soil investigations, 53 test-pits were excavated at the Site.

The initial 2007 Pacific Rim investigation reported fill material with a diesel or oil odor in Pit 10 (0 to 10 feet bgs), on the northwest corner of Parcel A (near Boring B2) (see Figure 3). Fill material with a strong petroleum odor was also noted in Pit 17 (0 to 6 feet bgs) within the south-central portion of Parcel A (near Boring B3).

A follow-up investigation in 2008 by Robinson Noble indicated that diesel-range hydrocarbons were detected at a concentration of 370 mg/kg in a soil sample collected from Test Pit 6 (near the 2007 investigation's Pit 17, see Figure 3). This concentration was significantly less than the MTCA Method A soil CUL that was applicable at the time.

Data Collection/COCs

- Soil borings were advanced as described in Table 4 below (Figure 4); two soil samples were collected from each boring – one at 7 feet bgs and one at 15 feet bgs – and analyzed for the COCs listed in Table 1 (Section 2.2.1)
    - Two duplicate samples were collected from B3: B3-7A and B3-15A and analyzed for the COCs listed in Table 1 (Section 2.2.1)
    - One additional soil sample was collected from B3 (B3-10) due to a relatively elevated PID reading
- PID readings were recorded at two-foot intervals of the boring cores
- Methane readings were recorded along the length of the boring cores
- Nine borings were completed as permanent wells within the debris fill areas as described in Table 4 on the following page.
- Groundwater samples were collected from each of the permanent wells, with the exception of MW9 and MW10, for which insufficient water was encountered to allow for the collection of a representative groundwater sample.
- A duplicate groundwater sample was collected from MW3, in accordance with the QAPP for this project.
- Groundwater samples were analyzed for the COCs listed in Table 2 (Section 2.2.1)

Table 4
Boring and Well Identification Within the Debris Fill Areas

Boring Number	Monitoring Well Number	Sample Number	Boring Location	Boring Depth	Addressed Concern
B2	MW2	MW2-111320	Northwestern corner of Parcel A	0 – 15 feet bgs	Petroleum odor, wood, and construction debris in 2007 test pit
B3	MW3	MW3-111420 MW3-111420A	Southeastern portion of Parcel A	0 – 15 feet bgs	Petroleum odor, wood debris, and construction debris in 2007 test pit
B4	MW4	MW4-111320	Northwestern corner of Parcel A	0 – 15 feet bgs	Woody debris in 2007 test pit
B5	MW5	MW5-111220	Western border of Parcel A	0 – 15 feet bgs	Random fill in 2007 test pit
B6	MW6	MW6-111220	South central portion of Parcel B	0 – 15 feet bgs	Wood and construction debris in 2007 test pit
B7	MW7	MW7-111220	Southern portion of Parcel B	0 – 15 feet bgs	Wood and construction debris in 2007 test pit
B8	MW8	MW8-111420	North central border of Parcel C	0 – 15 feet bgs	Wood and construction debris in 2007 test pit
B9	MW9	Not sampled; well dry	Central portion of Parcel A	0 – 15 feet bgs	Wood and random fill in 2007 test pit
B10	MW10	Not sampled; well dry	Central portion of Parcel A	0 – 15 feet bgs	Wood debris in 2007 test pit

2.2.1.5 Fill Piles and Log/Materials Storage Areas

Background Rationale

Log and material storage areas were visible near the central portion of Parcel A in a 1990 aerial photograph.

A 2015 Site map shows fill piles of unknown origin at multiple locations around the Site (see Figure 3).

A complaint from a nearby resident alleged that creosote logs had been stored at the Site. While the logs alleged in the complaint were determined to actually be on an adjacent property, associated COCs are included in the analysis as a precaution.

Data Collection/COCs

- Two soil samples were collected from Boring B11 (Figure 4) – one at 7 feet bgs and one at 15 feet bgs – near the center of Parcel A. Samples were analyzed for the COCs listed in Table 1 (Section 2.2.1)
- PID readings were recorded at two-foot intervals of the boring core.
- Methane readings were recorded along the length of the boring core.
- The boring was completed as a permanent well (MW11).

- One groundwater (MW11-111420) sample was collected from MW11 and analyzed for the COCs listed in Table 2 (Section 2.2.1)
- Six surface soil samples (SS18 – SS23) and one duplicate surface soil sample (SS20A) (Figure 5) were collected from the north/central portion of Parcel A, where log and material storage areas had been identified. These samples were analyzed for the COCs listed in Table 3 (Section 2.2.1).
- Four surface soil samples (SS16, SS17, SS24, and SS25) (Figure 5) were collected from the western and central portions of Parcel A, where imported fill piles had been identified. These samples were analyzed for the COCs listed in Table 3 (Section 2.2.1).
- Two surface soil samples (SS9 and SS10) (Figure 5) were collected near the boundary between Parcels A and C, where a wood debris fill pile had been identified. These samples were analyzed for the COCs listed in Table 3 (Section 2.2.1).
- Two surface soil samples (SS11 and SS12) (Figure 5) were collected near the boundary between Parcels A and C, slightly east of sample SS-10, where a construction debris fill pile had been identified. These samples were analyzed for the COCs listed in Table 3 (Section 2.2.1)

2.2.1.6 Wetlands

Background Rationale

Wetlands are present in the east, southwest, and northwest portions of the Site (Soundview Consultants, 2020) (Figure 5).

Data Collection/COCs

- Three surface soil samples (SS13 – SS15) (Figure 5) were collected from the areas adjacent and nearby the eastern wetlands (Wetlands B and E per the Soundview Consultants report). These samples were analyzed for the COCs listed in Table 3 (Section 2.2.1)
- Field measurements of conventional water quality parameters including pH, salinity, total dissolved solids, conductivity, and temperature were collected from standing water at three locations within the wetlands.

2.2.1.7 Hydrogeologic Data Collection

No adequate hydrogeologic data had been collected regarding shallow perched groundwater at the Site prior to this RI and it was considered unlikely that shallow groundwater characteristics at the Site were consistent with those of the deeper aquifer.

Water level measurements were collected from each of the permanent well installations (with the exception of MW-10, which did not encounter the perched groundwater surface). These measurements combined with survey data of the elevations of the top of the well casings were used to estimate a preliminary shallow groundwater gradient for the Site ranging from 0.0045 to 0.013 ft/ft (Figure 16). Occurrences of shallow groundwater are anticipated to be seasonal and are not expected to be connected on a perennial basis.

2.2.1.8 Modifications to RIWP

Field procedures followed the RIWP with the following exceptions:

- Selected field samples collected into VOA vials for VOC analysis were determined by the laboratory to contain too much soil media, and not enough headspace. Therefore, analysis by the 5035 Method was not possible. As an alternative, the laboratory prepped and analyzed these samples in the laboratory via Method 5030. Per the PQLs included in the laboratory reports, this data is considered to be adequate for decision making purposes."

- An additional sample was collected from B3 based on a moderately elevated PID reading. The sample was collected from a depth of 10 feet bgs, in addition to the samples collected from the planned depths of 7 and 15 feet bgs. This resulted in three soil samples from MW3. The additional sample was subjected to the same analyses as the other two planned samples.

- Monitoring wells MW-9 and MW-10 did not yield enough water for groundwater sampling, and thus, no groundwater samples were collected from these wells.

2.2.2 GEOLOGY

Regional Geology

The geology of the Greater Puget Sound region is characterized by glacially derived sediments, which were deposited during several episodes, concluding with the Vashon Stade of the Fraser Glaciation, which ended approximately 12,500 years ago. The advance of the Vashon glacier deepened and widened north-south trending valleys. Thick bodies of sand, gravel, and till were deposited over the area. With the retreat of the glacier, ice-contact stratified drift was deposited over much of the area, followed by a period of alluvial valley filling, peat deposition, minor erosion, and soil development (AMEC, 2004). The upper two feet consists of very dark brown gravelly sandy loam. At around 30 inches bgs, there typically lies a weakly cemented hardpan that can be crushed to very gravelly loamy sand (Robinson Noble, 2008)

According to the United States Department of Agriculture (USDA) *Soil Survey of Thurston County Area, Washington, General Soil Map,* soils of the Site vicinity are generally characterized

as Alderwood series soils. This series is described as moderately well drained, on glacial till plains. The western portion of the Site is characterized as a gravel pit consisting of in-filled excavations from which soil and the underlying rounded glacial pebbles and stones have been removed. According to the Geology and Groundwater Resources of Thurston County, Washington (USGS Water Resources Division) *Geologic Map of Thurston County, Washington, West Half*, soil at the Site is characterized as recessional outwash overlying till.

RI Geologic Findings

Surface Conditions

The project site is roughly "T-shaped" and is comprised of 5 separate parcels. Cooper Point Road NW forms the western boundary. The remaining boundaries are primarily occupied by wooded property, with the exception of residential parcels to the south (one on Cooper Point Road and two along Grove Street).

Site access was via Cooper Point Road, through a series of two locked gates on the west side of the property. The western portion, near the south boundary slopes south towards a wooded depression (Wetlands "C", Soundview Consultants, June 2017, revised November 2020). The western portion of the property generally has a slight slope to the west, towards Cooper Point Road NW. The south-central portion of the property is slightly elevated, with gradual slopes to the west, south, and east, and a steeper slope to the north, towards the gravel pit portion of the property. Two small hills were observed within the north central portion of the property. The southwest face of the eastern hill was extremely steep from gravel pit excavations. The eastern portion of the site slopes towards the east and was heavily vegetated with thorn bushes and other vegetation.

Much of the interior of the site is devoid of dense vegetation aside from low-lying shrubbery and grasses. A small series of makeshift roads traverse this portion of the site. Exposed surface soils primarily consisted of a mixture of silt, sand, and gravel with a significant component of rounded gravel and cobbles.

Soils

The naturally occurring soils encountered at the Site were consistent with previous descriptions, including regional geologic descriptions (AMEC, 2004; Robinson Noble, 2008; USDA; and USGS) and more recent, site-specific investigations (Pacific Rim Soil & Water, Inc, 2007; Ages, LLC; 2015). A significant amount of fill material was also encountered. A description of the soils encountered, per boring, follows.

Boring B-1

South of the entrance at the western boundary, soils consisted of approximately 2 feet of organic silts with gravel (topsoil) overlying silt and sand with varying amounts of rounded gravel and cobbles. All interpreted to be naturally occurring strata.

Boring B-2

Northwestern portion of property, soils consisted of approximately 4 feet of sandy silt with an estimated 50 percent gravel and cobbles. Beneath this was approximately five feet of gray clay with 30 percent gravel and cobbles. The bottom 4 feet consisted of very fine grained, well sorted, dark gray sand. All interpreted to be naturally occurring strata.

Boring B-3

On the south side of the east portion of the site, 2 feet of silt/gravel/clay topsoil was observed over approximately 9 feet of highly organic silt, buried wood and a small amount of rounded cobbles ranging in diameter from 0.25 to 8.5 inches. Material from 0 to 11 feet below grade is interpreted to be fill material. The bottom four feet of this boring consisted of silty to sandy gravel, interpreted to be naturally occurring strata.

Boring B-4

Approximately 105 feet south of B-2, near the northwest corner of the property, soils included approximately 2 feet of silty sand and gravel (topsoil) over 13 feet of well-sorted, medium-grained, greenish sand. All interpreted to be naturally occurring strata.

Boring B-5

Approximately 165 feet south of B-4, and near the northwest corner of the property, soils consisted of approximately 2 feet of a dark reddish brown silty sandy gravel mixture over 3.5 feet of highly organic black clay with gravel (logged as peat, but interpreted to be buried fill with a high percentage of wood). Small metal fragments were observed at 5 to 5.5 feet bgs. Material from 0 to 5.5 feet below grade is interpreted to be fill material. Underlying this was approximately 4.5 feet of medium grained sand with 10 to 20 percent gravel and cobbles. The bottom 5 feet of soils consisted of well sorted very fine sand. Material from 5.5 feet to 15 feet bgs is interpreted to be naturally occurring strata.

Boring B-6

North of the site entrance near the west boundary of the project site, soil included 7 feet of sandy silt with approximately 40 percent gravel and cobbles including an oval/spheroidal boulder of asphalt (approximately 4 inches by 2 inches) that was observed between 6 and 7 feet below grade. Material from 0 to 7 feet below grade is interpreted to be fill material. Soils from 7 to 15 feet below grade consisted of medium-grained sand with 10 to 20 percent gravel and cobbles. This material was interpreted to be naturally occurring strata.

Boring B-7

Just south of B-6, but north of the entrance near the west boundary of the project site, the top 4 feet consisted of sandy silt with approximately 40 percent gravel and cobbles followed by 3 feet of silt with clay and approximately 50 percent gravel. Concrete debris was observed at approximately 6 to 7 feet below grade. Fill material with wood debris (logged as peat) and approximately 10 percent gravel was encountered from 7 to 10 feet below grade. Material from 0

to 10 feet below grade was interpreted to be fill material. The bottom 5 feet of the boring consisted of well-sorted, medium grained sand, interpreted to be naturally occurring strata.

Boring B-8

Located in the south-central portion of the project site, soil consisted of 2.5 feet of organic silt and sand with gravel and rounded cobbles overlying 3.5 feet fill material with wood debris (logged as peat). This fill included highly organic silt, wood fragments, concrete debris, and some rounded cobbles. Material from 0 to 6 feet below grade was interpreted to be fill material. Gravel with varying amounts of silt and sand was encountered from 6 to 15 feet below grade. This gravel was interpreted to be naturally occurring strata.

Boring B-9

Located in the eastern portion of the property, soils consisted of 2 feet of organic silty sand with gravel underlain by 5.5 feet of fill material with wood debris (logged as peat). This fill material included highly organic silt, wood fragments, concrete debris, and some rounded cobbles. Material from 0 to 7.5 feet below grade was interpreted to be fill material. This was underlain by 4.5 feet of inorganic silt with sand and gravel followed by 3 feet of silty sand with approximately 10 percent of gravel. Material from 7.5 to 15 feet below grade was interpreted to be naturally occurring strata.

Boring B-10

Located approximately 165 feet northwest of B-9 in the eastern portion of the site, soils included 2 feet of organic clay with 10 to 15 percent gravel and cobbles underlain by 5 feet of fill material with wood debris (logged as peat). This fill material included approximately 50 percent gravel and cobbles. Material from 0 to 7 feet below grade was interpreted to be fill material. Below this was approximately 5.5 feet of poorly graded gravels with sands, silts, and clays. The bottom 2.5 feet consisted of well-graded, medium grained sand with approximately 5 to 10 percent gravel. Material from 7 to 15 feet below grade was interpreted to be naturally occurring strata.

Boring B-11

Located in the north-central portion of the site, soils included 2.5 of silty gravel (approximately 50 percent gravel) over 0.5 feet of clean dense clay. Clay with approximately 50 to 60 percent gravel was encountered from 3 to 6 feet below grade. Beneath this was one foot of clean clay, followed by 8 feet sand with 20 percent gravel, grading with depth to well-sorted, medium-grained sand. All of the soils encountered in this boring were interpreted to be naturally occurring strata.

Boring logs are included in Appendix C.

Interpretation

Soils interpreted to represent native, in situ material, are typical of glacial deposits, including a range of very gravelly soils with cobbles to clean clay, with variable gradations between these extremes. Rounded cobbles, indicating water transport, are common, interpreted to

be associated with water-deposited glacial outwash. Significant thicknesses of well sorted sands were observed.

Observations from our investigation were combined with recorded observations presented by AGES, LLC (Preliminary Geotechnical Report, January 12, 2015) and Pacific Rim Soil & Water, Inc. (Soils investigation preliminary, November 2, 2007), to provide a more robust coverage of the Site. This additional data was used to generate Figure 15, showing a generalized soils map divided into three categories:

- Native soils with very little disturbed cover or fill
- Filled areas that did not contain significant proportions of buried wood material
- Filled areas with significant amounts of buried wood

As depicted in Figure 15, large areas of the Site are underlain by fill material of varying composition. Much of the fill material resembled the native soil, but could be readily identified as fill material by the presence of asphalt, concrete, wood, and metal debris. Metal fragments were observed in Boring B-5 at a depth of approximately 5 to 5.5 feet bgs, and were reported in TP-5 (AGES) and P-14 (Pacific Rim Soil & Water, Inc.).

As stated above, some of the fill material encountered included large percentages of wood debris at various stages of degradation. Some of the wood had completely degraded to organic silt, and some wood appeared relatively fresh with recognizable grain structure. This material was logged as "Peat", to remain within the USCS, however, this is more accurately described as "fill material with a large percentage of wood debris."

Fill material with wood debris dominates the southwest and eastern portions of the site (with the caveat that the extreme eastern boundary of the property is occupied by native materials with little fill or re-worked overburden).

Figures 18 to 21 present geologic cross-sections using the data of this study, combined with data from Ages, LLC (2015) and Pacific Rim Soil & Water, Inc. (2007).

2.2.3 HYDROGEOLOGY

Regional Hydrogeology

A groundwater contour map from a regional USGS study, *Hydrological and Quality of Ground Water in Northern Thurston County* (1998, revised) shows the regional groundwater flow direction near the Site is to the east, towards Budd Inlet. Local well logs indicate that the general groundwater flow direction is to the northeast at a gradient of approximately 0.08 ft/ft.

The region's hydrogeology is described in the City of Olympia's *Allison Springs and East Olympia Allison Springs Wellhead Protection Plan* as being underlain by an alternating sequence of glacial and non-glacial sediments forming several confined aquifer systems. The extended capture zone of the Allison Springs wellfield extends beneath the Site. The wells in this wellfield

are completed in several aquifer systems and produce water for the City of Olympia's municipal supply.

Site-Specific Hydrogeology (previous investigations)

The Site is in a Critical Aquifer Recharge Area (CARA). Earth Solutions (October 11, 2016) reported that, through past permitted site use as a gravel mine, the majority of soils that would exhibit a high susceptibility to shallow interflow aquifer recharge, i.e. clean sandy soils, have been removed. The remaining soil type – fill and glacial till – is much lower in permeability. Layers of sandy soil documented in test pits from previous investigations (see Section 2.1) do not appear to be continuous and hydraulic communication is expected to be low and sporadic. Based on this, it was concluded by others that the susceptibility to adversely impact CARA resources has been significantly lowered by replacing permeable native soils with non-permeable fill materials through historical use of the Site. The deeper aquifer beneath the Site is separated by a layer of glacial till and is effectively disconnected from direct recharge. The soils overlying the groundwater table contain relatively thick, glacially consolidated fine-grained deposits that do not transmit water readily to recharge the locally deep groundwater table (Earth Solutions NW, 2016).

Previous investigations at the Site indicate:

- The groundwater table, as observed in previous borings at the Site, is below the 50-foot level (Stemen, 1993). The locations of the referenced borings/wells were not provided, nor were any well logs provided to confirm the measured groundwater depths.
- The static water level within a "nearby" well, drilled to 111 feet bgs, was reportedly 47 feet below the top of the wellhead at the time of drilling (Robinson Noble, 2008). The location of the well, distance from the Site, and well logs were not provided.
- Perched groundwater tables have been observed in several test pits in concert with loose, gravelly, sandy native substrates at depths between 10 and 15 feet bgs (Pacific Rim Soil & Water, 2007)
- Groundwater seepage was observed in test pits at depths ranging from 3.5 to 8.0 feet bgs. Seepage was believed to represent a seasonal perched water table developed during the wet winter season. (Ages, 2008)
- The regional static groundwater table occurs at depths of approximately 110 to 150 feet below existing grades based on a review of available well logs for the area. Soils overlying the groundwater table contain relatively thick deposits that do not readily transmit water (including perched groundwater) to recharge the locally deep groundwater table. (Earth Solutions NW, 2016)
- Perched groundwater zones are relatively isolated and do not represent a defined groundwater table or a pervasive interflow regime; based on the depth of the local groundwater aquifer and the soils above, the risk of affecting groundwater is negligible (Earth Solutions NW, 2016)

RI Hydrogeologic Findings

Eleven wells were installed to a total depth of 15 feet bgs, in accordance with the RIWP, dated November 16, 2020. Goundwater was not detected in Monitoring Well MW10, installed at an elevation of 257.25 feet (North American Vertical Datum of 1988) (top of casing elevation). All other wells had measurable levels of groundwater that were used to evaluate the occurrence and distribution of water beneath the site.

For all wells, except MW3, MW10 and MW11, groundwater was detected in sandy and gravel deposits. Groundwater in MW11 was detected in a clay layer with a high percentage of gravel. For MW3, groundwater was detected in a fill layer with a large amount of wood. As stated, grounswater was not encountered in MW10.

Based on the regional hydrogeologic descriptions, presented above, and the depths to groundwater detected, it is our interpretation that the groundwater detected represents seasonally perched water. However, based on the relatively consistent elevations of the groundwater detected (between 242.09 and 232.63 feet above mean sea level) across the Site, it is our interpretation that this groundwater surface was interconnected at the time of our investigation. It is further our interpretation that the primary mechanism of groundwater transport across the site is intergranular flow, during periods of sufficient rainfall.

Figure 16 presents a groundwater contour map based on our field measurements of groundwater levels as measured following well installation and development. This map indicates a localized high, or mound across the west/west-central portion of the Site. A second, less pronounced localized high is interpreted for the eastern portion of the Site. These both roughly coincide with areas of fill material with a high percentage of wood debris (see Figure 15).

The calculated hydrogeologic gradient varied as follows:

- 0.013 foot per foot to the northwest near the southwest corner of the site
- 0.01 foot per foot to the northwest in the northwest portion of the property
- 0.0045 foot per foot to the northeast across the central portion of the property
- 0.006 foot per foot to the east/northeast in the southeast portion of the property

Because of the shallow depth to groundwater, it is anticipated that surface rainfall will recharge the locally perched groundwater table. It is anticipated that the hydrogeologic elevations will change across the Site with seasonal weather patterns, as previously published by others. Because of the ephemeral nature of this water, groundwater at the site does not have any meaningful use.

Measure of hydrogeologic parameters, such as permeability, hydraulic conductivity, and groundwater flow velocity were not included in the scope of this investigation.

2.2.4 OTHER SITE INFORMATION

Five wetland areas have been identified at the Site (Soundview Consultants, November 2020). The Soundview Consultants report is summarized in Section 2.1. Two wetlands (Wetlands B and E) were detected near the eastern portion of the Site. Two wetlands (Wetlands A and D) were detected near the northwestern portion of the Site. One wetland (Wetland C) was detected near the southwestern portion of the Site. It has not been determined if these wetlands are connected to shallow groundwater at the site.

2.2.5 PROPOSED CLEANUP STANDARDS

This section describes the numerical screening levels against which constituent concentration data for environmental media were compared for the purpose of identifying constituents of potential concern during this RI.

2.2.5.1 Soil Cleanup Standards

Because the Site is intended as a residential development, the soil data was evaluated relative to soil screening levels for unrestricted land use. The soil screening levels are the most stringent of MTCA unrestricted Method A or Method B soil cleanup levels.

For total chromium, the soil screening level was set at 2,000 mg/kg (CUL for chromium III), assuming that the measured concentration of total chromium is the concentration of chromium III, based on no evidence of historical use of chromium VI at the site, and no detectable concentrations of chromium VI in soil samples analyzed for this RI.

For arsenic, the soil screening level was set at 20 mg/kg, based on direct contact using Equation 740-2 and protection of groundwater for drinking water use using the procedures in WAC 173-340-747(4), adjusted for natural background for soil.

The point of compliance for direct contact with soil extends to 15 feet below grade, based on a reasonable maximum depth of excavation and assumed placement of excavated soils at the surface where contact occurs. Therefore, for soil screening levels based on direct contact, the soil point of compliance is to a depth of 15 feet.

2.2.5.2 Groundwater Cleanup Standards

Shallow perched groundwater at the Site is ephemeral, possibly or temporally discontinuous, sporadic, and disconnected from the deep underlying aquifer.

Because drinking water is not a reasonable or practical future use for shallow groundwater at the Site, groundwater screening levels for the RI are the most stringent criterion based on protection of surface water and vapor intrusion (VI) to future structures (indoor air) at the Site. For arsenic, the groundwater screening level was set at 5 µg/L (MTCA Method A groundwater

cleanup level based on background). In addition, because there are no surface water criteria for petroleum mixtures (TPH), MTCA Method A groundwater cleanup levels were applied as the groundwater screening criteria for TPH. Note that the individual constituents comprising TPH mixtures (VOCs, PAHs, etc.) were also analyzed, and have their own surface water-based and VI-based groundwater screening levels.

Groundwater screening levels protective of surface water incorporate MTCA surface water cleanup levels including criteria from applicable state and federal laws. For protection of surface water quality, screening levels are the most stringent of the following aquatic life criteria and human health criteria for consumption of aquatic organisms under state and federal laws:

1. MTCA standard Method B surface water cleanup levels based on human consumption of fish (human health only)
2. Federal National Recommended Water Quality Criteria pursuant to Section 304(a) of the Clean Water Act
3. The Federal National Toxics Rule (NTR; 40 CFR 131.36)

Since shallow groundwater may discharge to nearby water bodies, marine water quality criteria were considered for purposes of developing the screening levels. For each constituent, the most conservative water quality criterion was chosen as the groundwater screening level.

Volatilization of contaminants in shallow groundwater can represent a potential risk for VI to future structures (indoor air) or outdoor ambient air. MTCA Method B VI groundwater screening levels, as provided in Ecology's 2019 Cleanup Levels and Risk Calculation Database (CLARC) were applied for the purposes of this RI.

The standard point of compliance for shallow groundwater cleanup levels is throughout shallow perched groundwater at the Site. If it is not practicable to meet groundwater cleanup levels throughout the Site, Ecology may approve a conditional point of compliance for groundwater.

For volatile groundwater contaminants that can pose a VI risk, protectiveness is achieved by meeting VI-based groundwater cleanup levels throughout Site groundwater, or wherever structures will be built on grade in the future. Therefore, for VI protection, the groundwater point of compliance is throughout shallow perched groundwater at the Site.

Because the highest beneficial use of shallow groundwater at the Site is potential discharge to surface water, protectiveness of that use is dependent on meeting surface water criteria at the points of groundwater discharge to nearby surface water bodies.

For the purposes of the RI, the data from each permanent monitoring well was compared against groundwater screening levels protective of both VI and surface water protection.

2.3 SAMPLING/ANALYTICAL RESULTS

The nature and extent of contamination at the Site is defined in this section based on the results of field screening and laboratory analysis of soil and groundwater samples and comparison of detected concentrations to the respective proposed cleanup levels (PCLs) described in Section 2.2.5 of this report. To evaluate samples containing carcinogenic polycyclic aromatic hydrocarbon (cPAH) mixtures, the total toxic equivalent concentration (TEQ) for the cPAHs was calculated and compared to the applicable CUL, as required by WAC 173-340-708(8)(e).

Appendix D provides tables presenting the laboratory results for the COCs and their respective PCLs.

2.3.1 QUALITY ANALYSIS

Field and laboratory quality assurance/quality control (QA/QC) procedures were implemented as described in ENPRO's QAPP (Appendix G). All data collected during this RI meet the needs of the project objectives.

2.3.2 RESULTS

The following subsections discuss the analytical data by area of concern, including:

- The nature, magnitude, and extent of COCs
- Evidence for transfer/interactions between different media (leaching, groundwater plume migration, etc.), if applicable
- Detail on the likely fate and transport of the main COCs and COC groups identified at and potentially downgradient of the Site, if applicable
- Analytes with no published CULs are not included in the data presentation of this section.

Because the groundwater beneath the site is temporal and not connected to the deeper aquifer, no practical use for the groundwater beneath the Site has been identified. In the event a connection is shown between the perched groundwater and surface water features (including but not necessarily limited to wetland features identified at the Site), degradation of groundwater quality would be of concern. Based on this rationale, and as presented in the RIWP, analytical results herein are compared to MTCA Methods A or B CULs for unrestricted land use. For completeness, we have identified analytical results of soil samples that exceed the Ecology CULs for groundwater protection.

2.3.2.1 Former UST

No COCs were detected at concentrations greater than the PQL in soil samples (B1-7 and B1-15) collected from the former UST location (Figure 4).

The following COCs were detected in the groundwater sample collected from MW1 at the former UST location (Figure 4):

- Barium (total): 30 µg/L (CUL= 3,200 µg/L)
- Iron (total): 2,700 µg/L (CUL= 11,000 µg/L)
- Manganese (total/dissolved): 630/560 µg/L (CUL= 750 µg/L)

None of the constituent concentrations detected in the former UST groundwater sample exceeded the MTCA Methods A or B CULs for unrestricted land use.

The following COCs were detected in surface soil sample SS1, collected from the former TPH-impacted stockpile (Figure 5):

- Surface soil sample SS1
    - TPH as diesel: 150 mg/kg (CUL=2,000 mg/kg)
    - TPH as heavy oils: 1,800 mg/kg (CUL= 2,000 mg/kg)
    - Naphthalene: 0.01 mg/kg (CUL= 5 mg/kg)
    - Fluoranthene: 0.014 mg/kg (CUL= 3,200 mg/kg)
    - Pyrene: 0.015 mg/kg (CUL= 2,400 mg/kg)
    - Benzo(a)pyrene: 0.0093 mg/kg (CUL=0.1 mg/kg)
    - cPAH TEQ= 0.01165 mg/kg (CUL= 0.1 mg/kg)
    - Lead: 17 mg/kg (CUL= 250 mg/kg)

None of the constituent concentrations detected in surface soil sample SS1 collected from the location of the former TPH-impacted stockpile exceeded the MTCA Methods A or B CULs for unrestricted land use. No COCs were detected at concentrations greater than the PQL in surface soil sample SS2 and its duplicate sample SS2A collected from the same location (Figure 5).

PID readings of field samples from Boring B1 (Figure 4) at two-foot intervals ranged from 0.2 to 0.3 ppm.

LEL readings for methane from the length of Boring B1 did not exceed 0.0 percent.

2.3.2.2 Former Garage Area

The following COCs were detected in surface soil samples SS5 and SS6 (Figure 5) at the former garage location:

- Surface soil sample SS5
  - TPH as heavy oils: 80 mg/kg (CUL = 2,000 mg/kg)
  - Fluoranthene: 0.012 mg/kg (CUL= 3,200 mg/kg)
  - Pyrene: 0.014 mg/kg (CUL= 2,400 mg/kg)
  - Benzo(a)pyrene: 0.0084 mg/kg (CUL=0.1)
  - cPAH TEQ= 0.009683 mg/kg (CUL= 0.1 mg/kg)
  - Barium: 44 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 16 mg/kg (CUL for chromium III= 2,000 mg/kg)
- Surface soil sample SS6
  - TPH as heavy oils: 73 mg/kg (CUL = 2,000 mg/kg)
  - Naphthalene: 0.015 mg/kg (CUL= 5 mg/kg)
  - Anthracene: 0.011 mg/kg (CUL= 24,000 mg/kg)
  - Fluoranthene: 0.077 mg/kg (CUL= 3,200 mg/kg)
  - Pyrene: 0.081 mg/kg (CUL= 2,400 mg/kg)
  - Benzo(a)pyrene: 0.05 (CUL=0.1 mg/kg)
  - cPAH TEQ= 0.06769 mg/kg (CUL= 0.1 mg/kg)
  - Barium: 63 mg/kg (CUL= 16,000 mg/kg)
  - Cadmium: 0.84 mg/kg (CUL= 2 mg/kg)
  - Chromium: 21 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Lead: 16 mg/kg (CUL= 250 mg/kg)

None of the constituent concentrations detected in surface soil at the former garage exceeded the MTCA Methods A or B CULs for unrestricted land use.

Cadmium in sample SS6 slightly exceeded the CUL based on groundwater protection of 0.04 mg/kg, however, migration of cadmium from surface soil to groundwater is unlikely as it has not been detected in any of the subsurface soil and groundwater samples.

PID readings of field samples collected at sample locations SS5 and SS6 (Figure 5) did not exceed 0.1 ppm.

LEL readings for methane in field samples collected at sample locations SS5 and SS6 did not exceed 0.0 percent.

2.3.2.3 Former Drum Storage Area, AST, and Vehicle Maintenance Areas

The following COCs were detected in surface soil samples SS3 and SS4 (Figure 5) collected from the stained area north of the former garage:

- Surface soil sample SS3
  - TPH as heavy oils: 130 mg/kg (CUL = 2,000 mg/kg)
  - Naphthalene: 0.081 mg/kg (CUL= 5 mg/kg)
  - 2-Methylnaphthalene: 0.044 mg/kg (CUL= 5,600 mg/kg)
  - Anthracene: 0.056 mg/kg (CUL= 24,000 mg/kg)
  - Fluoranthene: 0.17 mg/kg (CUL= 3,200 mg/kg)
  - Pyrene: 0.17 mg/kg (CUL= 2,400 mg/kg)
  - Benzo(a)pyrene: 0.089 mg/kg (CUL=0.1 mg/kg)
  - cPAH TEQ= 0.11701 mg/kg (CUL= 0.1 mg/kg)
  - Arsenic: 15 mg/kg (CUL= 20 mg/kg)
  - Barium: 84 mg/kg (CUL= 16,000 mg/kg)
  - Cadmium: 0.62 mg/kg (CUL= 2 mg/kg)
  - Chromium: 31 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Lead: 130 mg/kg (CUL= 250 mg/kg)
- Surface soil sample SS4
  - TPH as heavy oils: 77 mg/kg (CUL = 2,000 mg/kg)
  - Anthracene: 0.014 mg/kg (CUL= 24,000 mg/kg)
  - Fluoranthene: 0.066 mg/kg (CUL= 3,200 mg/kg)
  - Pyrene: 0.09 mg/kg (CUL= 2,400 mg/kg)
  - Benzo(a)pyrene: 0.046 mg/kg (CUL= 0.1 mg/kg)
  - cPAH TEQ= 0.05894 mg/kg (CUL= 0.1 mg/kg)
  - Barium: 60 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 21 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Lead: 18 mg/kg (CUL= 250 mg/kg)

None of the constituent concentrations detected in surface soils to the north of the former garage exceeded the MTCA Methods A or B CULs for unrestricted land use, with the exception of cPAH TEQ in sample SS3.

Evidence of migration of cPAHs from this surface soil location to groundwater has not been established as cPAHs were not detected in any of the groundwater samples collected for this project. Furthermore, except for surface soil samples SS11 (discussed below) and SS3, no other surface soil samples exhibited total TEQ for cPAHs above the CUL, suggesting that the lateral transport of cPAHs in surface soil has not been significant.

Arsenic, barium and cadmium in sample SS3 exceeded the CUL based on groundwater protection of 0.15 mg/kg, 83 mg/kg and 0.04 mg/kg, respectively. However, evidence of migration of these metals from surface soil to groundwater has not been established as they were not detected in the nearest groundwater sample (MW8-111420) collected for this project.

The following COCs were detected in surface soil samples SS7 and SS8 (Figure 5) collected from the AST, drum storage, and vehicle maintenance area east of the garage:

- Surface soil sample SS7
  - TPH as heavy oils: 190 mg/kg (CUL= 2,000 mg/kg)
  - Anthracene: 0.013 mg/kg (CUL= 24,000 mg/kg)
  - Fluoranthene: 0.043 mg/kg (CUL= 3,200 mg/kg)
  - Pyrene: 0.042 mg/kg (CUL= 2,400 mg/kg)
  - Benzo(a)pyrene: 0.016 mg/kg (CUL=0.1 mg/kg)
  - cPAH TEQ= 0.02292 mg/kg (CUL= 0.1 mg/kg)
  - Barium: 110 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 34 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Lead: 15 mg/kg (CUL= 250 mg/kg)
- Surface soil sample SS8
  - Barium: 85 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 24 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Lead: 9 mg/kg (CUL= 250 mg/kg)

None of the constituent concentrations detected in surface soils collected from the AST, drum storage, and vehicle maintenance area east of the garage exceeded the MTCA Methods A or B CULs for unrestricted land use.

Barium slightly exceeded the CUL based on groundwater protection of 83 mg/kg. However, evidence of migration of barium from surface soil to groundwater has not been

established as it was not detected in the nearest groundwater sample (MW8-111420) collected for this project.

PID readings of field samples collected at sample locations SS7 and SS8 (Figure 5) did not exceed 0.1 ppm.

LEL readings for methane in field samples collected at sample locations SS7 and SS8 did not exceed 0.0 percent.

2.3.2.4 Debris Fill Areas

The following COCs were detected in soil boring and groundwater samples from debris fill areas:

Boring B2/MW2 (Figure 4) at the approximate location of the 2007 Pacific Rim preliminary soil sampling report's Test Pit 10

- Boring B2, Soil Sample B2-7
  - TPH as heavy oils at 7 feet bgs:170 mg/kg (CUL = 2,000 mg/kg)
  - Fluoranthene: 0.013 mg/kg (CUL= 3,200 mg/kg)
  - Pyrene: 0.016 mg/kg (CUL= 2,400 mg/kg)
  - Benzo(a)pyrene: 0.0086 mg/kg (CUL=0.1 mg/kg)
  - cPAH TEQ= 0.010566 mg/kg (CUL= 0.1 mg/kg)
  - Barium: 56 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 19 mg/kg (CUL for chromium III= 2,000 mg/kg)
- Boring B2, Soil Sample B2-7A
  - TPH as heavy oils at 7 feet bgs: 97 mg/kg (CUL = 2,000 mg/kg)
  - Barium: 65 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 23 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Lead: 7 mg/kg (CUL= 250 mg/kg)
- Boring B2, Soil Sample B2-15
  - Barium: 31 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 18 mg/kg (CUL for chromium III= 2,000 mg/kg)
- Boring B2, Soil Sample B2-15

- Barium: 36 mg/kg (CUL= 16,000 mg/kg)
- Chromium: 18 mg/kg (CUL for chromium III= 2,000 mg/kg)

- MW2-111320, Groundwater
  - TPH as heavy oil: 540 µg/L (CUL= 500 µg/L)
  - Arsenic (total/dissolved): 8.2/7.4 µg/L (CUL= 5 µg/L)
  - Barium (total/dissolved): 55/38 µg/L (CUL= 3,200 µg/L)
  - Iron (total/dissolved): 4,600/2,100 µg/L (CUL= 11,000 µg/L)
  - Manganese (total/dissolved): 17,000/18,000 µg/L (CUL= 750 µg/L)

None of the constituent concentrations detected in soil samples collected from Boring B2 exceeded the MTCA Methods A or B CULs for unrestricted land use. However, arsenic, manganese and TPH as heavy oil were detected in groundwater sample MW2-111320 at concentrations that exceeded the MTCA Methods A or B.

Leaching of TPH as heavy oil from mixed fill material in this area may be occurring. Although TPH was not detected in the soil samples from Boring B2, Pacific Rim reported diesel or oil odors from fill material exposed in their nearby Test Pit 10 (Pacific Rim, 2007).

Regarding the detection of metals in groundwater samples collected from MW-2, the negative correlation observed between dissolved metals and redox potential indicates that reducing conditions in the groundwater could be leading to the release of naturally occurring arsenic and manganese to groundwater at this location. Gurung et al. (2005) suggested a chemically reduced environment in the aquifer triggers desorption of arsenic from arsenic-bearing iron oxides.

PID readings of field samples collected from Boring B2 at two-foot intervals ranged from 0.5 to 0.8 ppm.

LEL readings for methane from the length of Boring B2 did not exceed 0.0 percent.

Boring B3/MW3 (Figure 4) at the approximate location of the 2007 Pacific Rim preliminary soil sampling report's Test Pit 17 and the 2008 Robinson Noble Phase II ESA's Test Pit 6 (Figure 3)

- Boring B3, Soil Sample B3-7
  - TPH as heavy oils: 530 mg/kg (CUL = 2,000 mg/kg)
  - Barium: 96 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 26 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Lead: 10 mg/kg (CUL= 250 mg/kg)

- Boring B3, Soil Sample B3-7A

- TPH as diesel: 120 mg/kg (CUL = 2,000 mg/kg)
- TPH as heavy oils: 960 mg/kg (CUL = 2,000 mg/kg)
- cPAH TEQ= 0.00141 mg/kg (CUL= 0.1 mg/kg)
- Barium: 61 mg/kg (CUL= 16,000 mg/kg)
- Chromium: 19 mg/kg (CUL for chromium III= 2,000 mg/kg)
- Lead: 26 mg/kg (CUL= 250 mg/kg)

- Boring B3, Soil Sample B3-10
  - TPH as gasoline: 21 mg/kg (CUL = 100 mg/kg)
  - TPH as diesel: 700 mg/kg (CUL = 2,000 mg/kg)
  - TPH as heavy oils: 4,500 mg/kg (CUL = 2,000 mg/kg)
  - Naphthalene: 0.083 mg/kg (CUL= 5 mg/kg)
  - 2-Methylnaphthalene: 0.03 mg/kg (CUL= 320 mg/kg)
  - 1-Methylnaphthalene: 0.019 mg/kg (CUL= 34 mg/kg)
  - Acenaphthene: 0.021 mg/kg (CUL= 4,800 mg/kg)
  - Fluorene: 0.021 mg/kg (CUL= 3,200 mg/kg)
  - Fluoranthene: 0.053 mg/kg (CUL= 3,200 mg/kg)
  - Pyrene: 0.053 mg/kg (CUL= 2,400 mg/kg)
  - Benzo(a)pyrene: 0.018 mg/kg (CUL=0.1mg/kg)
  - cPAH TEQ= 0.02047 mg/kg (CUL= 0.1 mg/kg)
  - Barium: 140 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 30 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Lead: 100 mg/kg (CUL= 250 mg/kg)

- Boring B3, Soil Sample B3-15
  - Barium: 20 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 7.3 mg/kg (CUL for chromium III= 2,000 mg/kg)

- Boring B3, Soil Sample B3-15A
  - Barium: 27 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 12 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Lead: 10 - 100 mg/kg (CUL= 250 mg/kg)

- MW3-111420, Groundwater

- TPH as heavy oil: 260 µg/L (CUL= 500 µg/L)
- Iron (total/dissolved): 13,000/9,400 µg/L (CUL= 11,000 µg/L)
- Lead (total): 1.2 µg/L (CUL= 3,200 µg/L)
- Manganese (total/dissolved): 1,000/1,000 µg/L (CUL= 750 µg/L)

- MW3-111420A, Groundwater
  - TPH as heavy oil: 260 µg/L (CUL= 500 µg/L)
  - Pyrene: 0.12 µg/L (CUL= 480 µg/L)
  - Iron (total/dissolved): 13,000/9,600 µg/L (CUL= 11,000 µg/L)
  - Lead (total): 1.3 µg/L (CUL= 3,200 µg/L)
  - Manganese (total/dissolved): 1,000/990 µg/L (CUL= 750 µg/L)

None of the constituent concentrations detected in soil samples collected from Boring B3 exceeded the MTCA Methods A or B CULs for unrestricted land use, except for TPH as heavy oils, detected in sample B3-10 collected from 10 feet bgs.

The collection of sample B3-10 was a field modification to the RIWP, based on a slightly elevated PID reading recorded at this depth. Of the five soil samples collected from Boring B3, only sample B3-10 exhibited a concentration of TPH as heavy oils that exceeded the CUL of 2,000 mg/kg. The Pacific Rim 2007 report noted petroleum odors from 0 – 6 feet bgs in the general vicinity of Boring B3. The Robinson Noble 2008 report stated that a soil sample (SETP6-1), collected from an unspecified depth within Test Pit 6, also in the general vicinity of Boring B3, exhibited a TPH-oil concentration of 370 mg/kg. Note, Robinson Noble did not report field or analytical evidence of petroleum contamination in their Test Pit 5, estimated to be 35 feet west of their Test Pit 6.

Total iron was detected in groundwater sample MW3-111420 at a concentration that exceeded the MTCA Methods A or B. However, the detected concentration of dissolved iron did not exceed the applicable CULs. This suggests that the detected total iron was associated with fine-grained soil particles suspended in the groundwater sample.

Manganese (total and dissolved) was detected in groundwater sample MW3-111420 at concentrations that exceeded the MTCA Methods A or B. Reducing conditions in the groundwater could be leading to the release of naturally occurring manganese to groundwater at this location.

PID readings of field samples collected from Boring B3 at two-foot intervals ranged from 0.3 to 26.2 ppm.

LEL readings for methane from the length of Boring B3 did not exceed 0.0 percent.

<u>Boring B7 (Figure 4) at the approximate location of the 2007 Pacific Rim preliminary soil sampling report's Test Pit 14</u>

- Boring B7, Soil Sample B7-7
  - TPH as diesel: 140 mg/kg (CUL = 2,000 mg/kg)
  - TPH as heavy oils: 1,300 mg/kg (CUL = 2,000 mg/kg)
  - Naphthalene: 0.059 mg/kg (CUL= 5 mg/kg)
  - 2-Methylnaphthalene: 0.034 mg/kg (CUL= 320 mg/kg)
  - 1-Methylnaphthalene: 0.018 mg/kg (CUL= 34 mg/kg)
  - Acenaphthene: 0.067 mg/kg (CUL= 4,800 mg/kg)
  - Fluorene: 0.1 mg/kg (CUL= 3,200 mg/kg)
  - Anthracene: 0.11 mg/kg (CUL= 24,000 mg/kg)
  - Fluoranthene: 0.35 mg/kg (CUL= 3,200 mg/kg)
  - Pyrene: 0.35 mg/kg (CUL= 2,400 mg/kg)
  - Benzo(a)pyrene: 0.041 mg/kg (CUL = 0.1 mg/kg)
  - Mercury: 1.3 mg/kg (CUL= 2 mg/kg)
  - cPAH TEQ= 0.05823 – 0.02047 mg/kg (CUL= 0.1 mg/kg)
  - Barium: 35 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 19 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Lead: 16 mg/kg (CUL= 250 mg/kg)
  - Mercury: 1.3 mg/kg (CUL=2.0 mg/kg)
- Boring B7, Soil Sample B7-15
  - Barium: 31 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 19 mg/kg (CUL for chromium III= 2,000 mg/kg)
- MW7-111220, Groundwater
  - TPH as diesel: 380 µg/L (CUL= 500 µg/L)
  - TPH as heavy oil: 630 µg/L (CUL= 500 µg/L)
  - Acenaphthene: 0.11 µg/L (CUL=960 µg/L)
  - Arsenic (total/dissolved): 36/21 µg/L (CUL= 5 µg/L)
  - Barium (total/dissolved): 62/40 µg/L (CUL= 3,200 µg/L)
  - Iron (total/dissolved): 47,000/37,000 µg/L (CUL= 11,000 µg/L)
  - Manganese (total/dissolved): 7,100/7,600 µg/L (CUL= 750 µg/L)

None of the constituent concentrations detected in soil samples collected from Boring B7 exceeded the MTCA Methods A or B CULs for unrestricted land use.

Pacific Rim's 2007 report noted logs, asphalt, concrete, rebar, metal strips, and cedar planks within Test Pit 14. ENPRO's sample B7-7 was collected from 7 feet bgs and contained concentrations of TPH as heavy oils and diesel below the CUL. TPH as heavy oils and as diesel were not detected at or above the PQL in sample B7-15 collected from 15 feet bgs.

Mercury in soil sample B7-7, collected from 7 feet bgs, exceeded the CUL based on groundwater protection of 0.1 mg/kg. However, evidence of migration of mercury from soil to groundwater has not been established, as mercury was not detected in the groundwater sample (MW7-111220) collected from this location.

Arsenic, iron, manganese and TPH as heavy oil were detected in groundwater sample MW7-111220 at concentrations that exceeded the MTCA Methods A or B. Leaching of TPH as heavy oil from fill material in this soil may be occurring. Reducing conditions in the groundwater could be leading to the release of naturally occurring arsenic, iron and manganese to groundwater at this location. Leaching of TPH as heavy oil from fill material in this soil may be occurring. Reducing conditions in the groundwater in MW7 could be leading to the release of naturally occurring arsenic, iron and manganese at this location.

PID readings of field samples collected from Boring B7 at two-foot intervals ranged from 0.3 to 1.4 ppm.

LEL readings for methane from the length of Boring B7 did not exceed 0.0 percent.

Boring B9 (Figure 4) at the approximate location of the 2007 Pacific Rim preliminary soil sampling report's Test Pit 18

- Boring B9, Soil Sample B9-7
  - TPH as diesel: 280 mg/kg (CUL = 2,000 mg/kg)
  - TPH as heavy oil: 1,200 mg/kg (CUL = 2,000 mg/kg)
  - Pyrene: 0.034 mg/kg (CUL= 2,400 mg/kg)
  - Barium: 63 mg/kg (CUL = 16,000 mg/kg)
  - Chromium: 16 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Lead: 6.5 mg/kg (CUL = 250 mg/kg)

- Boring B9, Soil Sample B9-15
  - Barium: 74 mg/kg (CUL = 16,000 mg/kg)
  - Chromium: 24 mg/kg (CUL for chromium III= 2,000 mg/kg)

None of the constituent concentrations detected in soil samples collected from Boring B9 exceeded the MTCA Methods A or B CULs for unrestricted land use.

A groundwater sample was not collected from this location due to an insufficient accumulation of water within the permanently installed monitoring wall (MW9).

PID readings of field samples collected from Boring B9 at two-foot intervals ranged from 0.4 to 1.0 ppm.

LEL readings for methane from the length of Boring B9 did not exceed 0.0 percent.

Boring B10 (Figure 4) at the approximate location of the 2007 Pacific Rim preliminary soil sampling report's Test Pit 19

- Boring B10, Soil Sample B10-7
  - TPH as heavy oil: 75 mg/kg (CUL = 2,000 mg/kg)
  - Barium: 67 mg/kg (CUL = 16,000 mg/kg)
  - Chromium: 19 mg/kg (CUL for chromium III= 2,000 mg/kg)
- Boring B10, Soil Sample B10-15
  - Barium: 58 mg/kg (CUL = 16,000 mg/kg)
  - Chromium: 14 mg/kg (CUL for chromium III= 2,000 mg/kg)

None of the constituent concentrations detected in Boring B10 soil samples exceeded the MTCA Methods A or B CULs for unrestricted land use.

A groundwater sample was not collected from this location due to an insufficient accumulation of water within the permanently installed monitoring wall (MW10) (the well did not encounter the groundwater table).

PID readings of field samples collected from Boring B10 at two-foot intervals ranged from 0.4 to 0.8 ppm.

LEL readings for methane from the length of Boring B10 did not exceed 0.0 percent.

Boring B4 (Figure 4) at the approximate location of the 2007 Pacific Rim preliminary soil sampling report's Test Pit 11

- Boring B4, Soil Sample B4-7
  - Barium: 33 mg/kg (CUL = 16,000 mg/kg)
  - Chromium: 20 mg/kg (CUL for chromium III= 2,000 mg/kg)
- Boring B4, Soil Sample B4-15
  - Barium: 36 mg/kg (CUL = 16,000 mg/kg)
  - Chromium: 22 mg/kg (CUL for chromium III= 2,000 mg/kg)

- MW4-111320, Groundwater
    - TPH as heavy oil: 310 µg/L (CUL= 500 µg/L)
    - Barium (total/dissolved): 90/52 µg/L (CUL= 3,200 µg/L)
    - Iron (total/dissolved): 7,300/260 µg/L (CUL= 11,000 µg/L)
    - Lead (total): 5.9 µg/L (CUL= 11,000 µg/L)
    - Manganese (total/dissolved): 6,200/6,200 µg/L (CUL= 750 µg/L)

None of the constituent concentrations detected in soil samples from Boring B4 exceeded the MTCA Methods A or B CULs for unrestricted land use. Manganese was the only constituent detected in groundwater sample MW4-111320 at a concentration that exceeded the MTCA Methods A or B. Reducing conditions in the groundwater could be leading to the release of naturally occurring manganese to groundwater at this location.

PID readings of field samples collected from Boring B4 at two-foot intervals ranged from 0.1 to 0.2 ppm.

LEL readings for methane from the length of Boring B4 did not exceed 0.0 percent.

Boring B5 (Figure 4) in the vicinity of the 2007 Pacific Rim preliminary soil sampling report's Test Pit 12

- Boring B5, Soil Sample B5-7
    - Barium: 53 mg/kg (CUL = 16,000 mg/kg)
    - Chromium: 17 mg/kg (CUL for chromium III= 2,000 mg/kg)
- Boring B5, Soil Sample B5-15
    - Barium: 26 mg/kg (CUL = 16,000 mg/kg)
    - Chromium: 18 mg/kg (CUL for chromium III= 2,000 mg/kg)
- MW5-111220, Groundwater
    - TPH as heavy oil: 270 µg/L (CUL= 500 µg/L)
    - Arsenic (total/dissolved): 73/42 µg/L (CUL= 5 µg/L)
    - Barium (total/dissolved): 50/26 µg/L (CUL= 3,200 µg/L)
    - Iron (total/dissolved): 58,000/42,000 µg/L (CUL= 11,000 µg/L)
    - Manganese (total/dissolved): 11,000/13,000 µg/L (CUL= 750 µg/L)

None of the constituent concentrations detected in soil samples from Boring B5 exceeded the MTCA Methods A or B CULs for unrestricted land use.

Arsenic, iron and manganese were detected in groundwater sample MW5-111220 at concentrations that exceeded the MTCA Methods A or B. Reducing conditions in the groundwater could be leading to the release of naturally occurring arsenic, iron and manganese to groundwater at this location.

PID readings of field samples collected from Boring B5 at two-foot intervals ranged from 0.5 to 0.9 ppm.

LEL readings for methane from the length of Boring B5 did not exceed 0.0 percent.

Boring B6 (Figure 4) at the approximate location of the 2007 Pacific Rim preliminary soil sampling report's Test Pit 13

- Boring B6, Soil Sample B6-7
  - Fluoranthene: 0.039 mg/kg (CUL= 3,200 mg/kg)
  - Pyrene: 0.037mg/kg (CUL= 2,400 mg/kg)
  - Benzo(a)pyrene: 0.017 mg/kg (CUL = 0.1 mg/kg)
  - cPAH TEQ= 0.02211 mg/kg (CUL= 0.1 mg/kg)
  - Barium: 64 mg/kg (CUL = 16,000 mg/kg)
  - Chromium: 26 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Lead: 5.9 mg/kg (CUL=250)
- Boring B6, Soil Sample B6-15
  - Barium: 31 mg/kg (CUL = 16,000 mg/kg)
  - Chromium: 14 mg/kg (CUL for chromium III= 2,000 mg/kg)
- MW6-111220, Groundwater
  - TPH as heavy Oil: 230 µg/L (CUL= 500 µg/L)
  - Arsenic (total/dissolved): 18/15 µg/L (CUL= 5 µg/L)
  - Barium (total): 33µg/L (CUL= 3,200 µg/L)
  - Iron (total/dissolved): 18,000/16,000 µg/L (CUL= 11,000 µg/L)
  - Manganese (total/dissolved): 4,500/4,500 µg/L (CUL= 750 µg/L)

None of the constituent concentrations detected in soil samples from Boring B6 exceeded the MTCA Methods A or B CULs for unrestricted land use.

Arsenic, iron and manganese were detected in groundwater sample MW6-111220 at concentrations that exceeded the MTCA Methods A or B. Reducing conditions in the groundwater

could be leading to the release of naturally occurring arsenic, iron and manganese to groundwater at this location.

PID readings of field samples collected from Boring B6 at two-foot intervals ranged from 0.6 to 1.0 ppm.

LEL readings for methane from the length of Boring B6 did not exceed 0.0 percent.

Boring B8 (Figure 4) at the approximate location of the 2007 Pacific Rim preliminary soil sampling report's Test Pit 15

- Boring B8, Soil Sample B8-7
  - Barium: 35 mg/kg (CUL = 16,000 mg/kg)
  - Chromium: 14 mg/kg (CUL for chromium III= 2,000 mg/kg)
- Boring B8, Soil Sample B8-15
  - Barium: 28 mg/kg (CUL = 16,000 mg/kg)
  - Chromium: 13 mg/kg (CUL for chromium III= 2,000 mg/kg)
- MW8-111420, Groundwater
  - Barium (total): 37µg/L (CUL= 3,200 µg/L)
  - Iron (total/dissolved): 8,600/560 µg/L (CUL= 11,000 µg/L)
  - Manganese (total/dissolved): 2,500/2,500 µg/L (CUL= 750 µg/L)

None of the constituent concentrations detected in soil samples from Boring B8 exceeded the MTCA Methods A or B CULs for unrestricted land use.

Manganese was detected in groundwater sample MW8-111420 at a concentration that exceeded the MTCA Methods A or B. Reducing conditions in the groundwater could be leading to the release of naturally occurring manganese to groundwater at this location.

PID readings of field samples collected from Boring B8 at two-foot intervals ranged from 0.2 to 0.4 ppm.

LEL readings for methane from the length of Boring B8 did not exceed 0.0 percent.

PID readings from the debris fill area borings are listed in Table 5 below.

Table 5
Summary of Debris Fill Area PID Readings

Boring	Location	2 ft bgs (ppm)	4 ft bgs (ppm)	6 ft bgs (ppm)	8 ft bgs (ppm)	10 ft bgs (ppm)	12 ft bgs (ppm)	14 ft bgs (ppm)
B2	Northwestern corner of Parcel A	0.6	0.7	0.8	0.6	0.5	0.6	0.8
B3	Southeastern portion of Parcel A	0.3	0.5	0.5	0.4	26.2	1.2	0.6
B4	Northwestern corner of Parcel A	0.2	0.1	0.2	0.2	0.2	0.2	0.2
B5	Western border of Parcel A	0.5	0.7	0.6	0.9	NR	0.6	0.5
B6	South central portion of Parcel B	0.6	0.6	0.7	0.8	0.7	0.7	1.0
B7	Southern portion of Parcel B	0.3	0.3	0.3	0.5	1.4	0.6	0.8
B8	North central border of Parcel C	0.3	0.4	0.3	0.3	0.2	0.3	0.2
B9	Central portion of Parcel A	0.6	1.0	0.7	0.6	0.6	0.4	0.6
B10	Central portion of Parcel A	0.5	0.8	0.6	0.4	0.4	0.4	0.4

NR = No reading due to the presence of scrap metal

2.3.2.5 Fill Piles and Log/Materials Storage Areas

The following COCs were detected in soil samples from Boring B11 and groundwater sample MW11-111420 (Figure 4) at the log/materials storage area in the central portion of Parcel A:

- Boring 11, Soil Sample B11-7
  - TPH as heavy oil: 67 mg/kg (CUL = 2,000 mg/kg)
  - Barium: 58 mg/kg (CUL = 16,000 mg/kg)
  - Chromium: 23 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Copper 19 mg/kg (CUL = 3,200 mg/kg)
- Boring 11, Soil Sample B11-15
  - Barium: 36 mg/kg (CUL = 16,000 mg/kg)
  - Chromium: 22 mg/kg (CUL for chromium III= 2,000 mg/kg)

- Copper: 9.2 mg/kg (CUL = 3,200 mg/kg)

- MW11-111420, Groundwater
  - Barium (total): 32 µg/L (CUL= 3,200 µg/L)
  - Iron (total/dissolved): 3,900/95 µg/L (CUL= 11,000 µg/L)
  - Iron (dissolved): 95 µg/L (CUL= 11,000 µg/L)
  - Manganese (total): 110 µg/L (CUL= 750 µg/L)

None of the constituent concentrations detected in the soil and groundwater samples collected from B11/MW11 exceeded the MTCA Methods A or B CULs for unrestricted land use.

Copper in soil sample B11-7, collected at 7 feet bgs, slightly exceeded the CUL based on groundwater protection of 14 mg/kg. Migration of copper from this soil to groundwater is unlikely as it was not detected in the groundwater sample collected from this location. Note: the groundwater surface in MW11 at the time of sampling was measured at 3.47 feet below the top of the well casing.

PID readings of field samples collected from Boring B11 at two-foot intervals ranged from 0.3 to 0.7 ppm.

LEL readings for methane from the length of Boring B11 did not exceed 0.0 percent.

The following COCs were detected in surface soil samples SS9 and SS10 (Figure 5) collected from the western and central portions of Parcel A, where a wood debris fill pile had previously been identified:

- Surface soil sample SS9
  - Barium: 40 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 16 mg/kg (CUL for chromium III= 2,000 mg/kg)

- Surface soil sample SS10
  - TPH as heavy oil: 170 mg/kg (CUL= 2,000 mg/kg)
  - Anthracene: 0.026 mg/kg (CUL= 24,000 mg/kg)
  - Fluoranthene: 0.05 mg/kg (CUL= 3,200 mg/kg)
  - Pyrene: 0.042 mg/kg (CUL= 2,400 mg/kg)
  - Benzo(a)pyrene: 0.056 mg/kg (CUL=0.1 mg/kg)
  - cPAH TEQ= 0.08898 mg/kg (CUL= 0.1 mg/kg)
  - Barium: 180 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 39 mg/kg (CUL for chromium III= 2,000 mg/kg)

- Lead: 17 mg/kg (CUL= 250 mg/kg)

None of the constituent concentrations detected in surface soil samples SS9 and SS10 exceeded the MTCA Methods A or B CULs for unrestricted land use.

Barium in sample SS10 exceeded the CUL based on groundwater protection of 83 mg/kg.

PID readings of field samples collected at sample locations SS9 and SS10 (Figure 5) did not exceed 0.1 ppm.

LEL readings for methane in field samples collected at sample locations SS9 and SS10 did not exceed 0.0 percent.

The following COCs were detected in surface soil samples SS11 and SS12 (Figure 5) collected from the western and central portions of Parcel A, where a construction debris fill pile had previously been identified:

- Surface soil sample SS11
  - TPH as diesel: 65 mg/kg (CUL= 2,000 mg/kg)
  - TPH as heavy oil: 650 mg/kg (CUL= 2,000 mg/kg)
  - Naphthalene: 0.12 mg/kg (CUL= 5 mg/kg)
  - 2-Methylnaphthalene: 0.078 mg/kg (CUL= 320 mg/kg)
  - 1-Methylnaphthalene: 0.037 mg/kg (CUL= 34 mg/kg)
  - Acenaphthene: 0.027 mg/kg (CUL= 4,800 mg/kg)
  - Fluorene: 0.042 mg/kg (CUL= 3,200 mg/kg)
  - Anthracene: 0.22 mg/kg (CUL= 24,000 mg/kg)
  - Fluoranthene: 0.52 mg/kg (CUL= 3,200 mg/kg)
  - Pyrene: 0.39 mg/kg (CUL=2,400
  - Benzo(a)pyrene: 0.33 mg/kg (CUL = 0.1 mg/kg)
  - cPAH TEQ= 0.5369 mg/kg (CUL= 0.1 mg/kg)
  - Barium: 89 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 21 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Lead: 11 mg/kg (CUL= 250 mg/kg)
- Surface soil sample SS12
  - TPH as heavy oil: 130 mg/kg (CUL= 2,000 mg/kg)
  - Naphthalene: 0.014 mg/kg (CUL= 5 mg/kg)
  - 2-Methylnaphthalene: 0.017 mg/kg (CUL= 320 mg/kg)

- 1-Methylnaphthalene: 0.026 mg/kg (CUL= 34 mg/kg)
- Fluoranthene: 0.015 mg/kg (CUL= 3,200 mg/kg)
- Pyrene: 0.022 mg/kg (CUL= 2,400 mg/kg)
- cPAH TEQ= 0.00011 mg/kg (CUL= 0.1 mg/kg)
- Barium: 70 mg/kg (CUL= 16,000 mg/kg)
- Chromium: 20 mg/kg (CUL for chromium III= 2,000 mg/kg)
- Lead: 8.5 mg/kg (CUL= 250 mg/kg)

None of the constituent concentrations detected in surface soil samples SS11 and SS12 exceeded the MTCA Methods A or B CULs for unrestricted land use, with the exception of total TEQ for cPAHs in sample SS11.

None of the groundwater samples collected for this project contained detectable concentration of any cPAHs. Furthermore, except for surface soil samples SS3 (discussed above) and SS11, no other surface soil samples exhibited a total TEQ for cPAHs greater than the CUL. These data suggest the occurrence of soil at the site with a total TEQ for cPAHs greater than the CUL is limited, and has not impacted the perched groundwater beneath the Site.

Barium in surface soil sample SS11 slightly exceeded the CUL of 83 mg/kg based on groundwater protection.

Subsurface soil and groundwater samples have not been collected in the vicinity of sample SS11 to evaluate the vertical extent of barium and/or TEQ for cPAHs and direct evidence of potential groundwater impact.

PID readings of field samples collected at sample locations SS11 and SS12 (Figure 5) did not exceed 0.1 ppm.

LEL readings for methane in field samples collected at sample locations SS11 and SS12 did not exceed 0.0 percent.

The following COCs were detected in surface soil samples SS18 through SS23, collected from the log/materials storage area in the central portion of Parcel A (Figure 5):

- Surface soil sample SS18
  - Barium: 37 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 21 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Copper: 11 mg/kg (CUL= 3,200 mg/kg)
- Surface soil sample SS19

- Barium: 46 mg/kg (CUL= 16,000mg/kg)
- Chromium: 17 mg/kg (CUL for chromium III= 2,000 mg/kg)
- Copper: 12 mg/kg (CUL= 3,200 mg/kg)

- Surface soil sample SS20
  - Barium: 66 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 29 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Copper: 17 mg/kg (CUL= 3,200 mg/kg)

- Surface soil sample SS20A
  - Barium: 71 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 29 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Copper: 17 mg/kg (CUL= 3,200 mg/kg)

- Surface soil sample SS21
  - Barium: 28 mg/kg (CUL= 16 000 mg/kg)
  - Chromium: 18 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Copper: 7.5 mg/kg (CUL= 3,200 mg/kg)

- Surface soil sample SS22
  - Anthracene: 0.014 mg/kg (CUL= 24,000 mg/kg)
  - Chrysene: 0.067 mg/kg (CUL= 0.1 mg/kg)
  - Fluoranthene: 0.17 mg/kg (CUL= 3,200 mg/kg)
  - Pyrene: 0.15 mg/kg (CUL= 2,400 mg/kg)
  - Benzo(a)pyrene: 0.062 mg/kg (CUL = 0.1 mg/kg)
  - cPAH TEQ= 0.08407 mg/kg (CUL= 0.1 mg/kg)
  - Barium: 57 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 26 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Copper: 19 mg/kg (CUL= 3,200 mg/kg)

- Surface soil sample SS23
  - Naphthalene: 0.016 mg/kg (CUL= 5 mg/kg)
  - Barium: 56 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 25 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Copper: 13 mg/kg (CUL= 3,200 mg/kg)

None of the constituent concentrations detected in the log/materials storage area in the central portion of Parcel A surface soil samples exceeded the MTCA Methods A or B CULs for unrestricted land use.

Copper in samples SS20 and SS22, slightly exceeded the CUL based on groundwater protection of 14 mg/kg, however, copper was not detected in nearby groundwater sample MW11-111420, providing evidence that migration of copper to the underlying perched water is not occurring.

PID readings of field samples collected at sample locations SS18 through SS23 (Figure 5) did not exceed 0.1 ppm.

LEL readings for methane in field samples collected at sample locations SS18 through SS23 did not exceed 0.0 percent.

The following COCs were detected in surface soil samples SS16, SS17, SS24, and SS25, collected from the central and western portions of Parcel A, where imported fill piles had been identified (Figure 5):

- Surface soil sample SS16
  - Barium: 30 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 31 mg/kg (CUL for chromium III= 2,000 mg/kg)
- Surface soil sample SS17
  - Barium: 48 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 20 mg/kg (CUL for chromium III= 2,000 mg/kg)
- Surface soil sample SS24
  - TPH as heavy oil: 280 mg/kg (CUL= 2,000 mg/kg)
  - Naphthalene: 0.078 mg/kg (CUL= 5 mg/kg)
  - 2-Methylnaphthalene: 0.09 mg/kg (CUL= 320mg/kg)
  - 1-Methylnaphthalene: 0.13 mg/kg (CUL= 34 mg/kg)
  - Acenaphthene: 0.036 mg/kg (CUL= 4,800 mg/kg)
  - Fluorene: 0.046 mg/kg (CUL= 3,200 mg/kg)
  - Anthracene: 0.033 mg/kg (CUL= 24,000 mg/kg)
  - Fluoranthene: 0.062 mg/kg (CUL=3,200 mg/kg)
  - Pyrene: 0.11 mg/kg (CUL= 2,400 mg/kg)
  - Benzo(a)pyrene: 0.029 mg/kg (CUL = 0.1 mg/kg)
  - cPAH TEQ= 0.03718 mg/kg (CUL= 0.1 mg/kg)

- Barium: 48 mg/kg (CUL= 16,000 mg/kg)
- Chromium: 23 mg/kg (CUL for chromium III= 2,000 mg/kg)
- Lead: 8.5 mg/kg (CUL= 250 mg/kg)

- Surface soil sample SS25
  - TPH as heavy oil: 160 mg/kg (CUL= 2,000 mg/kg)
  - Barium: 61 mg/kg (CUL= 16, 000 mg/kg)
  - Chromium: 23 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Lead: 35 mg/kg (CUL= 250 mg/kg)

None of the constituent concentrations detected in surface soil samples SS16, SS17, SS24, and SS25 exceeded the MTCA Methods A or B CULs for unrestricted land use.

PID readings of field samples collected at sample locations SS16, SS17, SS24, and SS25 (Figure 5) did not exceed 0.1 ppm.

LEL readings for methane in field samples collected at sample locations SS16, SS17, SS24, and SS25 did not exceed 0.0 percent.

2.3.2.6 Wetlands

The following COCs were detected in surface soil samples SS13, SS14, and SS15 (Figure 5) collected from the wetlands on the eastern portion of Parcel A (Wetland B, Soundview Consultants, 2020):

- Surface soil sample SS13
  - Barium: 28 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 16 mg/kg (CUL for chromium III= 2,000 mg/kg)

- Surface soil sample SS14
  - TPH as heavy oil: 69 mg/kg (CUL= 2,000 mg/kg)
  - Fluoranthene: 0.012 mg/kg (CUL=3,200 mg/kg)
  - Pyrene: 0.013 mg/kg (CUL= 2,400 mg/kg)
  - cPAH TEQ= 0.0011 mg/kg (CUL= 0.1 mg/kg)
  -
  - Barium: 55 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 23 mg/kg (CUL for chromium III= 2,000 mg/kg)

- Lead: 8.1 mg/kg (CUL= 250 mg/kg)

- Surface soil sample SS15
  - TPH as heavy oil: 95 mg/kg (CUL= 2,000 mg/kg)
  - Fluoranthene: 0.06 mg/kg (CUL=3,200 mg/kg)
  - Pyrene: 0.066 mg/kg (CUL= 2,400 mg/kg)
  - Benzo(a)pyrene: 0.039 mg/kg (CUL=0.1 mg/kg)
  - cPAH TEQ= 0.0513 mg/kg (CUL= 0.1 mg/kg)
  - Barium: 64 mg/kg (CUL= 16,000 mg/kg)
  - Chromium: 25 mg/kg (CUL for chromium III= 2,000 mg/kg)
  - Lead: 11 mg/kg (CUL= 250 mg/kg)

None of the constituent concentrations detected in surface soils samples SS13, SS14, and SS15 exceeded the MTCA Methods A or B CULs for unrestricted land use.

PID readings of field samples collected at sample locations SS13, SS14, and SS15 (Figure 5) did not exceed 0.1 ppm.

LEL readings for methane in field samples collected at sample locations SS13, SS14, and SS15 did not exceed 0.0 percent.

Field measurements of conventional water quality parameters including pH, salinity, total dissolved solids, conductivity, and temperature were collected at three locations with standing water in the wetlands (Figure 6, Table 6).

Table 6
Field Measurements of Conventional Water Quality Parameters

Parameter	30 ft North of MW9	45 ft East of MW9	15 ft Northwest of MW3	Average
pH	6.41	7.55	7.1	7.02
Salinity (ppm)	17.1	11.7	17.9	15.6
Total Dissolved Solids (ppm)	25.7	18.1	27.2	23.7
Conductivity (µS)	37.2	25.9	39.2	34.1
Temperature (°C)	7.4	6.7	7.6	7.2

2.3.2.7 Hydrogeologic Data Collection

Following well installation and development, water level measurements were collected from each well and used to calculate the elevation of the measured groundwater table. The measured depth to groundwater was subtracted from the surveyed elevation, provided by CES, Inc., to calculate the elevation of the groundwater table at that location (see Table 7 below). This information was used to construct a water table contour map (Figure 16). The hydrogeologic gradient calculated from this map varies as follows:

- 0.013 foot per foot to the northwest near the southwest corner of the site
- 0.01 foot per foot to the northwest in the northwest portion of the property
- 0.0045 foot per foot to the northeast across the central portion of the property
- 0.006 foot per foot to the east/northeast in the southeast portion of the property

Table 7
Summary of Monitoring Well Elevations and Groundwater Level Measurements

Monitoring Well	Surveyed Elevation (top of casing) (NAVD 88)	Latitude/Longitude	Water Level Below Top of Casing (ft)	Calculated Groundwater Elevation (NAVD 88)
MW1	244.92	Lat: 47° 03'57.232" Long: -122° 56'29.269"	10.94	233.98
MW2	244.96	Lat: 47° 04'06.853" Long: -122° 56'25.093"	12.33	232.63
MW3	247.80	Lat: 47° 03'58.385" Long: -122° 56'11.900"	13.33	234.47

NACD 88 = North American Vertical Datum of 1988
ft = feet

Table 7 (continued)
Summary of Monitoring Well Elevations and Groundwater Level Measurements

Monitoring Well	Surveyed Elevation (top of casing) (NAVD 88)	Latitude/Longitude	Water Level Below Top of Casing (ft)	Calculated Groundwater Elevation (NAVD 88)
MW4	245.28	Lat: 47° 04'06.050" Long: -122° 56'25.227"	12.16	233.12
MW5	244.66	Lat: 47° 04'04.760" Long: -122° 56'25.028"	11.32	233.34
MW6	243.57	Lat: 47° 03'59.941" Long: -122° 56'29.016"	9.84	233.73
MW7	244.52	Lat: 47° 03'58.855" Long: -122° 56'29.345"	10.59	233.93
MW8	248.59	Lat: 47° 03'56.447" Long: -122° 56'25.062"	6.50	242.09

MW9	253.10	Lat: 47° 04'00.662" Long: -122° 56'12.522"	13.98	239.12
MW10	257.25	Lat: 47° 04'01.648" Long: -122° 56'13.810"	ND	nd
MW11	241.72	Lat: 47° 04'03.358" Long: -122° 56'19.744"	3.47	238.25

NACD 88 = North American Vertical Datum of 1988
ft = feet
ND ____ = None detected
nd = not determined

Earth Solutions (2016) reported that the permeability of soils at the Site had been reduced by the removal of permeable native soils, and replacement with non-permeable fill materials as part of gravel mining operations. They report that the remaining sandy soils are discontinuous and hydraulic communication has been reduced overall and is not laterally continuous. They report that the recharge potential (via interflow) for wetlands adjacent to the east/southeast of the Site is considered to be low. They reported that the sporadic nature of the perched groundwater suggests that it may not be interconnected and, therefore, may not behave as a pervasive interflow regime.

Our interpretation of the groundwater data collected from the permanent wells installed for this project suggests that the groundwater surface, at the time of this study, may be interconnected, primarily based on the reasonably consistent elevations of groundwater measured across the Site.

3.0 CONCEPTUAL SITE MODEL

The following sections present an updated CSM (Figure 22), including potential contaminant release and transport mechanisms, exposure pathways, and receptors. The CSM identifies data gaps in the existing characterization data and defines applicable regulatory screening levels.

3.1 CONTAMINANT RELEASE AND TRANSPORT

The Site was operated as a gravel pit from at least 1960 through the 1990s. To support operations, diesel, heavy oils, and solvents were stored and used on the Site in a localized area, i.e., the garage area (see Figure 3). This general portion of the Site also supported a UST, an AST, and vehicle maintenance activities. The tanks and the garage had all been removed prior to this RI.

Potential sources for contamination at the former UST location, former AST location, garage, and vehicle maintenance area include the following:

- Fuel storage, including diesel fuel that was stored in the UST (removed in 1993).
- Unknown contents of the former AST
- Former vehicle maintenance operations, including the presumed use of solvents and handling/storage of used oil

Following its use as a gravel pit, wood debris, logs and construction debris such as concrete, asphalt, metal and wire were used as fill at the Site.

An aerial photograph from 1990 indicates logs and materials were stored on Parcel A at that time.

Multiple fill piles were identified on Parcel A in 2015. The Site developer, Green Cove Park Development/Westbrook Investments, indicated the fill piles – consisting of wood debris, construction debris, and imported fill – have all been subsequently removed and no materials are currently stored above ground at the Site. The Ages 2015 soil sampling report addressed contamination concerns associated with the 2015 fill piles and reported sporadic trace amounts of heavy oil and metals (see Section 3.7).

A resident complaint alleged creosote logs were stored at the Site, though the logs cited in the complaint were on an adjacent property. However, logs (not known or suspected to have been treated with creosote) were reported in multiple test pits at the Site. Potential sources for contamination at the fill areas and material storage locations include the following:

- Fill debris of unknown origin placed sporadically at the Site

- Wood debris used as fill material

This RI has confirmed the presence of the following COCs in soil and/or groundwater at concentrations greater than the applicable CULs for unrestricted land use:

- Arsenic
    - Groundwater at the northwestern corner of Parcel A (sample MW2), western border of Parcel A (sample MW5), and the south portion of Parcel B (sample MW6 and MW7). Buried wood and construction debris were identified in all of these borings, except MW2.

Arsenic in groundwater can potentially be a result of leaching from the wood and debris fill. Degradation of the buried wood can reduce groundwater oxidation-reduction potential (ORP), which in turn can increase mobility of naturally occurring arsenic, and other metals, in the soil, resulting in a transfer of these metals to the shallow groundwater. Since the shallow groundwater and deeper aquifer are disconnected (separated by relatively impermeable layers of glacial and non-glacial sedimentary soil), migration of arsenic-impacted groundwater to the deep aquifer is not anticipated.

Arsenic-impacted shallow groundwater and potential discharge to the western wetlands at the Site (Wetlands A and D, Soundview Consultants, 2020) is a possible concern based on the detected concentrations of dissolved arsenic in groundwater samples MW2 and MW5. Based on the hydrogeologic contours for the Site (Figure 15), groundwater in the vicinity of MW6 and MW7 is not expected to reach the western wetlands.

- Iron
    - Groundwater at the western border of Parcel A (sample MW5) and the south portion of Parcel B (samples MW6 and MW7). Buried wood and construction debris were identified in all three of these borings.

Iron in groundwater may be a result of leaching from the wood and debris fill, and/or leaching of naturally occurring iron due to a reduced ORP. Since the shallow groundwater and deeper aquifer are disconnected, migration of iron-impacted groundwater to the deep aquifer is not anticipated.

Iron-impacted shallow groundwater and potential discharge to the western wetlands at the Site is a possible concern based on elevated concentrations of dissolved iron in groundwater sample MW5.

- Manganese
    - Groundwater at the northwestern corner of Parcel A (samples MW2, MW4, and MW5), southeastern portion of Parcel A (sample MW3), and the south portion

of Parcel B (samples MW6 and MW7). Construction debris and/or buried wood were identified in all of these borings except MW2, MW4, and MW6.

Manganese in groundwater may be a result of leaching from the wood and debris fill and/or leaching of naturally occurring manganese due to a reduced ORP. Since the shallow groundwater and deeper aquifer are disconnected, migration of manganese-impacted groundwater to the deep aquifer is not anticipated.

Manganese-impacted shallow groundwater and potential discharge to the eastern wetlands at the Site (Wetlands B and E, Soundview Consultants, 2020) and western wetlands at the Site is a possible concern based on elevated concentrations of dissolved manganese in groundwater samples MW2, MW3, MW4 and MW5.

- TPH as heavy oil
    - Subsurface soil at the southeastern portion of Parcel A where petroleum odor, wood debris, and construction debris had previously been identified (sample B3-10)
    - Groundwater at the northwestern corner of Parcel A (sample MW2), where petroleum odor, wood, and construction debris had previously been identified and in the southern portion of Parcel B, where buried wood and construction debris had previously been identified (sample MW7)

Potential sources of TPH to the subsurface soil at the southeastern portion of Parcel A include construction debris and/or buried wood. Potential transport mechanisms for the subsurface TPH as heavy oil include leaching to groundwater driven by infiltrating surface waters. If the TPH reached the groundwater, it could subsequently discharge to the wetlands on the eastern portion of the Site. Note: TPH was detected in the groundwater sample collected from MW3 at a concentration less than the applicable CUL.

TPH as heavy oil in groundwater at the northwestern portion of Parcel A and southern portion of Parcel B can potentially be a result of leaching from the wood and construction debris fill. Since the shallow groundwater and deeper aquifer are disconnected, migration of TPH-impacted groundwater to the deep aquifer is not anticipated. Discharge of TPH-impacted shallow groundwater to the western wetlands at the Site is a possible concern for MW2, based on the hydrogeologic contours of the Site.

- cPAHs
    - Surface soil near the southern boundary of Parcel A, where a construction debris fill pile had previously been identified (sample SS11)
    - Surface soil at the stained area north of the garage (sample SS3)

Potential sources of cPAHs to the surface soil near the southern boundary of Parcel A and north of the garage include historical fuel releases associated with sand and gravel operations and/or construction fill piles storage. Potential transport mechanisms of the

cPAHs include surface stormwater runoff and leaching to subsurface soil and groundwater. However, analytical data presented herein do not indicate that the lateral and/or vertical transport of cPAHs from surface soil have occurred. No cPAHs were detected in any of the groundwater samples analyzed for this project.

3.2 EXPOSURE PATHWAYS AND RECEPTORS

An exposure pathway describes the mechanisms by which human or ecological exposure to contaminants can occur assuming no remedial action or protective control is in place. An exposure pathway is considered complete if a human or ecological receptor can be exposed to a contaminant via that pathway. Assuming a future residential land use, potential pathways for receptors to be exposed to contaminants in Site soil, groundwater, and surface water are outlined below and presented if Figure 22.

Soil

Current and future potentially complete exposure pathways for soil include the following:

- Construction workers: dermal contact with or incidental ingestion of contaminated soils
- Residents: dermal contact with or incidental ingestion of contaminated soils
- Terrestrial wildlife: contacting contaminated soils
- Terrestrial wildlife: consuming soil invertebrates that have accumulated bioaccessible contaminants from the soil

In addition to these pathways, contaminants in soil can leach to groundwater, acting as a secondary source; therefore, the soil-to-groundwater pathway is considered in areas where there is a potentially complete groundwater exposure pathway.

Groundwater

As discussed further in Section 4.3, shallow perched groundwater at the Site is not used for drinking water and is not a practical future source of drinking water; therefore, potable use of on-Site groundwater is not considered a potentially complete exposure pathway for the Site.

As discussed in Sections 2.1 and 2.2.3, the underlying aquifer used for drinking water is approximately 150 feet bgs and is effectively disconnected to shallow perched groundwater at the Site; therefore, the deeper aquifer is not considered a potentially complete exposure pathway for the Site.

Current and future potentially complete exposure pathways for shallow perched groundwater at the Site include the following:

- Construction workers: direct contact with contaminated groundwater during excavation or other construction-related activities

- Ecological receptors (benthic, aquatic): direct exposure to shallow groundwater contaminants discharged to the sediment bioactive zone or surface water
- Higher-trophic-level organisms (ecological or human): consuming ecological receptors contaminated by shallow groundwater discharges to the sediment bioactive zone or surface water

Surface Water

Current and future potentially complete exposure pathways for surface water in nearby water bodies, or more likely storm water ponding at the Site, include the following:

- Ecological receptors (benthic, aquatic): direct exposure to contaminants in sediment bioactive zone or surface water
- Higher-trophic-level organisms (ecological or human): consuming ecological receptors contaminated by exposure to surface water

4.0 SUMMARY, CONCLUSIONS & RECOMMENDATIONS

The following sections present a summary of our findings, and ENPRO's conclusions and recommendations based on the information gathered during this RI.

4.1 SUMMARY AND CONCLUSIONS

Localized soil and groundwater contamination with certain COCs at concentrations greater than the applicable CULs for unrestricted land use has been identified at the Site. All exceedances are presented in figures 7 to 14 and summarized below:

- Arsenic
    - Concentrations of dissolved arsenic ranging from 7.4 µg/L to 42 µg/L (CUL= 5 µg/L) were detected in groundwater near the northwestern corner of Parcel A (sample MW2), western border of Parcel A (sample MW5), and southern portion of Parcel B (samples MW6 and MW7). Buried fill material with a significant component of wood was observed in soil borings B5 and B7.

      Arsenic in groundwater can potentially be a result of leaching from the wood and debris fill. Degradation of buried wood can result in reduced groundwater ORP conditions, which in turn can increase the mobility of naturally occurring arsenic in soil, releasing it to the groundwater.

      Since the shallow groundwater and deeper aquifer are not connected, migration of arsenic-impacted groundwater to the deep aquifer is not anticipated. However, arsenic-impacted shallow groundwater and subsequent discharge to the wetlands west of the Site is a potential concern based on elevated concentrations of dissolved arsenic in groundwater samples from MW2 and MW5, collected from the northwest corner and western border of Parcel A.

      Based on our hydrogeologic assessment, it appears that groundwater may flow from the northwestern portion of Parcel A towards Wetlands A and D as identified by Soundview Consultants (2020). However, it has not been established whether or not the wetlands are connected to the shallow perched groundwater table.

- Iron
    - Concentrations of dissolved iron ranging from 16,000 µg/L to 42,000 µg/L (CUL= 11,000 µg/L) in groundwater at the western border of Parcel A (sample MW5), and the southern portion of Parcel B (samples MW6 and MW7), where buried wood and construction debris were identified. Buried fill material with a significant component of wood was observed in soil borings B5 and B7.

Elevated concentrations of iron in groundwater may be a result of leaching from the wood and debris fill and/or naturally occurring soils, exacerbated by a reduced ORP. Since the shallow groundwater and deeper aquifer are not connected, migration of iron-impacted groundwater to the deep aquifer is not anticipated. However, iron-impacted shallow groundwater and subsequent discharge to the wetlands west of the Site is a potential concern based on elevated concentrations of dissolved iron in groundwater sample MW5, collected from the western border of Parcel A.

- Manganese
    - Concentrations of dissolved manganese ranging from 990 µg/L to 18,000 µg/L (CUL= 750 µg/L) were detected in groundwater near the northwestern corner of Parcel A (sample MW2), southeastern portion of Parcel A (sample MW3), western border of Parcel A (samples MW4 and MW5), and the southern portion of Parcel B (samples MW6 and MW7) and the central portion of Parcel C (sample MW8)). Buried fill material with a significant component of wood was observed in soil borings B3, B5, B7, and B8.

      Elevated concentrations of manganese in groundwater may be a result of leaching from the wood and debris fill and/or naturally occurring soils, exacerbated by a reduced ORP conditions. Since the shallow groundwater and deeper aquifer are not connected, migration of manganese-impacted groundwater to the deep aquifer is not anticipated. However, manganese-impacted shallow groundwater and subsequent discharge to the wetlands on the east portion of the Site (Wetlands B and E as identified by Soundview Consultants, 2020) and on the west portion of the Site (Wetlands A and D as identified by Soundview Consultants, 2020) may be a concern based on elevated concentrations of dissolved manganese in groundwater samples MW2, MW3, MW4 and MW5.

- TPH as heavy oil
    - TPH as oil was detected at a concentration of 4,500 mg/kg (CUL = 2,000 mg/kg) in subsurface soil collected from 10 feet bgs at the southeastern portion of Parcel A (sample B3-10). Buried fill material with a significant component of wood was observed in soil boring B3. Petroleum odors had been reported in soils from test pits in this vicinity of the Site (Robinson Noble, 2008).

      Potential sources of TPH detected in sample B3-10 may include buried debris and/or buried wood. Potential transport mechanism of subsurface TPH as heavy oil in soil includes leaching to groundwater, which could subsequently discharge to the wetland onsite.

      Laboratory results of the groundwater sample collected from MW3 do not provide evidence that the TPH detected in soil has leached to the groundwater.

Furthermore, it has not been established if surface water in the adjacent wetlands is connected to the shallow perched groundwater beneath the Site.

- TPH as oil was detected at a concentration of 630 µg/L in groundwater sample MW7, collected near the southern portion of Parcel B, and at a concentration of 540 µg/L in groundwater sample MW2, collected near the northwestern corner of Parcel A (CUL= 500 µg/L). Buried fill material with a significant component of wood was observed in soil boring B7. Petroleum odors were reported in soils from a test pit excavated in this vicinity of the Site (Pacific Rim Soil & Water, Inc., 2007).

  TPH as heavy oil in groundwater at the northwestern corner of Parcel A and southern portion of Parcel B can potentially be a result of leaching from the wood and construction debris fill.

  Since the shallow groundwater and deeper aquifer are not connected, migration of TPH-impacted groundwater to the deep aquifer is not anticipated. Discharge of TPH-impacted shallow groundwater to wetlands D and A is a potential concern based on elevated TPH concentrations detected in MW2, and our interpretation of a localized west-northwestern groundwater flow direction.

  It has not been established if surface water in the adjacent wetlands is connected to the shallow perched groundwater beneath the Site.

- cPAHs
  - A calculated cPAH TEQ of 0.5369 mg/kg (CUL= 0.1 mg/kg) was determined for surface soil near the south-central portion of Parcel A (sample SS11), where a construction debris fill pile had previously been identified.

    A calculated cPAH TEQ of 0.11701 mg/kg (CUL= 0.1 mg/kg) was detected in surface soil sample SS3 collected to evaluate stained soil previously identified north of the garage.

    Potential sources of cPAHs detected in these surface soil samples include historical fuel releases associated with sand and gravel operations and/or construction fill piles storage. Potential transport mechanisms of cPAHs in surface soil include stormwater runoff and leaching to subsurface soil and groundwater.

    Analytical data from nearby surface soil and groundwater samples do not provide evidence that such migration has occurred.

4.2 RECOMMENDATIONS

Based on the information available for the Site, the following data gaps should be addressed to evaluate feasibility of potential remedial alternatives:

- Delineate the lateral and vertical extent of surface soil contamination with cPAHs to the north of the garage, and cPAHs at the south-central portion of Parcel A
- Delineate the lateral and vertical extent of subsurface soil contamination with TPH as heavy oil at the southeastern portion of Parcel A
- Delineate the lateral extent of groundwater contamination with arsenic, iron, manganese and TPH as heavy oil in impacted areas of parcels A, B and C. And conduct four consecutive quarters of groundwater sampling and analysis to effectively support Site groundwater characterization.
- Survey elevations of wetlands to assess connectivity with perched water
- Periodic monitoring of groundwater for short list of contaminants and to monitor changes in groundwater elevation over time
- Additional surface and near surface soil sampling around SS3 to evaluate cPAHs.
- Additional surface and near surface soil sampling around SS11 to evaluate cPAHs.
- Additional subsurface soil sampling around B3-10 to evaluate TPH as heavy oil.

5.0 REFERENCES

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Author of Publication: ENPRO
Date of Publication: March 25, 2019

Name of Publication: *Environmental Soil Sampling*,
Author of Publication: Ages
Date of Publication: July 20, 2015

Name of Publication: *Improper Solid Waste Handling – Former Sundberg Gravel Pit*
Author of Publication: Thurston PH
Date of Publication: November 16, 2015

Name of Publication: *Initial Investigation Field Report*
Author of Publication: Ecology
Date of Publication: March 5, 2020

Name of Publication: *Phase I Environmental Site Assessment: 220 Cooper Point Road NW, Olympia, Washington*
Author of Publication: AMEC
Date of Publication: April 2, 2004

Name of Publication: *Phase 1 Environmental Site Assessment: Sundberg Estates*
Author of Publication: Ages
Date of Publication: January 30, 2015

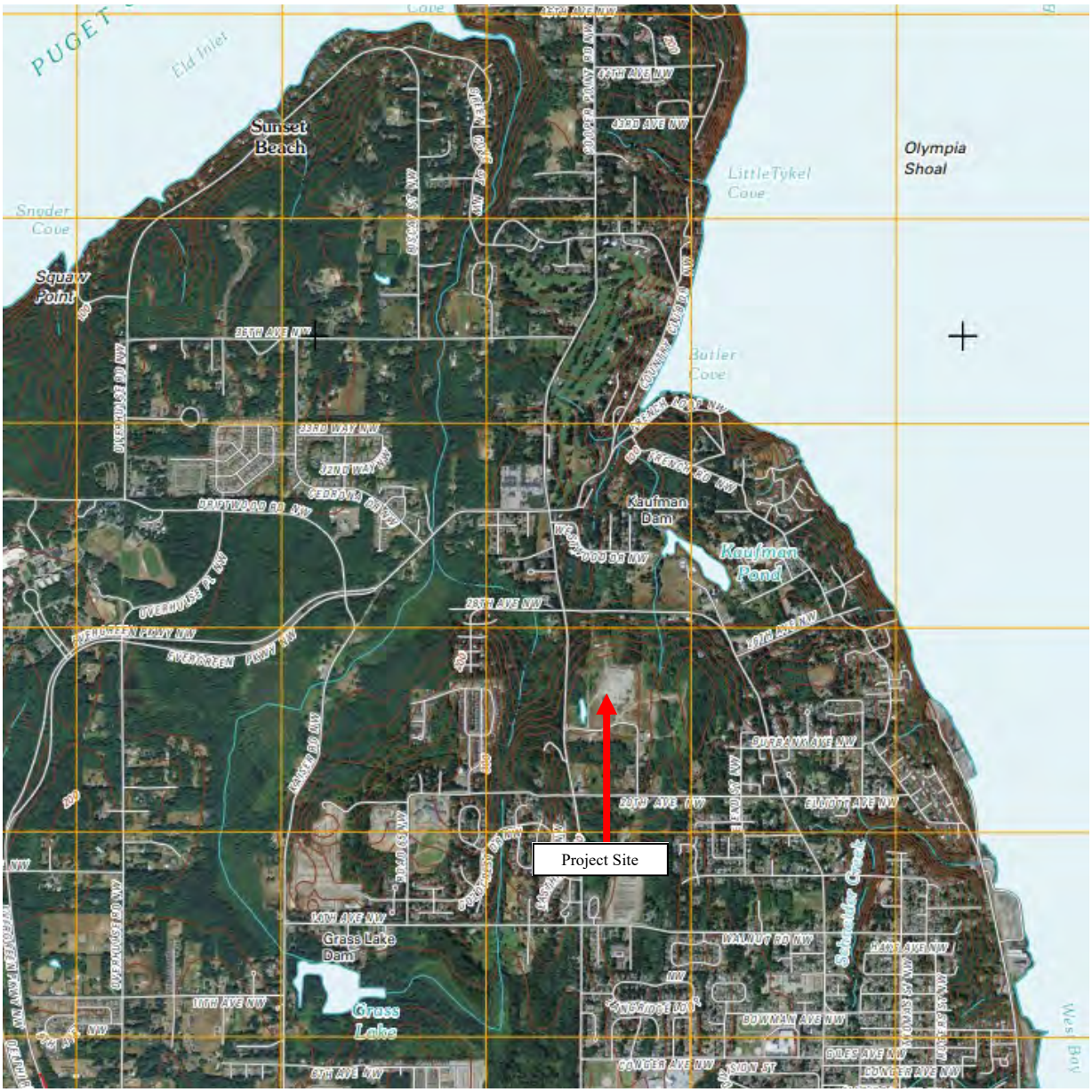
Name of Publication: *Phase I ESA and Geotechnical Report Addendum*
Author of Publication: Ages
Date of Publication: October 18, 2016

Name of Publication: *Polycyclic Aromatic Hydrocarbons and Benzo[a]pyrene: Changes to MTCA Default Cleanup Levels for 2017*
Author of Publication: Ecology
Date of Publication: January 2020

Name of Publication: *Preliminary Geotechnical Report: Sundberg Estates*
Author of Publication: Ages
Date of Publication: January 12, 2015

Name of Publication:	*Revised Hydrogeologic Report: Proposed Green Cove Park Residential Development, Cooper Point Road Northwest, Olympia, Washington*
Author of Publication:	Earth Solutions
Date of Publication:	October 11, 2016
Name of Publication:	*Soils Investigation Preliminary*
Author of Publication:	Pacific Rim
Date of Publication:	November 2, 2007
Name of Publication:	*Sundberg Estates Subsurface Investigation (Phase II Environmental Site Assessment)*
Author of Publication:	Robinson Noble
Date of Publication:	March 4, 2008
Name of Publication:	*Technical Memorandum: Green Cove Records Review, Data Gaps Analysis, and Recommendations*
Author of Publication:	Robinson Noble
Date of Publication:	June 5, 2019
Name of Publication:	*Underground Storage Tank Removal Located at 2200 Cooper Point Road NW, Olympia, Site #011500, County Plot 8170000000*
Author of Publication:	Stemen
Date of Publication:	March 18, 2013
Name of Publication:	*Wetlands and Fish and Wildlife Habitat Assessment Report & Buffer Enhancement Plan, Green Cove Park*
Author of Publication:	Soundview Consultants
Date of Publication:	June 2017, Revised September 2018, February 2020 and November 2020

Appendix A
Site Figures



Source: U.S. Geological Survey, 2011

Figure 1
TOPOGRAPHIC MAP

Scale: 1 inch = 2,000 feet

N

Source: Thurston County Assessors Office, 2020

Figure 2
SITE BOUNDARY AND PARCEL LOCATIONS

Scale: 1 inch = 600 feet

Figure 3
AREAS OF CONCERN NOTED IN PREVIOUS REPORTS

Scale: 1 inch = 600 feet

Figure 4
SOIL BORING AND GROUNDWATER SAMPLING LOCATIONS

Scale: 1 inch = 600 feet

Figure 5
SURFACE SOIL SAMPLING LOCATIONS

Scale: 1 inch = 600 feet

Figure 6
SURFACE WATER PARAMETERS IN THE WETLANDS

Scale: 1 inch = 600 feet

Figure 7
DISSOLVED IRON IN GROUNDWATER EXCEEDING METHOD B NONCANCER CUL (11,000 µg/L)

Scale: 1 inch = 600 feet

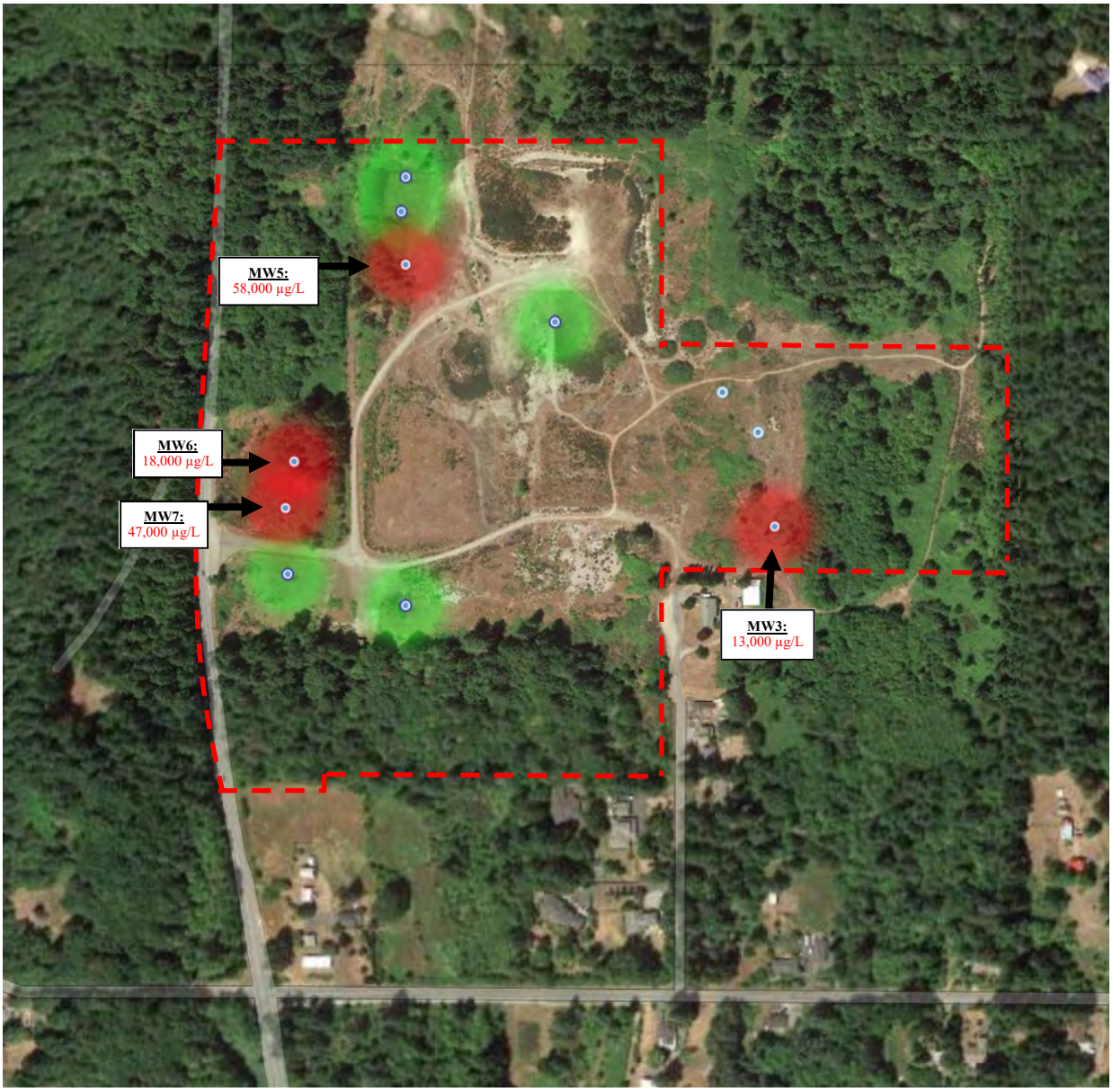


Figure 8
TOTAL IRON IN GROUNDWATER EXCEEDING
METHOD B NONCANCER CUL (11,000 µg/L)

Scale: 1 inch = 600 feet

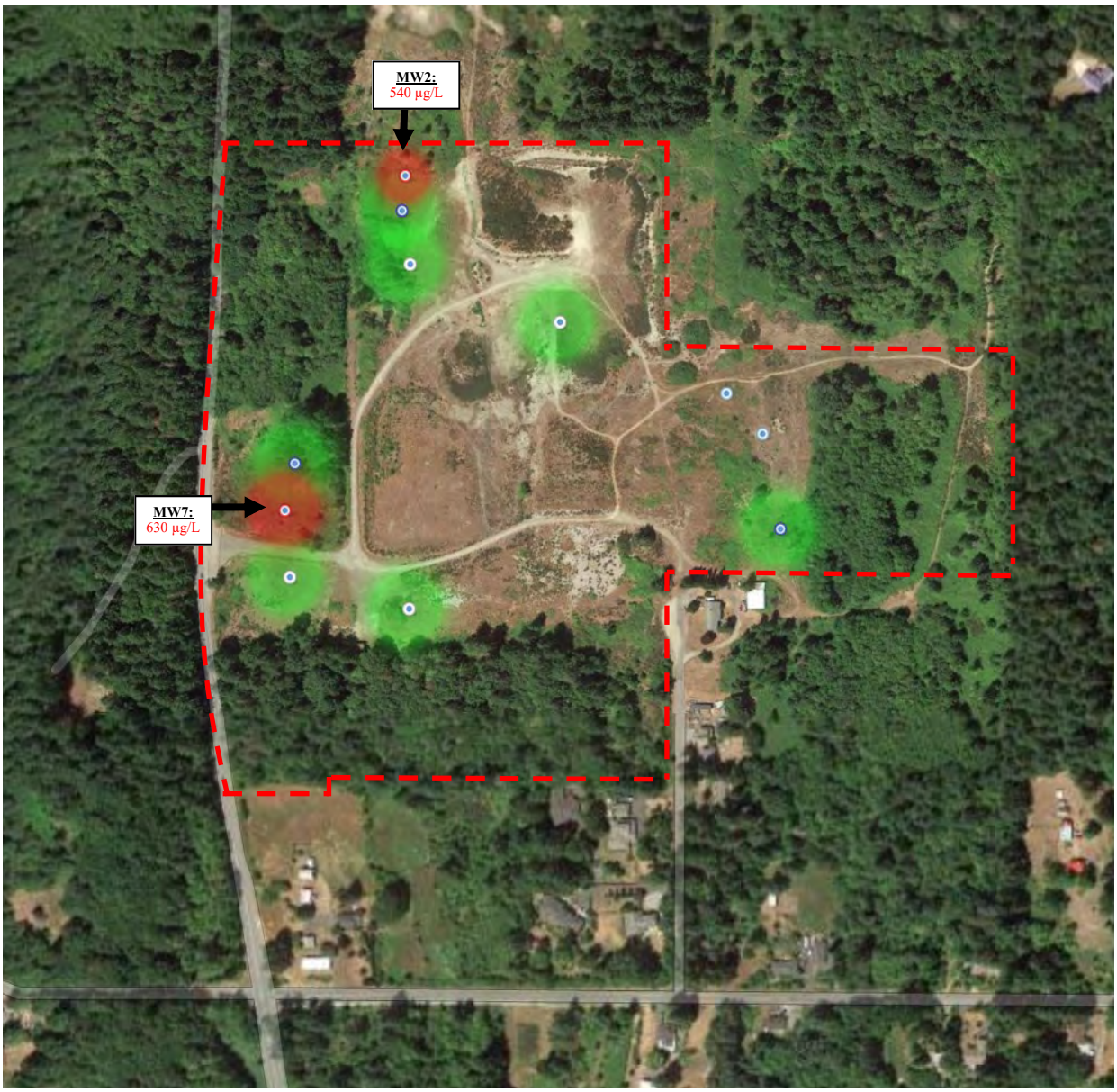


Figure 9
TPH AS HEAVY OIL IN GROUNDWATER EXCEEDING
METHOD A CUL (500 µg/L)

Scale: 1 inch = 600 feet

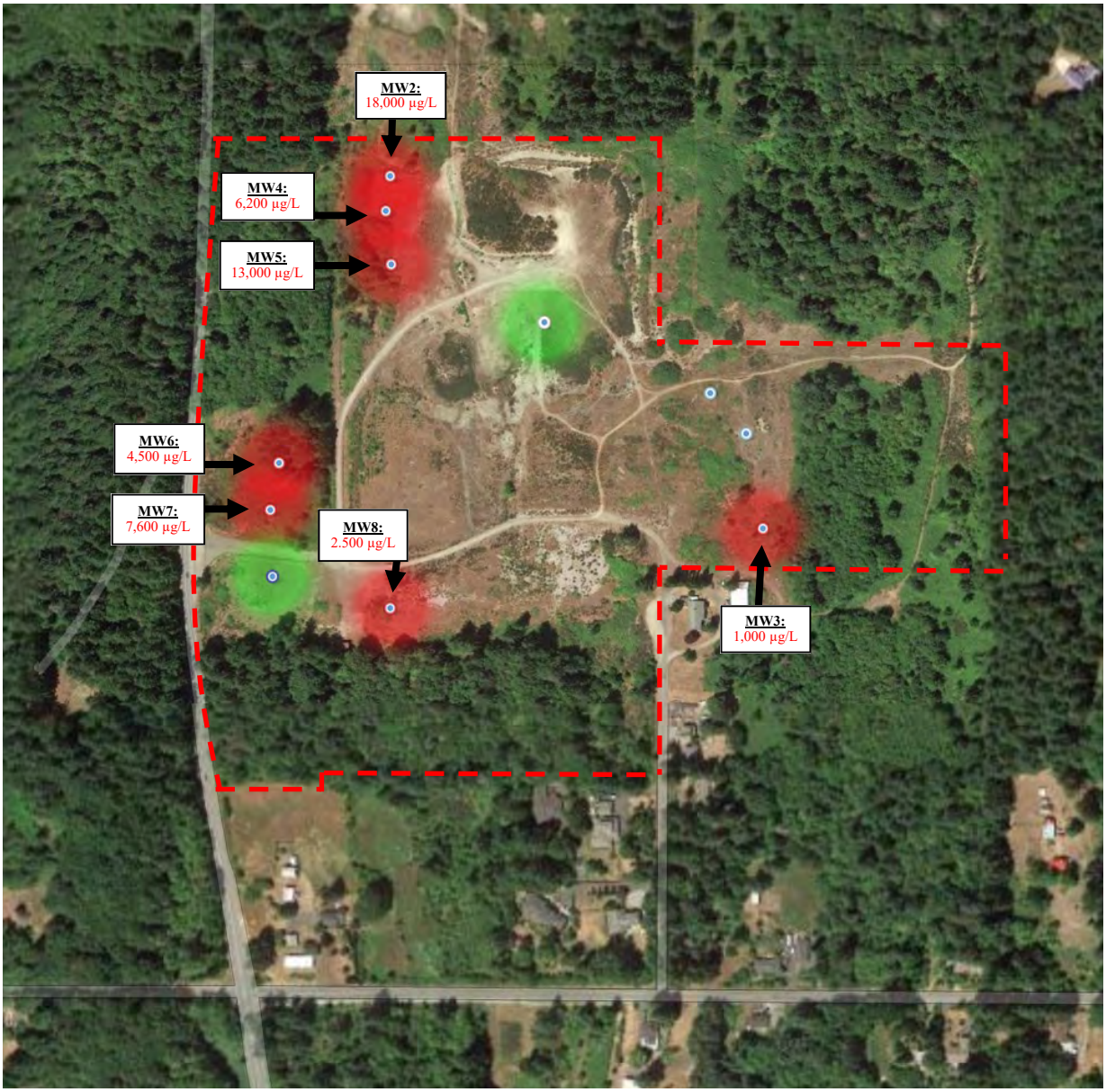


Figure 10
DISSOLVED MANGANESE IN GROUNDWATER EXCEEDING METHOD B NONCANCER CUL (750 µg/L)

Scale: 1 inch = 600 feet

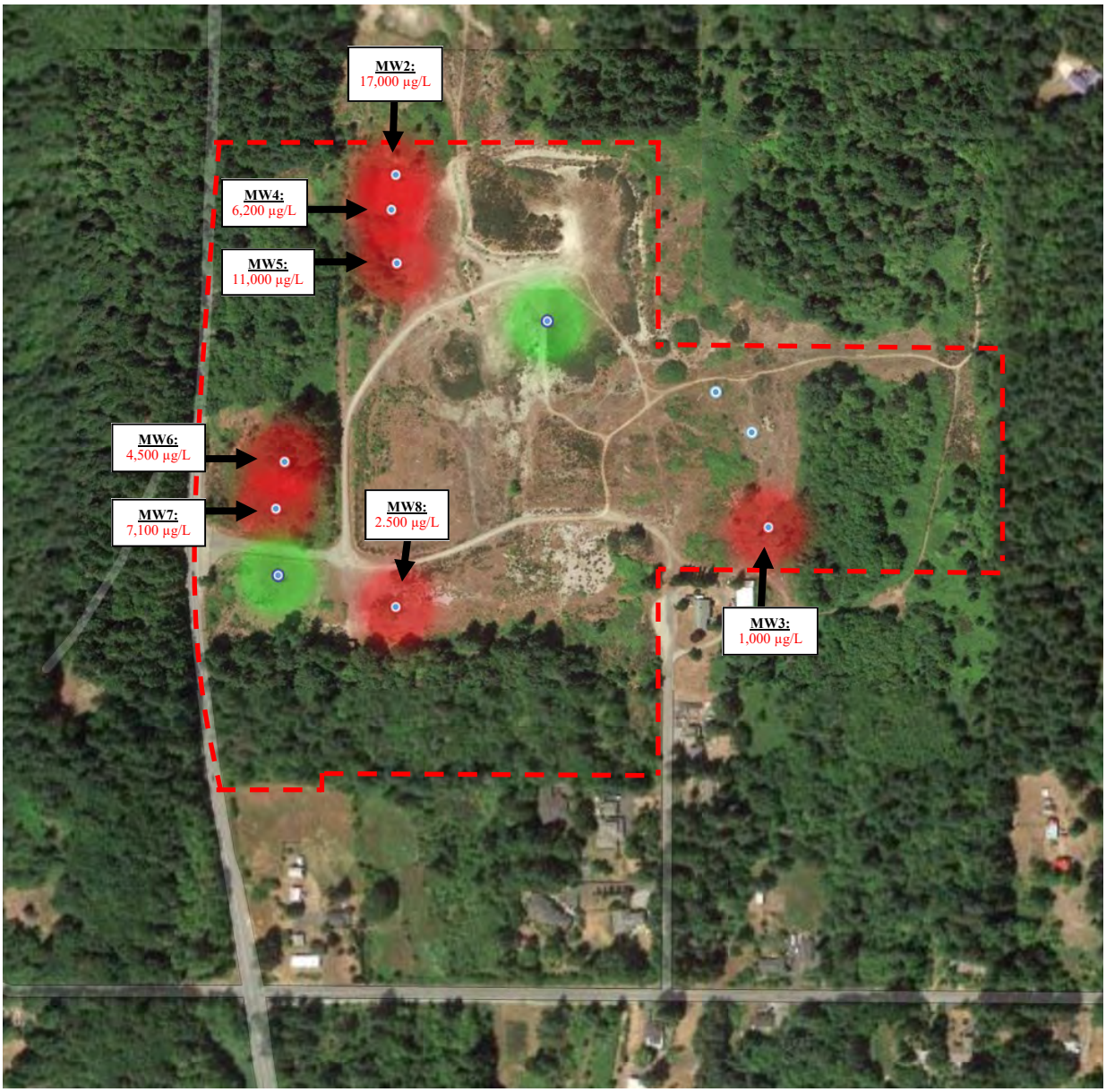


Figure 11
TOTAL MANGANESE IN GROUNDWATER EXCEEDING METHOD B NONCANCER CUL (750 µg/L)

Scale: 1 inch = 600 feet

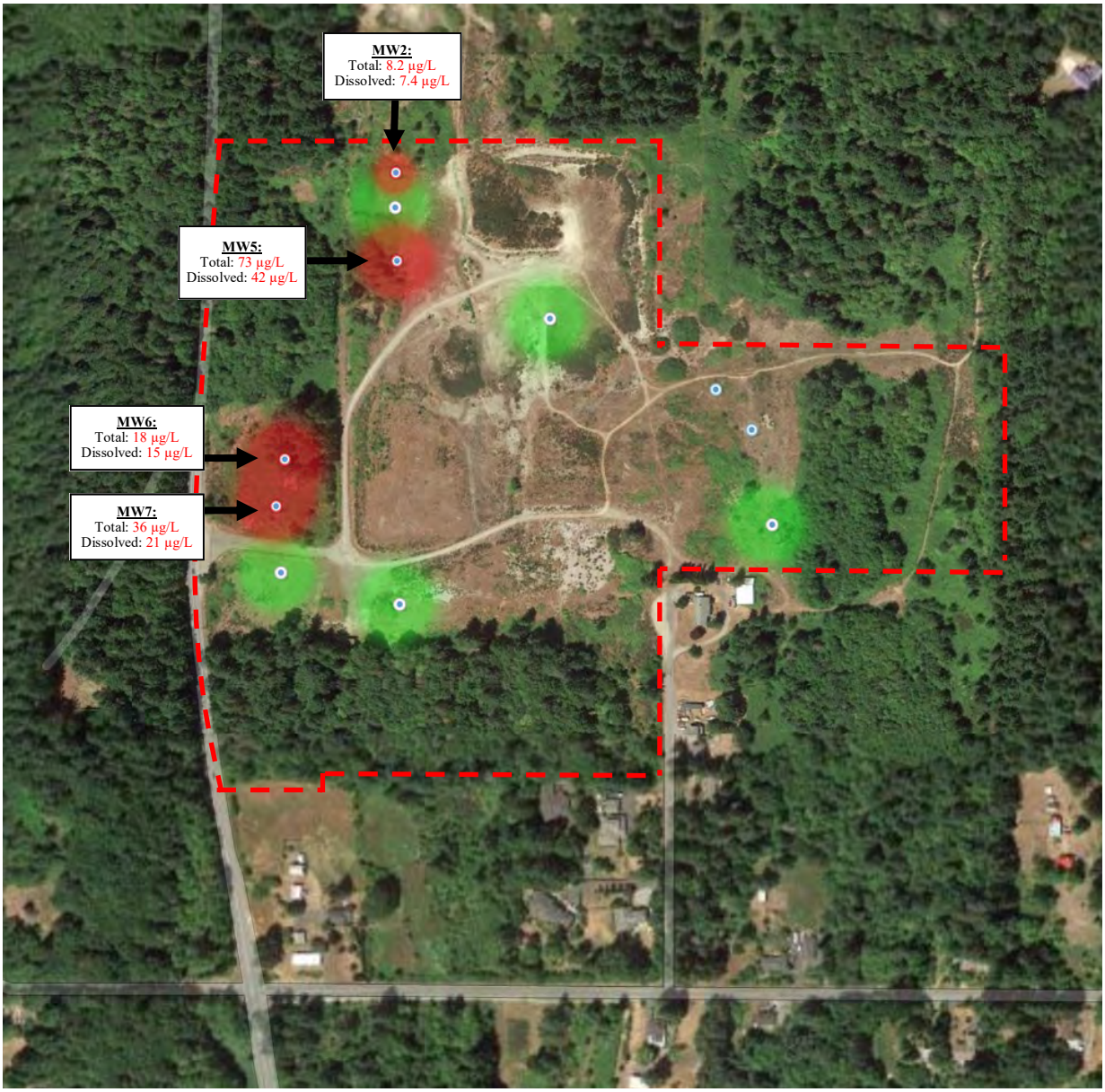


Figure 12
ARSENIC IN GROUNDWATER EXCEEDING
METHOD A CUL (5 µg/L)

Scale: 1 inch = 600 feet

Figure 13
TPH AS HEAVY OIL IN SUBSURFACE SOIL (10 FT) EXCEEDING METHOD A CUL (2,000 mg/kg)

Scale: 1 inch = 600 feet

Figure 14
cPAHs TOTAL TEQ IN SURFACE SOIL EXCEEDING METHOD A
CUL (0.1 mg/kg)

Scale: 1 inch = 600 feet

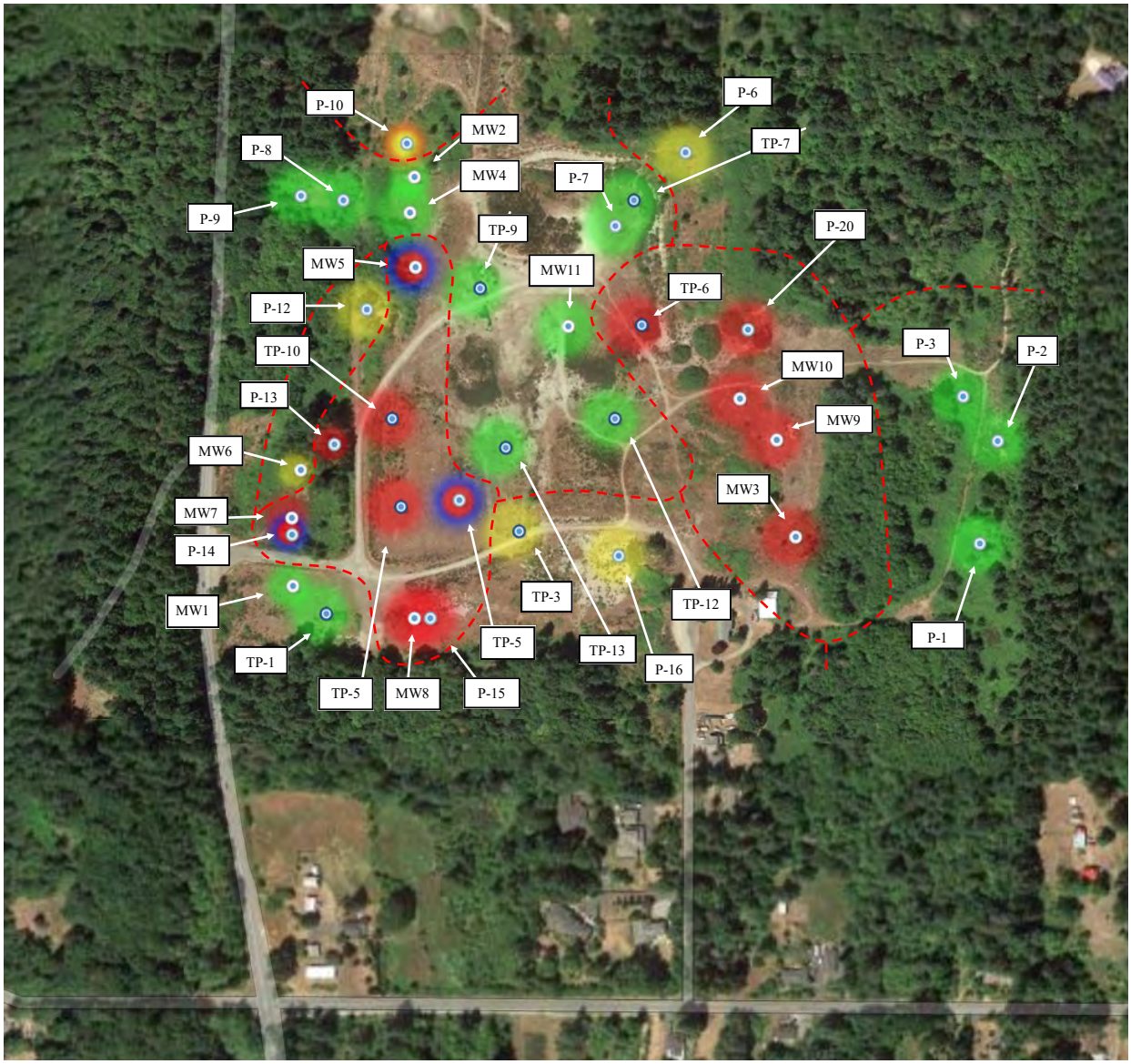


Figure 15
GENERAL VIEW OF SITE SOILS

Scale: 1 inch = 600 feet

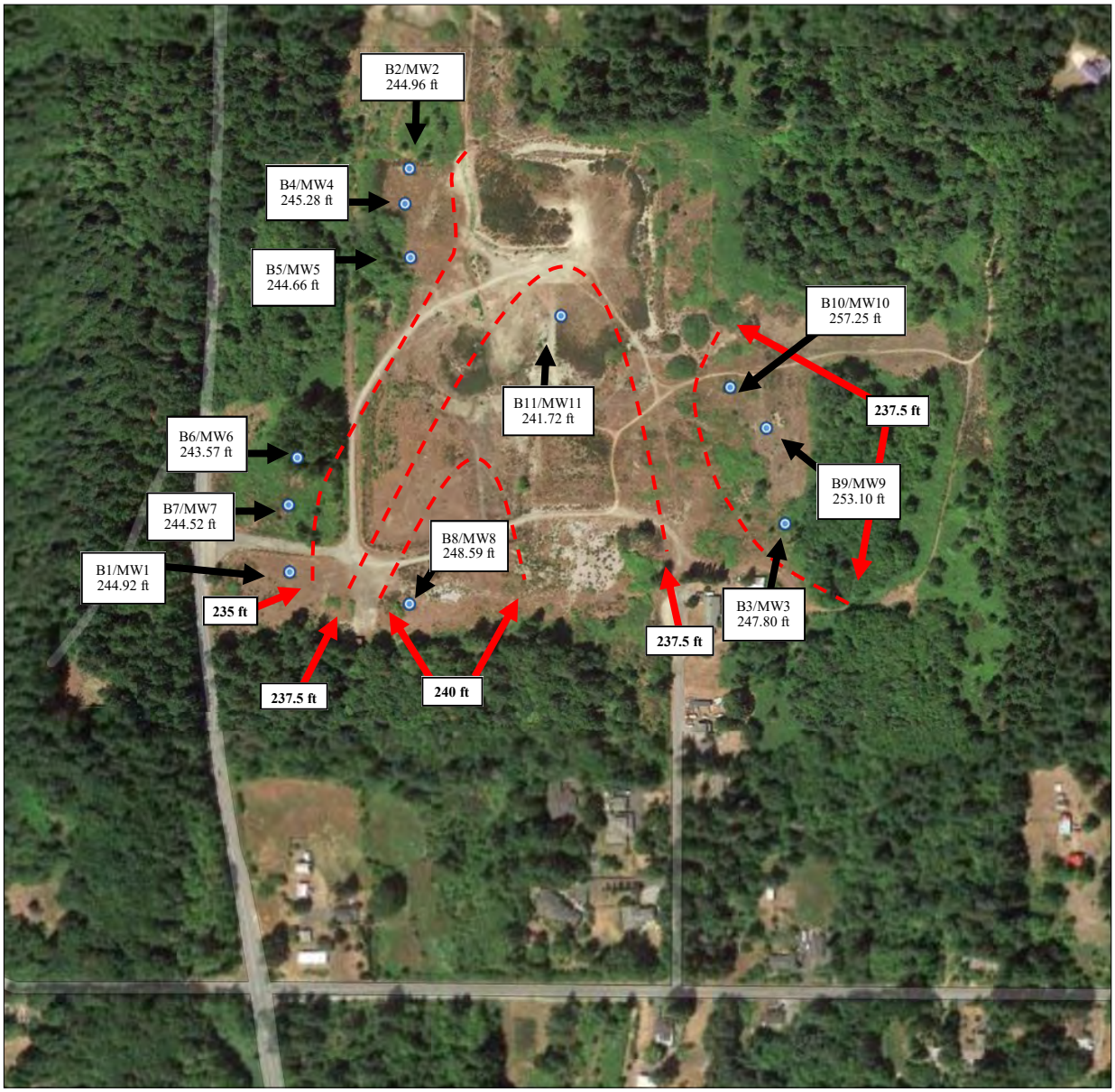


Figure 16
GROUNDWATER ELEVATION CONTOURS

Scale: 1 inch = 600 feet

Figure 17
CROSS SECTION TRANSECTS AND ASSOCIATED EXPLORATION LOCATIONS

Scale: 1 inch = 600 feet

FILENAME	DRAWN	CHECKED BY	APPROVED BY	PROJECT NUMBER
1903-00129-RI_XSECTIONS_2.DWGICD	1/19/2021	MJ 1/19/2021	MJ 1/19/2021	1903-00129-RI

NORTHWEST

A

SOUTHEAST

A'

B-10/MW-10

B-9/MW-9

B-3/MW-3

B-11/MW-11

ELEVATION (FEET)

255

250

245

240

235

230

225

0 40 80
HORIZONTAL SCALE

0 2.5 5
VERTICAL SCALE

LEGEND

B-10/MW-10

- BORING/WELL
- WATER LEVEL DURING DRILLING
- WATER LEVEL AT END OF DRILLING
- SCREENED INTERVAL
- MAXIMUM DEPTH EXPLORED
- SOIL CONTACT

SM= SILTY-SANDS, SAND-SILT MIXTURES

SW= WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES

ML= INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS, WITH SLIGHT PLASTICIT

OL= ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY

CH= INORGANIC CLAYS, OF HIGH PLASTICITY, FAT CLAYS

OH= ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS

PT= PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

GP/GC= POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES/CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES

GP/GM= POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES/SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES

GP/SC= POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES/CLAYEY-SANDS, SAND-CLAY MIXTURES

CH/GC= INORGANIC CLAYS, OF HIGH PLASTICITY, FAT CLAYS/CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES

ENPRO environmental

FIGURE 18

GEOLOGIC CROSS SECTION A-A'

GREEN COVE PARK DEVELOPMENT
1903-00129-RI
220 COOPER POINT ROAD NW
OLYMPIA, WASHINGTON

PROJECT NUMBER	1903-00129-RI
APPROVED BY	MJ 1/19/2021
CHECKED BY	MJ 1/19/2021
DRAWN BY	1/19/2021
FILENAME	1903-00129-RI_XSECTIONS_2.DWG\CD

SOUTH

B

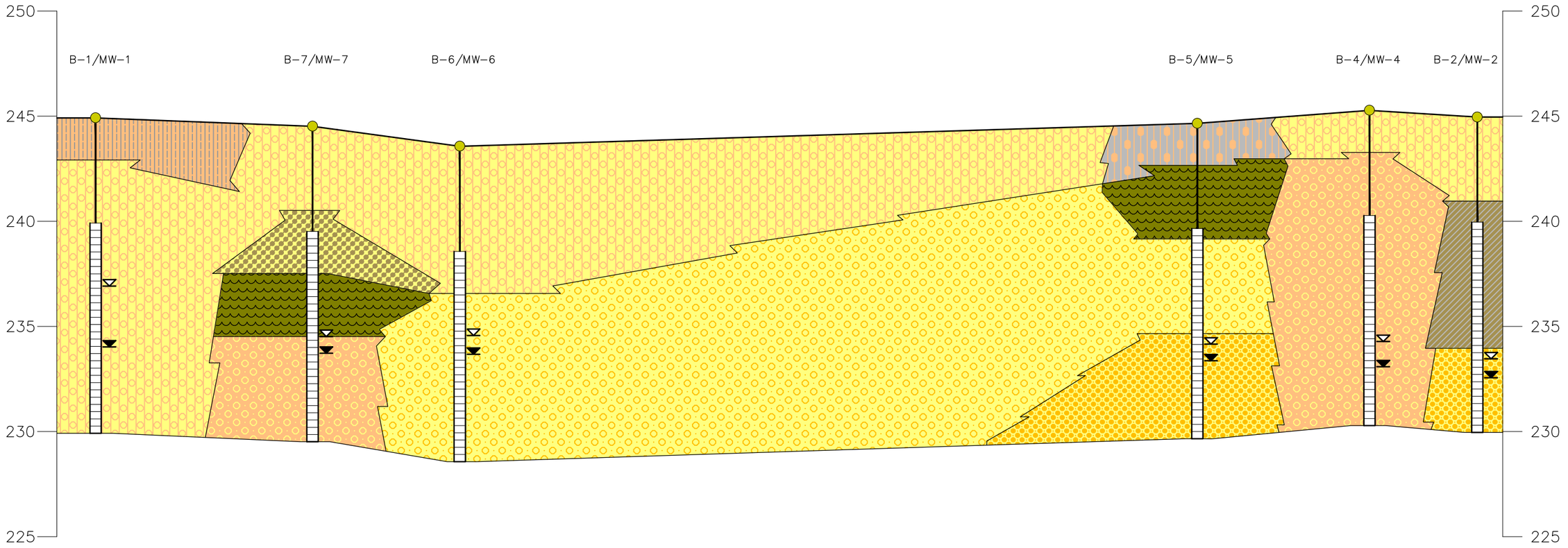
NORTH

B'

ELEVATION (FEET)

250
245
240
235
230
225

B-1/MW-1
B-7/MW-7
B-6/MW-6
B-5/MW-5
B-4/MW-4
B-2/MW-2



0 40 80
HORIZONTAL SCALE

0 2.5 5
VERTICAL SCALE

LEGEND

B-4/MW-4 – BORING/WELL

– WATER LEVEL DURING DRILLING

– WATER LEVEL AT END OF DRILLING

– SCREENED INTERVAL

– MAXIMUM DEPTH EXPLORED

– SOIL CONTACT

SM= SILTY-SANDS, SAND-SILT MIXTURES

SW= WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES

SC= CLAYEY-SANDS, SAND-CLAY MIXTURES

OL= ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY

GM= SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES

SP= POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES

CL= INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, LEAN CLAYS, SILT-CLAYS MIXTURES

PT= PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

SW/SM= WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES/SILTY-SANDS, SAND-SILT MIXTURES

ENPRO environmental

FIGURE 19

GEOLOGIC CROSS SECTION B-B'

GREEN COVE PARK DEVELOPMENT
1903-00129-RI
220 COOPER POINT ROAD NW
OLYMPIA, WASHINGTON

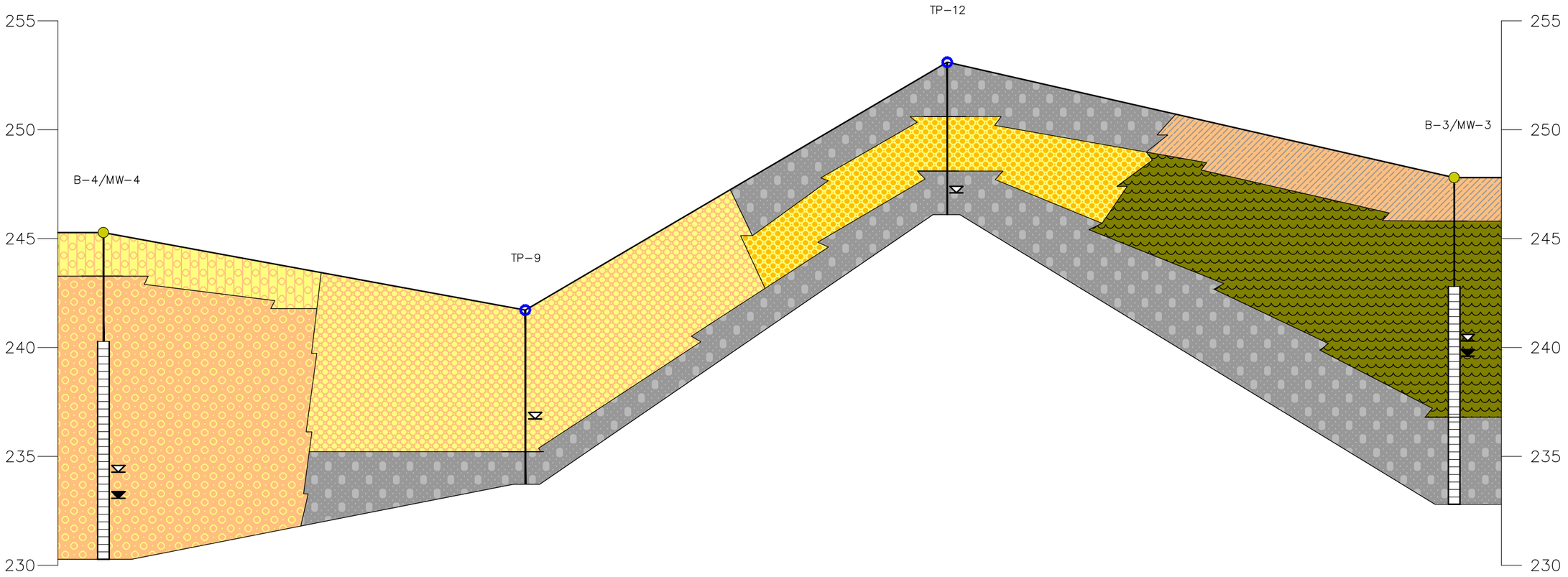
PROJECT NUMBER	1903-00129-RI
APPROVED BY	MJ 1/19/2021
CHECKED BY	MJ 1/19/2021
DRAWN BY	1/19/2021
FILENAME	1903-00129-RI_XSECTIONS_2.DWGIGD

NORTHWEST

C

SOUTHEAST

C'



0 80 160
HORIZONTAL SCALE

0 2.5 5
VERTICAL SCALE

LEGEND

TP-9 B-3/MW-3 – BORING/WELL, TEST PIT

– WATER LEVEL DURING DRILLING

– WATER LEVEL AT END OF DRILLING

– SCREENED INTERVAL

– MAXIMUM DEPTH EXPLORED

– SOIL CONTACT

SM= SILTY-SANDS, SAND-SILT MIXTURES

SP= POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES

OH= ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS

PT= PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

GP/GM= POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES/SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES

SW/SM= WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES/SILTY-SANDS, SAND-SILT MIXTURES

SP/SM= POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES/SILTY-SANDS, SAND-SILT MIXTURES

ENPRO environmental

FIGURE 20

GEOLOGIC CROSS SECTION C-C'

GREEN COVE PARK DEVELOPMENT
1903-00129-RI
220 COOPER POINT ROAD NW
OLYMPIA, WASHINGTON

FILENAME	DRAWN BY	CHECKED BY	APPROVED BY	PROJECT NUMBER
1903-00129-RI_XSECTIONS_2.DWG\CD	1/19/2021	MJ 1/19/2021	MJ 1/19/2021	1903-00129-RI

WEST

D

EAST

D'

ELEVATION (FEET)

260
255
250
245
240
235
230
225

B-6/MW-6
TP-5
P-21
TP-3
P-16
B-3/MW-3

0 80 160
HORIZONTAL SCALE

0 2.5 5
VERTICAL SCALE

LEGEND

TP-3 B-3/MW-3 – BORING/WELL, TEST PIT

– WATER LEVEL DURING DRILLING

– WATER LEVEL AT END OF DRILLING

– SCREENED INTERVAL

– MAXIMUM DEPTH EXPLORED

– SOIL CONTACT

SM= SILTY-SANDS, SAND-SILT MIXTURES

SW= WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES

SP= POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES

GP= POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES

OH= ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS

PT= PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

GP/GM= POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES/SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES

SP/SM= POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES/SILTY-SANDS, SAND-SILT MIXTURES

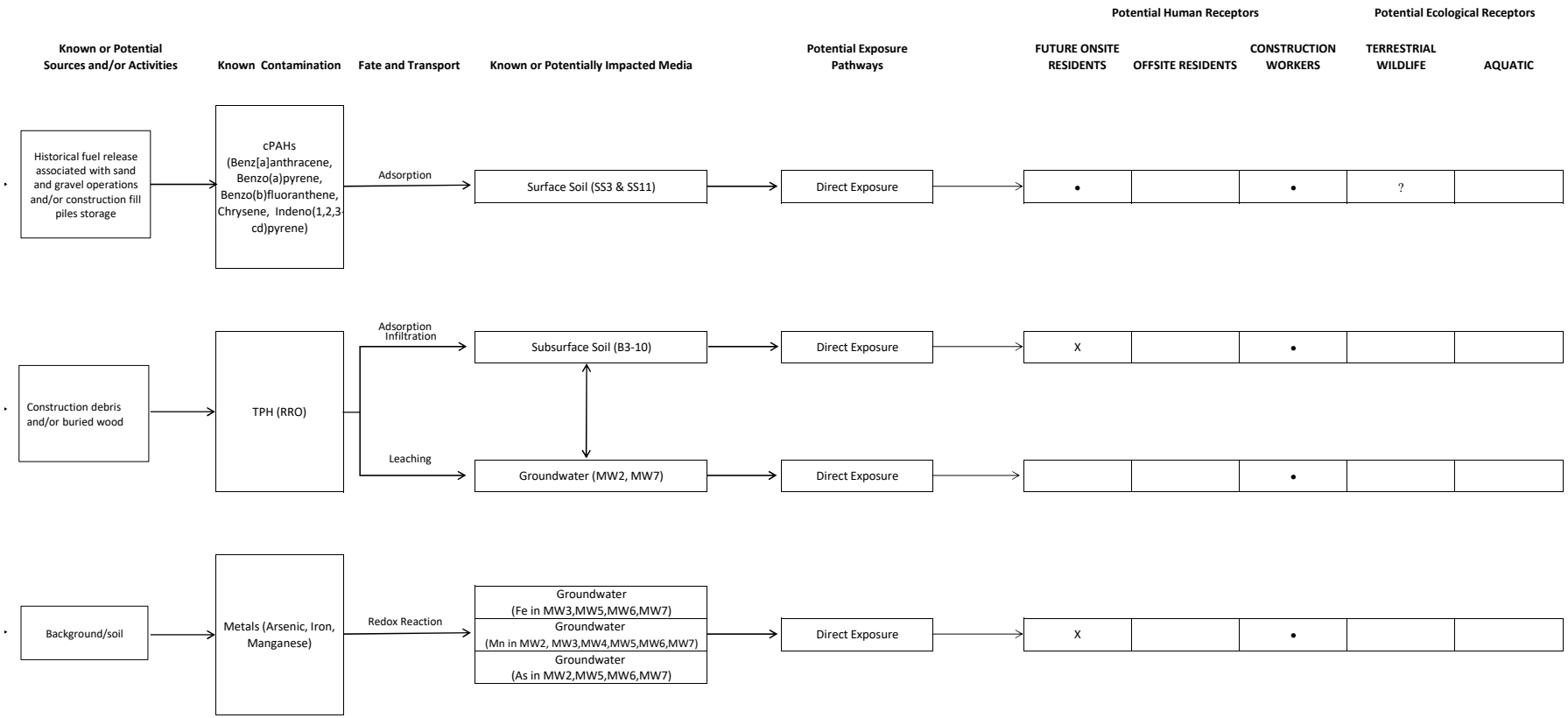
ENPRO environmental

FIGURE 21

GEOLOGIC CROSS SECTION D-D'

GREEN COVE PARK DEVELOPMENT
1903-00129-RI
220 COOPER POINT ROAD NW
OLYMPIA, WASHINGTON

Draft **Conceptual Site Model: Green Cove Park (Former Sundberg Gravel Pit)**



LEGEND:

	Pathway is not complete, no evaluation required
X	Pathway is or may be complete, but is judged to be minor or unlikely. Quantitative data collection not required.
•	Pathway is or may be complete, collect quantitative data.

Appendix B
Photographs

Photo 1

Green Cove Park Development

Project Number: 1903-00129-RI

Green Cove Park Development

2200 Cooper Point Road Northwest, Olympia, Washington

Date of Photos: November 2020

Photo 2

Green Cove Park Development

Project Number: 1903-00129-RI

Green Cove Park Development

2200 Cooper Point Road Northwest, Olympia, Washington

Date of Photos: November 2020

Photo 3

Standing Water in Wetlands

Project Number: 1903-00129-RI

Green Cove Park Development

2200 Cooper Point Road Northwest, Olympia, Washington

Date of Photos: November 2020

Photo 4

(Description)

Project Number: 1903-00129-RI

Green Cove Park Development

2200 Cooper Point Road Northwest, Olympia, Washington

Date of Photos: November 2020

Photo 5

4 Gas Meter Reading at B9

Project Number: 1903-00129-RI

Green Cove Park Development

2200 Cooper Point Road Northwest, Olympia, Washington

Date of Photos: November 2020

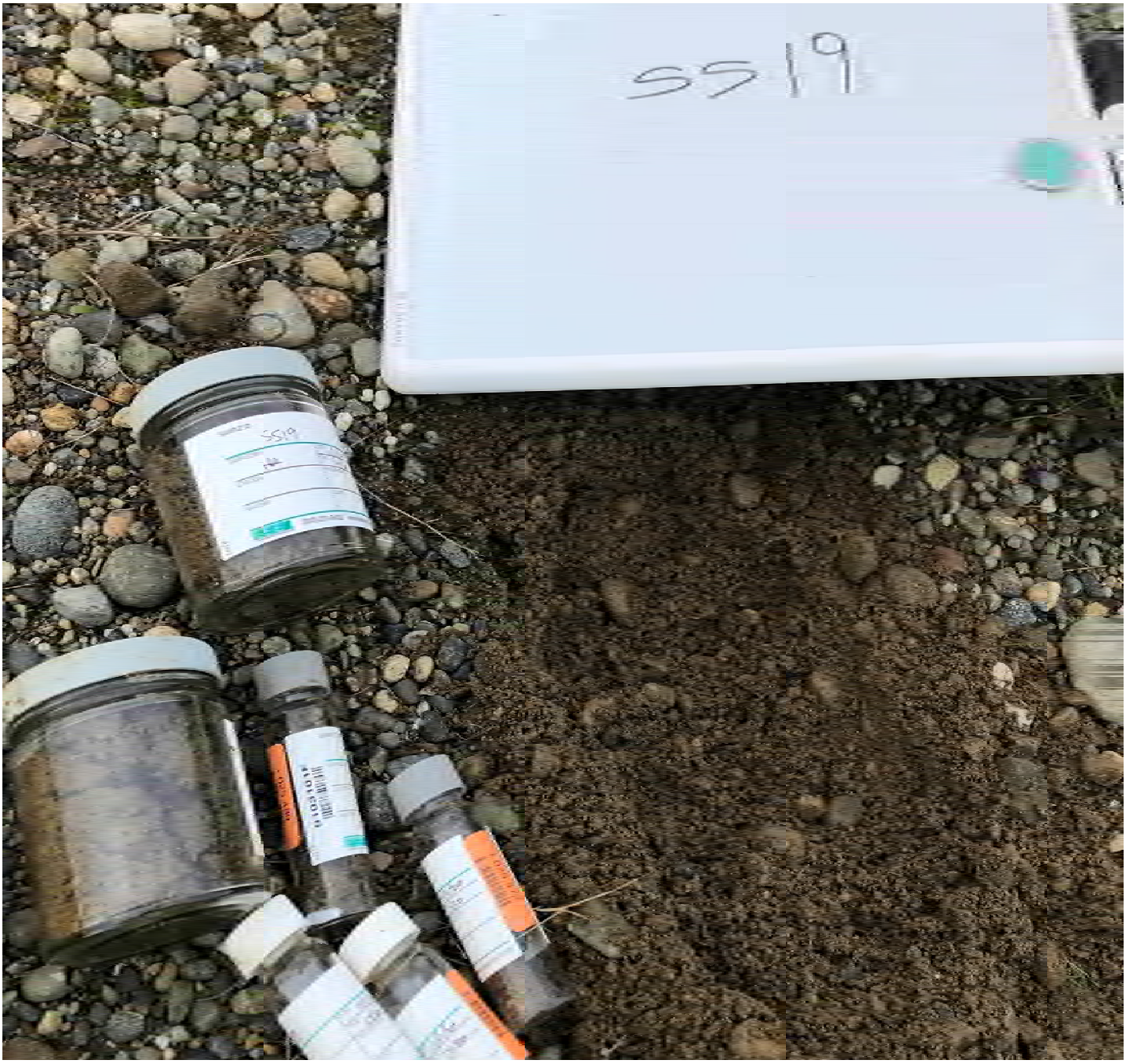


Photo 6

Surface Sample 19

Project Number: 1903-00129-RI

Green Cove Park Development

2200 Cooper Point Road Northwest, Olympia, Washington

Date of Photos: November 2020

Photo 7

Photoionization Reading at Surface Sample 22

Project Number: 1903-00129-RI

Green Cove Park Development

2200 Cooper Point Road Northwest, Olympia, Washington

Date of Photos: November 2020

Photo 8

Monitoring Well 4 Gas Meter Reading

Project Number: 1903-00129-RI

Green Cove Park Development

2200 Cooper Point Road Northwest, Olympia, Washington

Date of Photos: November 2020

Photo 9

Monitoring Well Photoionization Meter Reading

Project Number: 1903-00129-RI

Green Cove Park Development

2200 Cooper Point Road Northwest, Olympia, Washington

Date of Photos: November 2020

Photo 10

Water Quality Field Measurements from Monitoring Well

Project Number: 1903-00129-RI

Green Cove Park Development

2200 Cooper Point Road Northwest, Olympia, Washington

Date of Photos: November 2020

ENPRO environmental

Appendix C
Exploratory Logs

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: B1 Well #: MW1 Page: 1 of 1

Start Date/Time: 11/09/20; 0830	Boring Depth (ft): 15	Well Depth (ft): 15
End Date/Time: 11/09/20; 0915	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): 8	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): 10.9	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 241.9	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.065914, -122.941671	Filter Pack: Monterey #2 sand

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Sample ID	DEPTH (ft)
0							OL—Organic silts with gravel (20%), dark yellowish brown topsoil			0
							SM—Silt and sand with cobbles (30%), olive	0.2		
							SM—Silt and sand with cobbles and gravel (10—20%), olive	0.3		
5								0.3		5
				Soil	0930		SM—Sand and silt with gravel (40—50%), olive	0.3	B1-7	
10							SM—Sand and silt with very little gravel , olive	0.3		10
							SM —Sand and silt with increasing gravel and cobbles, olive	0.2		
15				Soil	1000			0.2	B1-15	15

NOTES: Groundwater sample MW1-111220 collected 11/12/20 at 1500. Wellhead PID = 0.0 ppm and LEL = 0.0%.

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: B2 Well #: MW2 Page: 1 of 1

Start Date/Time: 11/10/20; 1200	Boring Depth (ft): 15	Well Depth (ft): 15
End Date/Time: 11/10/20; 1245	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): 11.5	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): 12.4	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 214.2	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.068592, -122.940474	Filter Pack: Monterey #2 sand

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Sample ID	DEPTH (ft)
0										0
							SM—Sandy silt with cobbles and gravel (50%), olive	0.6		
								0.7		
5							CL—Clay with cobbles and gravel (30%), gray	0.8		5
				Soil	1245			0.6	B2-7/ B2-7a	
10								0.5		10
							SP—Very fine grained sands; well sorted, dark gray	0.6		
								0.8	B2-15/ B2-15a	
15				Soil	1245					15

NOTES: Groundwater sample MW2-111320 collected 11/13/20 at 1130. Wellhead PID = 0.2 ppm and LEL = 0.0%.

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: B3 Well #: MW3 Page: 1 of 1

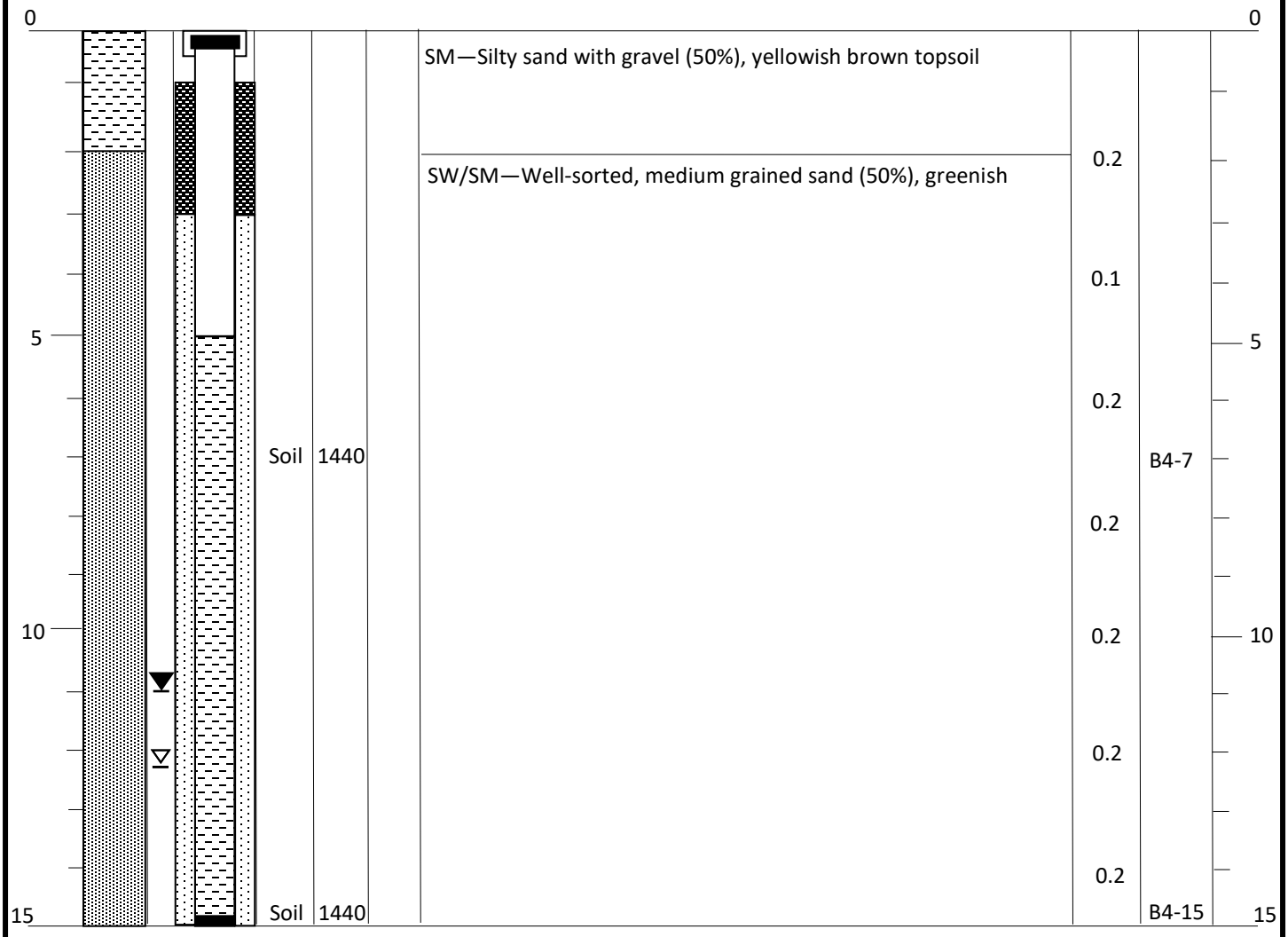
Start Date/Time: 11/09/20; 1040	Boring Depth (ft): 15	Well Depth (ft): 15
End Date/Time: 11/09/20; 1120	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): 7.5	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): 8.2	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 248.7	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.066258, -122.936654	Filter Pack: Monterey #2 sand

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Sample ID	DEPTH (ft)
0							OH—Silt and gravel grading to silty clay with gravel. Rounded cobbles and gravel (~5—10%), dark olive topsoil			0
							PT—Peat and highly organic silt with wood fragments and small amount of rounded cobbles (0.25—8.5 inches), black	0.3		
								0.5		
5								0.5		5
				Soil	1100				B3-7/ B3-7a	
								0.4		
10				Soil	1100			26.2	B3-10	10
							GM to GP—Gray, silty gravel and saturated gravelly silt with rounded cobbles (20%) grading to sandy gravel then to gravel, gray	1.2		
								0.6	B3-15/ B3-15a	
15				Soil	1100					15

NOTES: Additional sample collected from 10 feet bgs due to elevated PID reading. Groundwater sample MW3-111420 and duplicate MW3-111420a collected 11/14/20 at 0915 and 0930, respectively. Wellhead PID = 0.0 ppm and LEL = 0.0%.

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: B4 Well #: MW4 Page: 1 of 1

Start Date/Time: 11/09/20; 1430	Boring Depth (ft): 15	Well Depth (ft): 15
End Date/Time: 11/09.20; 1330	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): 11	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): 12.2	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 214.1	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.068348, -122.940434	Filter Pack: Monterey #2 sand



NOTES: Groundwater sample MW4-111320 collected 11/13/20 at 0930. Wellhead PID = 0.5 ppm and LEL = 0.0%.

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: B5 Well #: MW5 Page: 1 of 1

Start Date/Time: 11/10/20; 1240	Boring Depth (ft): 15	Well Depth (ft): 15
End Date/Time: 11/10/20; 1325	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): 10.5	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): 11.3	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 218.9	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.067991, -122.940416	Filter Pack: Monterey #2 sand

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Sample ID	DEPTH (ft)
0							GM—Silty, sandy, gravel mixture, dark reddish brown			0
							PT—Peat with gravel and clay (fill material), black	0.5		
								0.7		
5							Metal fragments at 5 to 5.5 feet			5
				Soil	1330		SW—Medium grained sand with gravel and cobbles (10—20%), olive gray	0.6	B5-7	
								0.9		
10								Note		10
							SP—Very fine grained sands; well sorted, dark gray	0.6		
								0.5		
15				Soil	1330				B5-15	15

NOTES: A PID reading could not be collected from 10 feet bgs due to the presence of scrap metal. Groundwater sample MW5-111220 collected 11/12/20 at 1615. Wellhead PID = 0.3 ppm and LEL = 40.0%.

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: B6 Well #: MW6 Page: 1 of 1

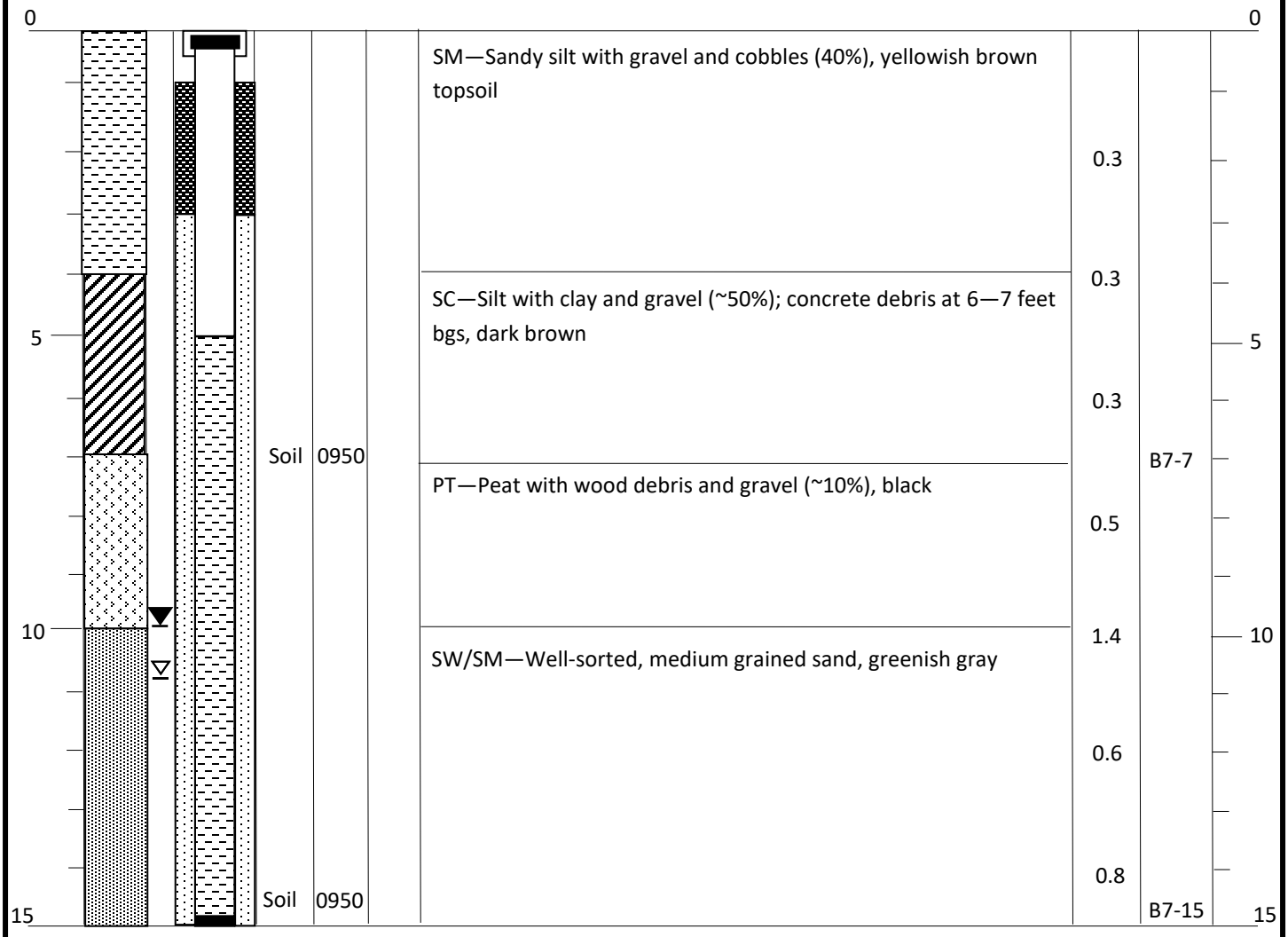
Drilling Start Date/Time:	Boring Depth (ft): 15	Well Depth (ft): 15
Drilling End Date/Time:	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): 9	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): 9.9	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 247.4	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.066719, -122.941400	Filter Pack: Monterey #2 sand

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Sample ID	DEPTH (ft)
0							SM—Sandy silt with gravel and cobbles (40%), yellowish brown topsoil	0.6		0
								0.6		
5							Large (4 inch by 2 inch) oval/sphere asphalt boulder	0.7		5
				Soil	1200		SW—Medium grained sand with gravel and cobbles (10—20%), greenish gray	0.8	B6-7	
10								0.7		10
								0.7		
15				Soil	1200			1.0	B6-15	15

NOTES: Groundwater sample MW6-111220 collected 11/12/20 at 1220. Wellhead PID = 0.1 ppm and LEL = 0.0%.

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: B7 Well #: MW7 Page: 1 of 1

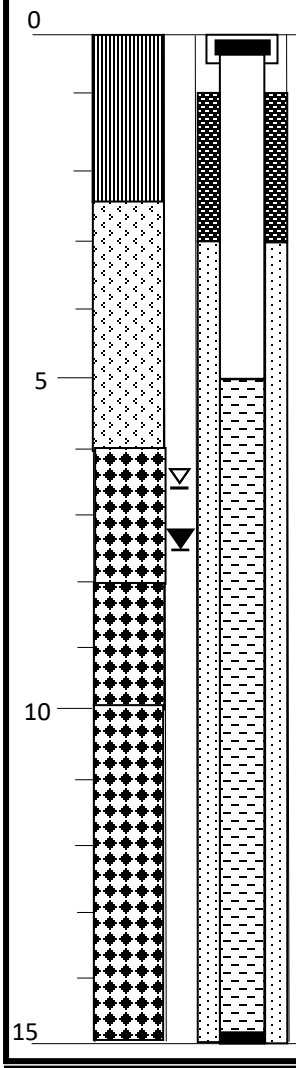
Start Date/Time: 11/10/20; 0900	Boring Depth (ft): 15	Well Depth (ft): 15
End Date/Time: 11/10/20; 0945	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): 10	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): 10.8	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 226.3	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.066375, -122.941490	Filter Pack: Monterey #2 sand



NOTES: Groundwater sample MW7-111220 collected 11/12/20 at 1345. Wellhead PID = 0.2 ppm and LEL = 0.0%.

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: B8 Well #: MW8 Page: 1 of 1

Drilling Start Date/Time:	Boring Depth (ft): 15	Well Depth (ft): 15
Drilling End Date/Time:	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): 7.5	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): 6.5	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 254.2	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.065724, -122.940326	Filter Pack: Monterey #2 sand

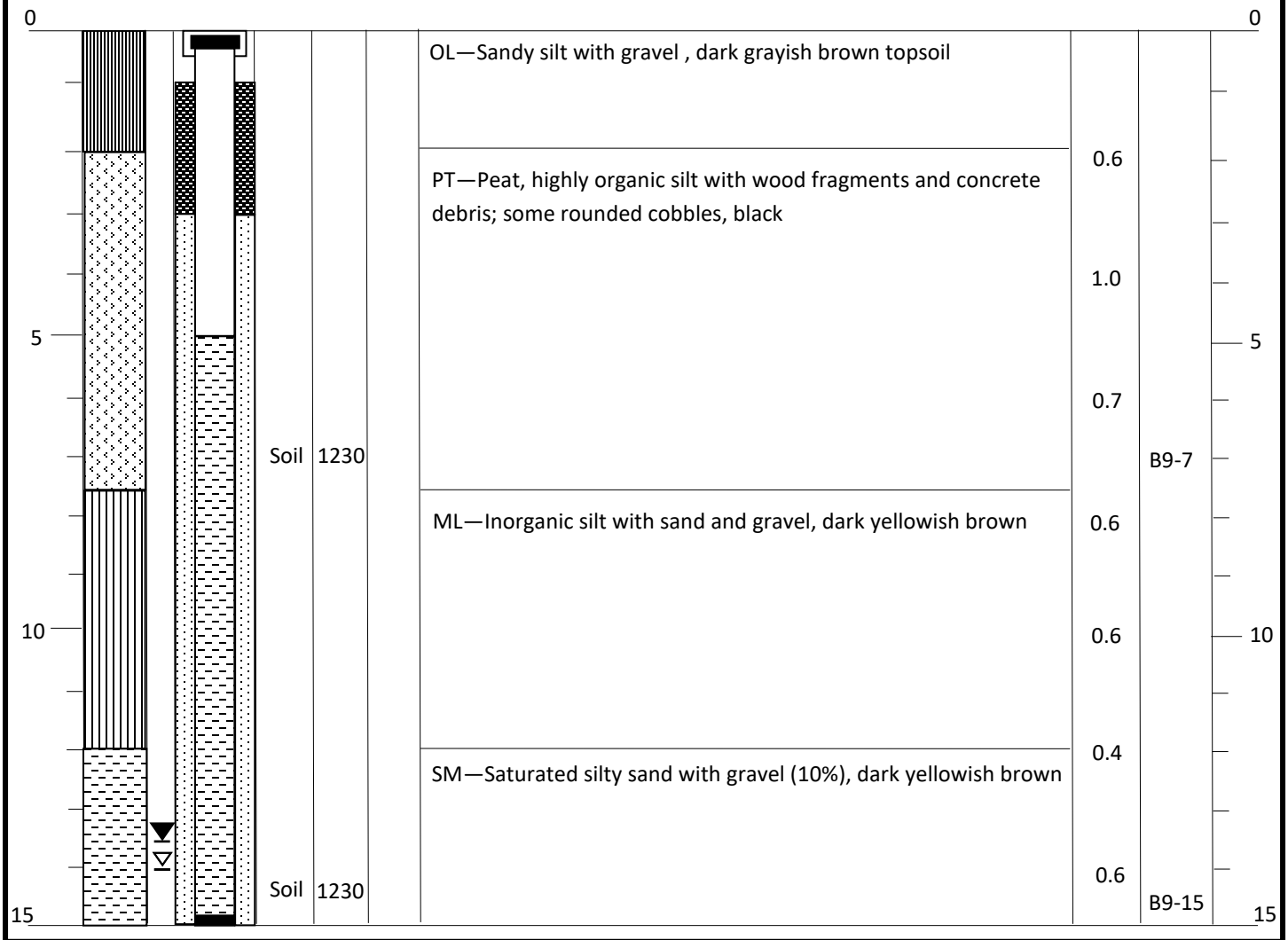


DEPTH (ft)	COLLECT: Sample Type	COLLECT: Time	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Sample ID	DEPTH (ft)
0				OL—Organic silt and sand with gravel and rounded cobbles, dark yellowish brown topsoil	0.3		0
				PT—Peat, highly organic silt with wood fragments and concrete debris; some rounded cobbles, black	0.4		
5	Soil	1030		GM—Sandy, silty gravel, olive	0.3	B8-7	5
				GM—Silty gravel with sand (~30%) and cobbles, olive	0.3		
10				GM—Gravel with sand (20—40%), pale olive	0.2		10
					0.3		
15	Soil	1030			0.2	B8-15	15

NOTES: Groundwater sample MW8-111420 collected 11/14/20 at 1030. Wellhead PID = 0.3 ppm and LEL = 0.0%.

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: B9 Well #: MW9 Page: 1 of 1

Start Date/Time: 11/09/20; 1140	Boring Depth (ft): 15	Well Depth (ft): 15
End Date/Time: 11/09/20; 1220	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): 13.5	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): 14.0	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 261.3	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.066891, -122.936880	Filter Pack: Monterey #2 sand



NOTES: Approximately 1 foot of water was present in MW9 and was declared effectively dry; a groundwater sample could not be collected.

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: 10 Well #: MW10 Page: 1 of 1

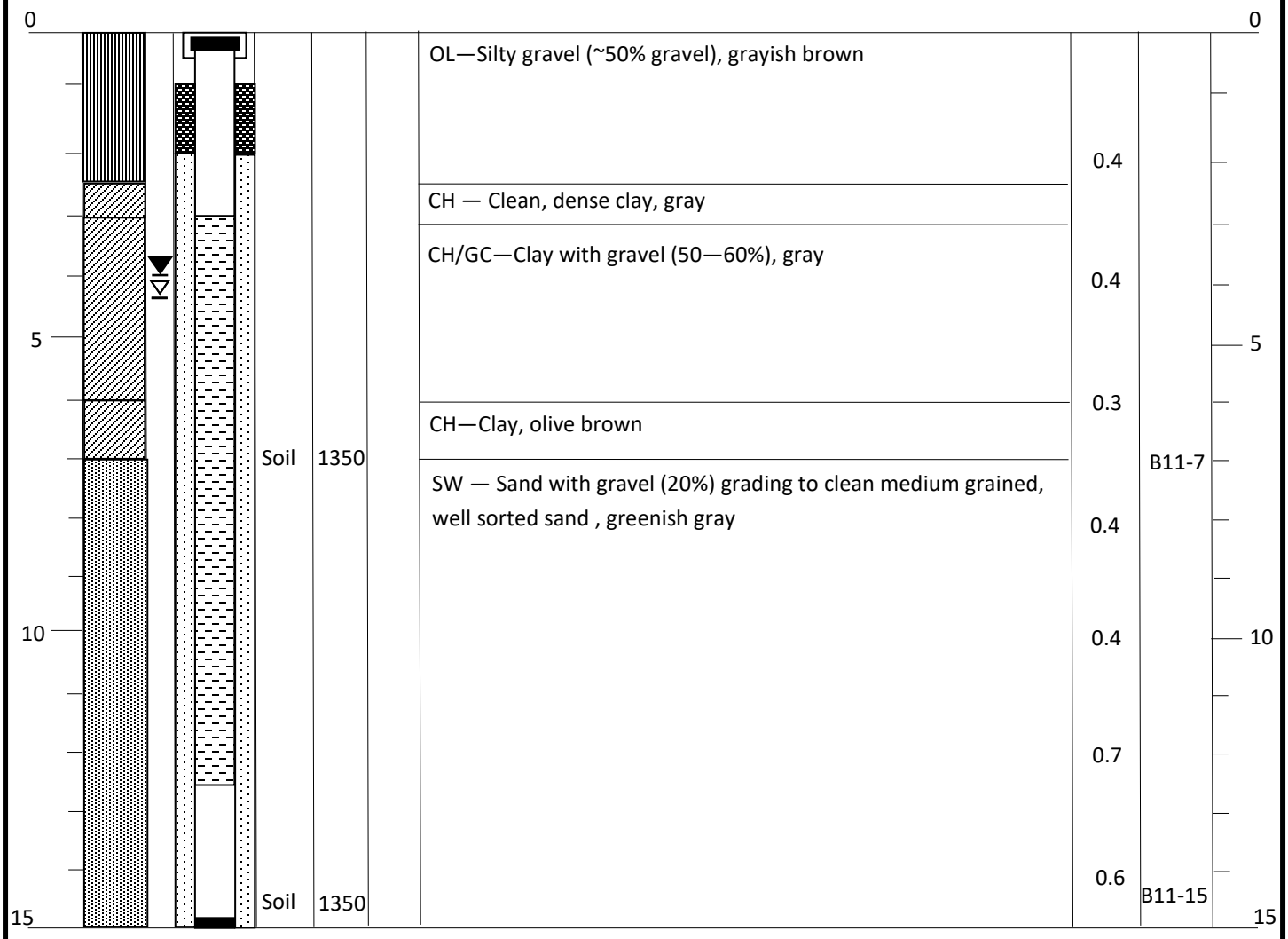
Start Date/Time: 11/09/20; 1240	Boring Depth (ft): 15	Well Depth (ft): 15
End Date/Time: 11/09/20; 1320	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): NA	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): NA	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 249.8	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.067168, -122.937087	Filter Pack: Monterey #2 sand

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Sample ID	DEPTH (ft)
0							OH—Clay with gravel and cobbles (~10—15%), brown			0
							PT—Peat with gravel and cobbles (50%), black	0.5		
								0.8		
5								0.6		5
				Soil	1315		GP/SC—Poorly graded gravels with sands, silts, and clays, brown		B10-7	
								0.4		
10								0.4		10
								0.4		
							SW—Well-graded, medium grained sand with gravel (~5—10%) No free water, light olive gray			
15				Soil	1315			0.4	B10-15	15

NOTES: No water was present in MW10 and was declared dry; a groundwater sample could not be collected.

environmental ENPRO	Client: Green Cove Park Development Project #: 1903-00129-RI Address: 220 Cooper Point Rd NW	**WELL LOG** Boring #: 11 Well #: MW11 Page: 1 of 1

Start Date/Time: 11/09/20; 1340	Boring Depth (ft): 15	Well Depth (ft): 15
End Date/Time: 11/09/20; 1415	Boring Diameter (in): 6	Well Diameter (in): 2
Drilling Company: Cascade Env.	Sampling Method(s): Discrete (5035)	Screen Slot (in): 0.020
Drilling Method: Sonic	DTW During Drilling (ft): 4	Riser Material: PVC
Drilling Equipment: Longyear DB-100	DTW After Drilling (ft): 4.3	Screen Material: PVC
Driller: Rico Rodriguez	Top of Casing Elevation (ft): 223.7	Seal Material(s): Bentonite
Logged By: Ken Beal	Location (X, Y): 47.067653, -122.938828	Filter Pack: Monterey #2 sand



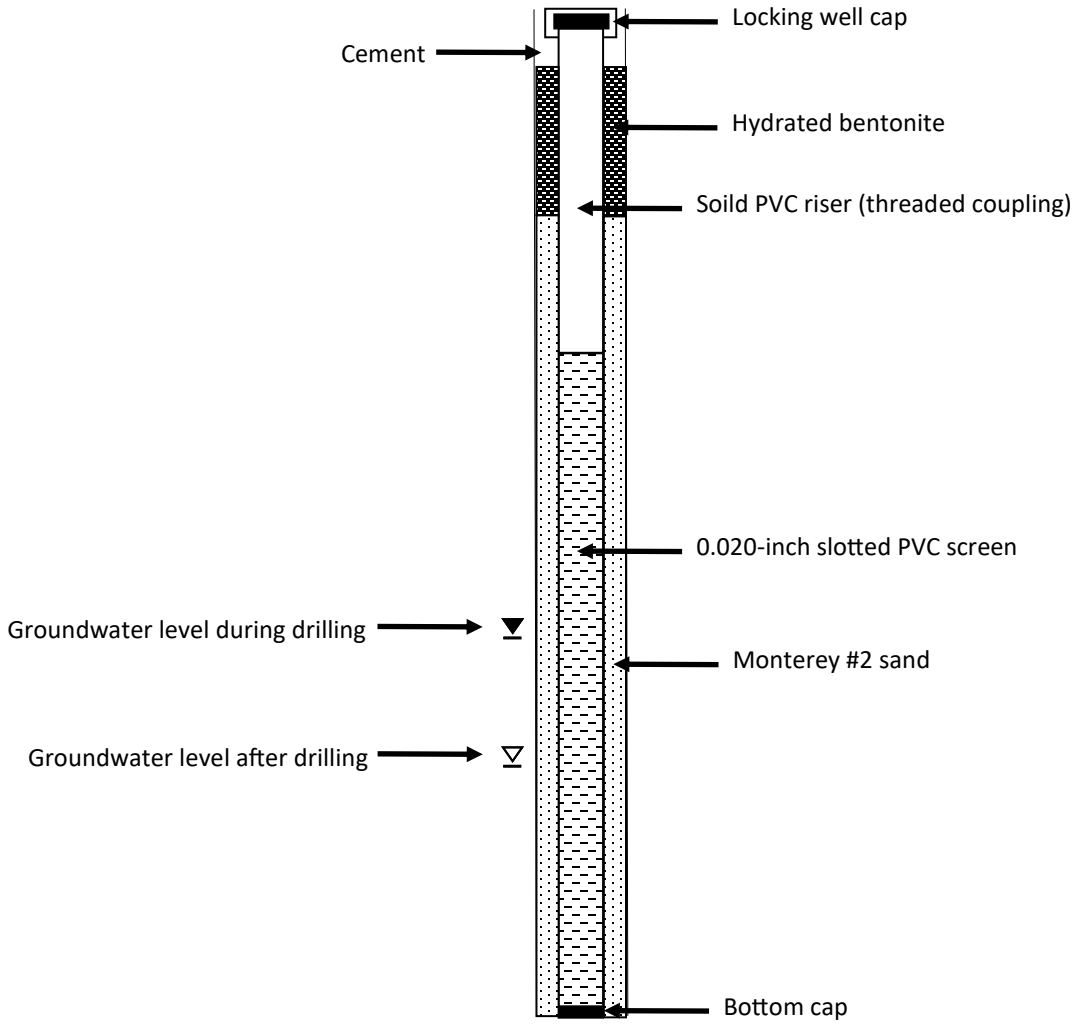
NOTES: Groundwater sample MW11-111420 collected 11/14/20 at 0830. Wellhead PID = 0.3 ppm and LEL = 0.0%.

UNIFIED SOIL CLASSIFICATION SYSTEM—ASTM D2488

GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
GM	Silty gravels, gravel-sand-silt mixtures
SW	Well-graded sands, gravelly sands, little or no fines
SP	Poorly graded sands, gravelly sands, little or no fines
SM	Silty sands, sand-silt mixtures
SC	Clayey sands, sand-clay mixtures

ML	Inorganic silts & very fine sands, silty or clayey sands
CL	Inorganic clays of low to medium plasticity, gravelly clays
OL	Organic silts and organic silty clays of low plasticity
CH	Inorganic clays of high plasticity, fat clays
OH	Organic clays of medium to high plasticity, organic silts
PT	Peat and other highly organic soils

MONITORING WELL DIAGRAM



Appendix D
Analytical Data for All Constituents

Table D-1
Soil Boring Analytical Data– B1 through B3

COPC	B1-7 (mg/kg)	B1-15 (mg/kg)	B2-7 (mg/kg)	B2-7A (mg/kg)	B2-15 (mg/kg)	B2-15A (mg/kg)	B3-7 (mg/kg)	B3-7A (mg/kg)	B3-10 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
TPH (NWTPH-Dx)												
Gasoline range	< 5.5	< 5.5	< 4.9	< 5.9	< 5.3	< 6.5	< 9.8	< 11	21	100	np	np
Diesel range	< 28	< 27	< 28	< 28	< 29	< 30	< 39	120	700	2,000	np	np
Heavy oil range	< 56	< 55	170	97	< 58	< 60	530	960	**4,500**	2,000	np	np
VOCs (EPA 8260D)												
Dichlorodifluoromethane	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	16,000	np
Chloromethane	--	--	< 0.0079	< 0.0080	--	--	< 0.011	< 0.0096	< 0.021	np	np	np
Vinyl chloride	--	--	< 0.0015	< 0.0015	--	--	< 0.0021	< 0.0018	< 0.0039	np	240	0.67
Bromomethane	--	--	< 0.0053	< 0.0054	--	--	< 0.0075	< 0.0064	< 0.014	np	110	np
Chloroethane	--	--	< 0.0053	< 0.0054	--	--	< 0.0075	< 0.0064	< 0.014	np	np	np
Trichlorofluoromethane	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	24,000	np
1,1-Dichloroethene	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	4,000	np
Iodomethane	--	--	< 0.0053	< 0.0054	--	--	< 0.0075	< 0.0064	< 0.014	np	np	np
Methylene chloride	--	--	< 0.0068	< 0.0068	--	--	< 0.0096	< 0.0082	< 0.018	0.02	480	94
trans-1,2-Dichloroethene	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	1,600	np
Methyl t-Butyl Ether	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	0.1	np	560
1,1-Dichloroethane	--	--	< 0.0014	< 0.0014	--	--	< 0.0020	< 0.0017	< 0.0036	np	16,000	180
2,2-Dichloropropane	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	np	np
cis-1,2-Dichloroethene	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	160	np
Bromochloromethane	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	np	np
Chloroform	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	800	32

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
Bold = detected concentration is greater than the PCL

Table D-1 (continued)
Soil Boring Analytical Data– B1 through B3

COPC	B1-7 (mg/kg)	B1-15 (mg/kg)	B2-7 (mg/kg)	B2-7A (mg/kg)	B2-15 (mg/kg)	B2-15A (mg/kg)	B3-7 (mg/kg)	B3-7A (mg/kg)	B3-10 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
VOCs												
1,1,1-Trichloroethane (TCA)	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	2.0	160,000	np
Carbon tetrachloride	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	320	14
1,1-Dichloropropene	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	np	np
Benzene	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.022	**< 0.04**	0.03	320	18
1,2-Dichloroethane (EDC)	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	480	11
Trichloroethene (TCE)	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	0.03	40	12
1,2-Dichloropropane	--	--	< 0.0014	< 0.0014	--	--	< 0.0020	< 0.0017	< 0.0036	np	3,200	27
Dibromoethane	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	np	np
Bromodichloromethane	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	1,600	16
2-Chloroethyl Vinyl Ether	--	--	< 0.0053	< 0.0054	--	--	< 0.0075	< 0.0064	< 0.014	np	np	np
1,3-Dichloropropene (cis)	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	2,400	10
1,3-Dichloropropene (trans)	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	2,400	10
Toluene	<0.055	<0.055	<0.049	<0.059	<0.053	< 0.065	< 0.098	<0.11	<0.20	7.0	6,400	np
1,1,2-Trichloroethane	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	320	18
Tetrachloroethene (PCE)	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	0.05	480	480
1,3-Dichloropropane	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	np	np
Dibromochloromethane	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	1,600	12

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
Bold = practical quantitation limit greater than PCL

Table D-1 (continued)
Soil Boring Analytical Data– B1 through B3

COPC	B1-7 (mg/kg)	B1-15 (mg/kg)	B2-7 (mg/kg)	B2-7A (mg/kg)	B2-15 (mg/kg)	B2-15A (mg/kg)	B3-7 (mg/kg)	B3-7A (mg/kg)	B3-10 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
VOCs												
1,2-Dibromoethane (EDB)	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	0.005	720	0.5
Chlorobenzene	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	1,600	np
1,1,1,2-Tetrachloroethane	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	2,400	38
Ethylbenzene	<0.055	<0.055	<0.049	<0.059	<0.053	< 0.065	<0.098	<0.11	<0.20	6.0	8,000	np
Xylenes (total)	<0.11	<0.11	<0.098	<0.118	<0.106	< 0.13	<0.196	<0.22	<0.04	9.0	16,000	np
Bromoform	--	--	< 0.0053	< 0.0054	--	--	< 0.0075	< 0.0064	< 0.014	np	1,600	130
Bromobenzene	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.091	< 0.20	np	640	np
1,1,2,2-Tetrachloroethane	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.091	< 0.20	np	1,600	5.0
1,2,3-Trichloropropane	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	**< 0.091**	**< 0.20**	np	320	0.0063
2-Chlorotoluene	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.091	< 0.20	np	1,600	np
4-Chlorotoluene	--	--	< 0.0011	< 0.0011	--	--	< 00015	< 0.091	< 0.20	np	1,600*	np
1,3-Dichlorobenzene	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.091	< 0.20	np	np	np
1,4-Dichlorobenzene	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.091	< 0.20	np	5,600	190
1,2-Dichlorobenzene	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.091	< 0.20	np	7,200	np
1,2-Dibromo-3-chloropropane	--	--	< 0.0053	< 0.0054	--	--	< 0.0075	< 0.45	< 1.0	np	16	1.3
1,2,4-Trichlorobenzene	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.091	< 0.20	np	800	34
Hexachlorobutadiene	--	--	< 0.0053	< 0.0054	--	--	< 0.0075	< 0.45	< 1.0	np	80	13
1,2,3-Trichlorobenzene	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.091	< 0.20	np	np	np

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
Bold = practical quantitation limit greater than PCL
* = CUL for 2-Chlorotoluene

Table D-1 (continued)
Soil Boring Analytical Data– B1 through B3

COPC	B1-7 (mg/kg)	B1-15 (mg/kg)	B2-7 (mg/kg)	B2-7A (mg/kg)	B2-15 (mg/kg)	B2-15A (mg/kg)	B3-7 (mg/kg)	B3-7A (mg/kg)	B3-10 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
VOCs												
1,2-Dibromoethane (EDB)	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	0.005	720	0.5
Chlorobenzene	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	1,600	np
1,1,1,2-Tetrachloroethane	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.0013	< 0.0028	np	2,400	38
Ethylbenzene	<0.055	<0.055	<0.049	<0.059	<0.053	< 0.065	<0.098	<0.11	<0.20	6.0	8,000	np
Xylenes (total)	<0.055	<0.055	<0.049	<0.059	<0.053	< 0.065	<0.098	<0.11	<0.020	9.0	16,000	np
Bromoform	--	--	< 0.0053	< 0.0054	--	--	< 0.0075	< 0.0064	< 0.014	np	1,600	130
Bromobenzene	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.091	< 0.20	np	640	np
1,1,2,2-Tetrachloroethane	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.091	< 0.20	np	1,600	5.0
1,2,3-Trichloropropane	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	**< 0.091**	**< 0.20**	np	320	0.0063
2-Chlorotoluene	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.091	< 0.20	np	1,600	np
4-Chlorotoluene	--	--	< 0.0011	< 0.0011	--	--	< 00015	< 0.091	< 0.20	np	1,600*	np
1,3-Dichlorobenzene	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.091	< 0.20	np	np	np
1,4-Dichlorobenzene	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.091	< 0.20	np	5,600	190
1,2-Dichlorobenzene	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.091	< 0.20	np	7,200	np
1,2-Dibromo-3-chloropropane	--	--	< 0.0053	< 0.0054	--	--	< 0.0075	< 0.45	< 1.0	np	16	1.3
1,2,4-Trichlorobenzene	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.091	< 0.20	np	800	34
Hexachlorobutadiene	--	--	< 0.0053	< 0.0054	--	--	< 0.0075	< 0.45	< 1.0	np	80	13
1,2,3-Trichlorobenzene	--	--	< 0.0011	< 0.0011	--	--	< 0.0015	< 0.091	< 0.20	np	np	np

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
Bold = practical quantitation limit greater than PCL
* = CUL for 2-Chlorotoluene

Table D-1 (continued)
Soil Boring Analytical Data for– B1 through B3

COPC	B1-7 (mg/kg)	B1-15 (mg/kg)	B2-7 (mg/kg)	B2-7A (mg/kg)	B2-15 (mg/kg)	B2-15A (mg/kg)	B3-7 (mg/kg)	B3-7A (mg/kg)	B3-10 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
PAHs												
Naphthalene	--	--	< 0.0076	< 0.0074	< 0.0078	< 0.0080	< 0.010	< 0.010	0.083	5.0	1,600	np
2-Methylnaphthalene	--	--	< 0.0076	< 0.0074	< 0.0078	< 0.0080	< 0.010	< 0.010	0.030	np	320	np
1-Methylnaphthalene	--	--	< 0.0076	< 0.0074	< 0.0078	< 0.0080	< 0.010	< 0.010	0.019	np	5,600	34
Acenaphthylene	--	--	< 0.0076	< 0.0074	< 0.0078	< 0.0080	< 0.010	< 0.010	< 0.016	np	np	np
Acenaphthene	--	--	< 0.0076	< 0.0074	< 0.0078	< 0.0080	< 0.010	< 0.010	0.021	np	4,800	np
Fluorene	--	--	< 0.0076	< 0.0074	< 0.0078	< 0.0080	< 0.010	< 0.010	0.021	np	3,200	np
Pentachlorophenol	--	--	--	--	--	--	--	--	--	np	400	2.5
Phenanthrene	--	--	0.013	< 0.0074	< 0.0078	< 0.0080	< 0.010	0.013	0.063	np	np	np
Anthracene	--	--	< 0.0076	< 0.0074	< 0.0078	< 0.0080	< 0.010	< 0.010	<0.016	np	24,000	np
Fluoranthene	--	--	0.013	< 0.0074	< 0.0078	< 0.0080	< 0.010	< 0.010	0.053	np	3,200	np
Pyrene	--	--	0.016	< 0.0074	< 0.0078	< 0.0080	< 0.010	< 0.010	0.053	np	2,400	np
Benzo(a)anthracene	--	--	0.0077	< 0.0074	< 0.0078	< 0.0080	< 0.010	< 0.010	<0.016	np	np	np
Chrysene	--	--	0.0096	< 0.0074	< 0.0078	< 0.0080	< 0.010	0.011	0.027	np	np	np
Benzo(b)fluoranthene	--	--	0.011	< 0.0074	< 0.0078	< 0.0080	0.013	< 0.010	0.022	np	np	np
Benzo(j,k)fluoranthene	--	--	< 0.0076	< 0.0074	< 0.0078	< 0.0080	< 0.010	< 0.010	<0.016	np	np	np
Benzo(a)pyrene	--	--	0.0086	< 0.0074	< 0.0078	< 0.0080	< 0.010	< 0.010	0.018	0.1	24	0.19
Indeno(1,2,3-cd)pyrene	--	--	< 0.0076	< 0.0074	< 0.0078	< 0.0080	< 0.010	< 0.010	<0.016	np	np	np
Dibenzo(a,h)anthracene	--	--	< 0.0076	< 0.0074	< 0.0078	< 0.0080	< 0.010	< 0.010	<0.016	np	np	np
Benzo(g,h,i)perylene	--	--	< 0.0076	< 0.0074	< 0.0078	< 0.0080	< 0.010	< 0.010	<0.016	np	np	np
Total cPAH TEQ	--	--	0.011706	N/A	N/A	N/A	0.00835	0.00761	0.02367	0.1	np	np

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
cPAH = carcinogenic polycyclic aromatic hydrocarbons
TEQ = total toxic equivalent concentration

Table D-1 (continued)
Soil Boring Analytical Data– B1 through B3

COPC	B1-7 (mg/kg)	B1-15 (mg/kg)	B2-7 (mg/kg)	B2-7A (mg/kg)	B2-15 (mg/kg)	B2-15A (mg/kg)	B3-7 (mg/kg)	B3-7A (mg/kg)	B3-10 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
Metals (total)												
Arsenic[1]	--	--	< 11	< 11	< 12	< 12	< 15	< 15	< 25	20	24	0.67
Barium	--	--	56	65	31	36	96	61	140	np	16,000	np
Cadmium	--	--	< 0.57	< 0.56	< 0.58	< 0.60	< 0.77	< 0.77	<1.2	2.0	80	np
Chromium (total)	--	--	19	23	18	18	26	19	30	np	np	np
Chromium III	--	--	19	23	18	18	26	19	30	2,000	120,000	np
Chromium VI	--	--	<1.1	< 1.1	--	--	< 1.5	< 1.5	< 2.5	19	240	np
Copper	--	--	--	--	--	--	--	--	--	np	3,200	np
Lead	--	--	< 5.7	7.0	< 5.8	< 6.0	10	26	100	250	np	np
Mercury	--	--	< 0.28	< 0.28	< 0.29	< 0.30	< 0.38	< 0.38	<0.62	2.0	np	np
Nickel	--	--	--	--	--	--	--	--	--	np	1,600	np
Selenium	--	--	< 11	< 11	< 12	< 12	< 15	< 15	<25	np	400	np
Silver	--	--	< 1.1	< 1.1	< 1.2	< 1.2	< 1.5	< 1.5	<2.5	np	400	np
PCBs												
Aroclor 1016	--	--	< 0.057	< 0.056	--	--	< 0.077	< 0.077	< 0.12	np	5.6	14
Aroclor 1221	--	--	< 0.057	< 0.056	--	--	< 0.077	< 0.077	< 0.12	np	np	np
Aroclor 1232	--	--	< 0.057	< 0.056	--	--	< 0.077	< 0.077	< 0.12	np	np	np
Aroclor 1242	--	--	< 0.057	< 0.056	--	--	< 0.077	< 0.077	< 0.12	np	np	np
Aroclor 1248	--	--	< 0.057	< 0.056	--	--	< 0.077	< 0.077	< 0.12	np	np	np
Aroclor 1254	--	--	< 0.057	< 0.056	--	--	< 0.077	< 0.077	< 0.12	np	1.6	0.5

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
[1] = cleanup level was set at 20 mg/kg based on direct contact using Equation 740-2 and protection of groundwater for drinking water use using the procedures in WAC 173-340-747(4), adjusted for natural background for soil.

Table D-1 (continued)
Soil Boring Analytical Data– B1 through B3

COPC	B1-7 (mg/kg)	B1-15 (mg/kg)	B2-7 (mg/kg)	B2-7A (mg/kg)	B2-15 (mg/kg)	B2-15A (mg/kg)	B3-7 (mg/kg)	B3-7A (mg/kg)	B3-10 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
PCBs												
Aroclor 1260	--	--	< 0.057	< 0.056	--	--	< 0.077	< 0.077	< 0.12	np	np	0.5
PCBs (total)	--	--	<0.399	<0.393	--	--	**<0.539**	**<0.539**	**<0.84**	1.0	np	0.5

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
Bold = practical quantitation limit greater than PCL

Table D-2
Soil Boring Analytical Data– B3 through B7

COPC	B3-15 (mg/kg)	B3-15A (mg/kg)	B4-7 (mg/kg)	B4-15 (mg/kg)	B5-7 (mg/kg)	B5-15 (mg/kg)	B6-7 (mg/kg)	B6-15 (mg/kg)	B7-7 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
TPH												
Gasoline Range	< 5.6	< 4.7	< 6.5	< 7.1	< 5.4	< 6.2	< 7.4	< 5.8	< 14	100	np	np
Diesel (DRO)	< 28	< 28	< 32	< 31	< 27	< 32	< 29	< 28	140	2,000	np	np
Heavy Oil Range	< 56	< 57	< 65	< 63	< 54	< 63	< 59	< 56	1,300	2,000	np	np

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram

Table D-2 (continued)
Soil Boring Analytical Data– B3 through B7

COPC	B3-15 (mg/kg)	B3-15A (mg/kg)	B4-7 (mg/kg)	B4-15 (mg/kg)	B5-7 (mg/kg)	B5-15 (mg/kg)	B6-7 (mg/kg)	B6-15 (mg/kg)	B7-7 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
VOCs												
Dichlorodifluoromethane	--	--	--	--	--	--	--	--	< 0.0019	np	16,000	np
Chloromethane	--	--	--	--	--	--	--	--	< 0.014	np	np	np
Vinyl chloride	--	--	--	--	--	--	--	--	< 0.0027	np	240	0.67
Bromomethane	--	--	--	--	--	--	--	--	< 0.0095	np	110	np
Chloroethane	--	--	--	--	--	--	--	--	< 0.0095	np	np	np
Trichlorofluoromethane	--	--	--	--	--	--	--	--	< 0.0019	np	24,000	np
1,1-Dichloroethene	--	--	--	--	--	--	--	--	< 0.0019	np	4,000	np
Iodomethane	--	--	--	--	--	--	--	--	< 0.0095	np	np	np
Methylene chloride	--	--	--	--	--	--	--	--	< 0.012	0.02	480	94
trans-1,2-Dichloroethene	--	--	--	--	--	--	--	--	< 0.0019	np	1,600	np
Methyl t-Butyl Ether	--	--	--	--	--	--	--	--	< 0.0019	0.1	np	560
1,1-Dichloroethane	--	--	--	--	--	--	--	--	< 0.0025	np	16,000	180
2,2-Dichloropropane	--	--	--	--	--	--	--	--	< 0.0019	np	np	np
cis-1,2-Dichloroethene	--	--	--	--	--	--	--	--	< 0.0019	np	160	np
Bromochloromethane	--	--	--	--	--	--	--	--	< 0.0019	np	np	np
Chloroform	--	--	--	--	--	--	--	--	< 0.0019	np	800	32
1,1,1-Trichloroethane (TCA)	--	--	--	--	--	--	--	--	< 0.0019	2.0	160,000	np
Carbon tetrachloride	--	--	--	--	--	--	--	--	< 0.0019	np	320	14
1,1-Dichloropropene	--	--	--	--	--	--	--	--	< 0.0019	np	np	np

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram

Table D-2 (continued)
Soil Boring Analytical Data– B3 through B7

COPC	B3-15 (mg/kg)	B3-15A (mg/kg)	B4-7 (mg/kg)	B4-15 (mg/kg)	B5-7 (mg/kg)	B5-15 (mg/kg)	B6-7 (mg/kg)	B6-15 (mg/kg)	B7-7 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
VOCs												
Benzene	<0.020	<0.020	<0.020	<0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.029	0.03	320	18
1,2-Dichloroethane (EDC)	--	--	--	--	--	--	--	--	< 0.0019	np	480	11
Trichloroethene (TCE)	--	--	--	--	--	--	--	--	< 0.0019	0.03	40	12
1,2-Dichloropropane	--	--	--	--	--	--	--	--	< 0.0025	np	3,200	27
Dibromoethane	--	--	--	--	--	--	--	--	< 0.0019	np	np	np
Bromodichloromethane	--	--	--	--	--	--	--	--	< 0.0019	np	1,600	16
2-Chloroethyl Vinyl Ether	--	--	--	--	--	--	--	--	< 0.0019	np	np	np
1,3-Dichloropropene (cis)	--	--	--	--	--	--	--	--	< 0.0019	np	2,400	10
1,3-Dichloropropene (trans)	--	--	--	--	--	--	--	--	< 0.0019	np	2,400	10
Toluene	<0.056	<0.047	<0.065	<0.071	< 0.054	< 0.062	< 0.074	< 0.058	< 0.014	7.0	6,400	np
1,1,2-Trichloroethane	--	--	--	--	--	--	--	--	< 0.0019	np	320	18
Tetrachloroethene (PCE)	--	--	--	--	--	--	--	--	< 0.0019	0.05	480	480
1,3-Dichloropropane	--	--	--	--	--	--	--	--	< 0.0019	np	np	np
Dibromochloromethane	--	--	--	--	--	--	--	--	< 0.0019	np	1,600	12
1,2-Dibromoethane (EDB)	--	--	--	--	--	--	--	--	< 0.0019	0.005	720	0.5
Chlorobenzene	--	--	--	--	--	--	--	--	< 0.0019	np	1,600	np
1,1,1,2-Tetrachloroethane	--	--	--	--	--	--	--	--	< 0.0019	np	2,400	38

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram

Table D-2 (continued)
Soil Boring Analytical Data– B3 through B7

COPC	B3-15 (mg/kg)	B3-15A (mg/kg)	B4-7 (mg/kg)	B4-15 (mg/kg)	B5-7 (mg/kg)	B5-15 (mg/kg)	B6-7 (mg/kg)	B6-15 (mg/kg)	B7-7 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
VOCs												
Ethylbenzene	<0.056	<0.047	<0.065	<0.071	< 0.054	< 0.062	< 0.074	< 0.058	< 0.014	6.0	8,000	np
Xylenes (total)	<0.112	<0.094	<0.13	<0.142	< 0.108	< 0.124	< 0.148	< 0.116	< 0.028	9.0	16,000	np
Bromoform	--	--	--	--	--	--	--	--	< 0.0095	np	1,600	130
Bromobenzene	--	--	--	--	--	--	--	--	< 0.13	np	640	np
1,1,2,2-Tetrachloroethane	--	--	--	--	--	--	--	--	< 0.13	np	1,600	5.0
1,2,3-Trichloropropane	--	--	--	--	--	--	--	--	**< 0.13**	np	320	0.0063
2-Chlorotoluene	--	--	--	--	--	--	--	--	< 0.13	np	1,600	np
4-Chlorotoluene	--	--	--	--	--	--	--	--	< 0.13	np	1,600	np
1,3-Dichlorobenzene	--	--	--	--	--	--	--	--	< 0.13	np	np	np
1,4-Dichlorobenzene	--	--	--	--	--	--	--	--	< 0.13	np	5,600	190
1,2-Dichlorobenzene	--	--	--	--	--	--	--	--	< 0.13	np	7,200	np
1,2-Dibromo-3-chloropropane	--	--	--	--	--	--	--	--	< 0.65	np	16	1.3
1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--	< 0.13	np	800	34
Hexachlorobutadiene	--	--	--	--	--	--	--	--	< 0.65	np	80	13
1,2,3-Trichlorobenzene	--	--	--	--	--	--	--	--	< 0.13	np	np	np
PAHs												
Naphthalene	< 0.0075	< 0.0076	< 0.0086	< 0.0083	< 0.0072	< 0.0084	< 0.0078	< 0.0075	0.059	5.0	1,600	np
2-Methylnaphthalene	< 0.0075	< 0.0076	< 0.0086	< 0.0083	< 0.0072	< 0.0084	< 0.0078	< 0.0075	0.034	np	320	np
1-Methylnaphthalene	< 0.0075	< 0.0076	< 0.0086	< 0.0083	< 0.0072	< 0.0084	< 0.0078	< 0.0075	0.018	np	5,600	34

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
Bold = practical quantitation limit greater than PCL

Table D-2 (continued)
Soil Boring Analytical Data– B3 through B7

COPC	B3-15 (mg/kg)	B3-15A (mg/kg)	B4-7 (mg/kg)	B4-15 (mg/kg)	B5-7 (mg/kg)	B5-15 (mg/kg)	B6-7 (mg/kg)	B6-15 (mg/kg)	B7-7 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
PAHs												
Acenaphthylene	< 0.0075	< 0.0076	< 0.0086	< 0.0083	< 0.0072	< 0.0084	< 0.0078	< 0.0075	0.013	np	np	np
Acenaphthene	< 0.0075	< 0.0076	< 0.0086	< 0.0083	< 0.0072	< 0.0084	< 0.0078	< 0.0075	0.067	np	4,800	np
Fluorene	< 0.0075	< 0.0076	< 0.0086	< 0.0083	< 0.0072	< 0.0084	< 0.0078	< 0.0075	0.10	np	3,200	np
Pentachlorophenol	--	--	--	--	--	--	--	--	--	np	400	2.5
Phenanthrene	< 0.0075	< 0.0076	< 0.0086	< 0.0083	< 0.0072	< 0.0084	0.027	< 0.0075	0.18	np	np	np
Anthracene	< 0.0075	< 0.0076	< 0.0086	< 0.0083	< 0.0072	< 0.0084	< 0.0078	< 0.0075	0.11	np	24,000	np
Fluoranthene	< 0.0075	< 0.0076	< 0.0086	< 0.0083	< 0.0072	< 0.0084	0.039	< 0.0075	0.35	np	3,200	np
Pyrene	< 0.0075	< 0.0076	< 0.0086	< 0.0083	< 0.0072	< 0.0084	0.037	< 0.0075	0.35	np	2,400	np
Benzo(a)anthracene	< 0.0075	< 0.0076	< 0.0086	< 0.0083	< 0.0072	< 0.0084	0.015	< 0.0075	0.067	np	np	np
Chrysene	< 0.0075	< 0.0076	< 0.0086	< 0.0083	< 0.0072	< 0.0084	0.021	< 0.0075	0.083	np	np	np
Benzo(b)fluoranthene	< 0.0075	< 0.0076	< 0.0086	< 0.0083	< 0.0072	< 0.0084	0.022	< 0.0075	0.077	np	np	np
Benzo(j,k)fluoranthene	< 0.0075	< 0.0076	< 0.0086	< 0.0083	< 0.0072	< 0.0084	0.0090	< 0.0075	0.020	np	np	np
Benzo(a)pyrene	< 0.0075	< 0.0076	< 0.0086	< 0.0083	< 0.0072	< 0.0084	0.017	< 0.0075	0.041	0.1	24	0.19
Indeno(1,2,3-cd)pyrene	< 0.0075	< 0.0076	< 0.0086	< 0.0083	< 0.0072	< 0.0084	0.012	< 0.0075	0.020	np	np	np
Dibenzo(a,h)anthracene	< 0.0075	< 0.0076	< 0.0086	< 0.0083	< 0.0072	< 0.0084	< 0.0078	< 0.0075	< 0.013	np	np	np
Benzo(g,h,i)perylene	< 0.0075	< 0.0076	< 0.0086	< 0.0083	< 0.0072	< 0.0084	0.012	< 0.0075	0.019	np	np	np
cPAH TEQ	N/A	N/A	N/A	N/A	N/A	N/A	0.0234	N/A	0.06093	0.1	np	np
Metals (total)												
Arsenic[1]	< 11	< 11	< 13	< 13	< 11	< 13	< 12	< 11	< 19	20	24	0.67

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
[1] = cleanup level was set at 20 mg/kg based on direct contact using Equation 740-2 and protection of groundwater for drinking water use using the procedures in WAC 173-340-747(4), adjusted for natural background for soil.
cPAH = carcinogenic polycyclic aromatic hydrocarbons
TEQ = total toxic equivalent concentration

Table D-2 (continued)
Soil Boring Analytical Data– B3 through B7

COPC	B3-15 (mg/kg)	B3-15A (mg/kg)	B4-7 (mg/kg)	B4-15 (mg/kg)	B5-7 (mg/kg)	B5-15 (mg/kg)	B6-7 (mg/kg)	B6-15 (mg/kg)	B7-7 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
Metals (total)												
Barium	20	27	33	36	53	26	64	31	35	np	16,000	np
Cadmium	< 0.56	< 0.57	< 0.65	< 0.63	< 0.54	< 0.63	< 0.59	< 0.56	< 0.95	2.0	80	np
Chromium (total)	7.3	12	20	22	17	18	26	14	19	np	np	np
Chromium III	7.3	12	20	22	17	18	26	14	19	2,000	120,000	np
Chromium VI	--	--	< 1.3	< 1.3	--	--	< 1.2	--	< 1.9	19	240	np
Copper	--	--	--	--	--	--	--	--	--	np	3,200	np
Lead	< 5.6	<5.7	< 6.5	< 6.3	< 5.4	< 6.3	5.9	< 5.6	16	250	np	np
Mercury	< 0.28	< 0.28	< 0.32	< 0.31	< 0.27	< 0.31	< 0.29	< 0.28	1.3	2.0	np	np
Nickel	--	--	--	--	--	--	--	--	--	np	1,600	np
Selenium	< 11	< 11	< 13	< 13	< 11	< 13	< 12	< 11	< 19	np	400	np
Silver	< 1.1	< 1.1	< 1.3	< 1.3	< 1.1	< 1.3	< 1.2	< 1.1	< 1.9	np	400	np
PCBs												
Aroclor 1016	--	--	--	--	--	--	--	--	< 0.095	np	5.6	14
Aroclor 1221	--	--	--	--	--	--	--	--	< 0.095	np	np	np
Aroclor 1232	--	--	--	--	--	--	--	--	< 0.095	np	np	np
Aroclor 1242	--	--	--	--	--	--	--	--	< 0.095	np	np	np
Aroclor 1248	--	--	--	--	--	--	--	--	< 0.095	np	np	np
Aroclor 1254[1]	--	--	--	--	--	--	--	--	< 0.095	np	1.6	0.5
Aroclor 1260[1]	--	--	--	--	--	--	--	--	< 0.095	np	np	0.5
PCBs (total)	--	--	--	--	--	--	--	--	**<0.665**	1.0	np	0.5

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
Bold = practical quantitation limit greater than PCL

Table D-3
Soil Boring Analytical Data– B7 through B11

COPC	B7-15 (mg/kg)	B8-7 (mg/kg)	B8-15 (mg/kg)	B9-7 (mg/kg)	B9-15 (mg/kg)	B10-7 (mg/kg)	B10-15 (mg/kg)	B11-7 (mg/kg)	B11-15 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
TPH												
Gasoline Range	< 4.7	< 4.1	< 4.0	< 7.1	< 5.3	< 6.4	< 5.8	< 5.4	< 6.6	100	np	np
Diesel (DRO)	< 29	< 27	< 29	280	< 30	< 30	< 27	< 29	< 30	2,000	np	np
Heavy Oil Range	< 59	< 53	< 58	1,200	< 60	75	< 54	67	< 59	2,000	np	np
VOCs												
Dichlorodifluoromethane	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	np	16,000	np
Chloromethane	--	--	--	< 0.010	--	< 0.0086	--	< 0.0068	--	np	np	np
Vinyl chloride	--	--	--	< 0.0019	--	< 0.0016	--	< 0.0013	--	np	240	0.67
Bromomethane	--	--	--	< 0.0067	--	< 0.0058	--	< 0.0045	--	np	110	np
Chloroethane	--	--	--	< 0.0067	--	< 0.0058	--	< 0.0045	--	np	np	np
Trichlorofluoromethane	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	np	24,000	np
1,1-Dichloroethene	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	np	4,000	np
Iodomethane	--	--	--	< 0.0067	--	< 0.0058	--	< 0.0045	--	np	np	np
Methylene chloride	--	--	--	< 0.0085	--	< 0.0074	--	< 0.0058	--	0.02	480	94
trans-1,2-Dichloroethene	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	np	1,600	np
Methyl t-Butyl Ether	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	0.1	np	560
1,1-Dichloroethane	--	--	--	< 0.0017	--	< 0.0015	--	< 0.0012	--	np	16,000	180
2,2-Dichloropropane	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	np	np	np
cis-1,2-Dichloroethene	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	np	160	np
Bromochloromethane	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	np	np	np
Chloroform	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	np	800	32

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram

Table D-3 (continued)
Soil Boring Analytical Data– B7 through B11

COPC	B7-15 (mg/kg)	B8-7 (mg/kg)	B8-15 (mg/kg)	B9-7 (mg/kg)	B9-15 (mg/kg)	B10-7 (mg/kg)	B10-15 (mg/kg)	B11-7 (mg/kg)	B11-15 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
VOCs												
1,1,1-Trichloroethane (TCA)	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	2.0	160,000	np
Carbon tetrachloride	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	np	320	14
1,1-Dichloropropene	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	np	np	np
Benzene	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	0.03	320	18
1,2-Dichloroethane (EDC)	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	np	480	11
Trichloroethene (TCE)	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	0.03	40	12
1,2-Dichloropropane	--	--	--	< 0.0017	--	< 0.0015	--	< 0.0012	--	np	3,200	27
Dibromoethane	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	np	np	np
Bromodichloromethane	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	np	1,600	16
2-Chloroethyl Vinyl Ether	--	--	--	< 0.0067	--	< 0.0058	--	< 0.0045	--	np	np	np
1,3-Dichloropropene (cis)	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	np	2,400	10
1,3-Dichloropropene (trans)	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	np	2,400	10
Toluene	< 0.047	< 0.041	< 0.040	< 0.071	< 0.053	< 0.064	< 0.058	< 0.054	< 0.066	7.0	6,400	np
1,1,2-Trichloroethane	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	np	320	18
Tetrachloroethene (PCE)	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	0.05	480	480
1,3-Dichloropropane	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	np	np	np
Dibromochloromethane	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	np	1,600	12

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram

Table D-3 (continued)
Soil Boring Analytical Data– B7 through B11

COPC	B7-15 (mg/kg)	B8-7 (mg/kg)	B8-15 (mg/kg)	B9-7 (mg/kg)	B9-15 (mg/kg)	B10-7 (mg/kg)	B10-15 (mg/kg)	B11-7 (mg/kg)	B11-15 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
VOCs												
1,2-Dibromoethane (EDB)	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	0.005	720	0.5
Chlorobenzene	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	np	1,600	np
1,1,1,2-Tetrachloroethane	--	--	--	< 0.0013	--	< 0.0012	--	< 0.00091	--	np	2,400	38
Ethylbenzene	< 0.047	<0.041	<0.040	<0.071	<0.053	<0.064	<0.058	<0.054	<0.066	6.0	8,000	np
Xylenes (total)	< 0.094	<0.082	<0.080	<0.142	<0.106	<0..128	<0.116	<0.108	<0.132	9.0	16,000	np
Bromoform	--	--	--	< 0.0067	--	< 0.0058	--	< 0.0045	--	np	1,600	130
Bromobenzene	--	--	--	< 0.070	--	< 0.0012	--	< 0.00091	--	np	640	np
1,1,2,2-Tetrachloroethane	--	--	--	< 0.070	--	< 0.0012	--	< 0.00091	--	np	1,600	5.0
1,2,3-Trichloropropane	--	--	--	**< 0.070**	--	< 0.0012	--	< 0.00091	--	np	320	0.0063
2-Chlorotoluene	--	--	--	< 0.070	--	< 0.0012	--	< 0.00091	--	np	1,600	np
4-Chlorotoluene	--	--	--	< 0.070	--	< 0.0012	--	< 0.00091	--	np	1,600	np
1,3-Dichlorobenzene	--	--	--	< 0.070	--	< 0.0012	--	< 0.00091	--	np	np	np
1,4-Dichlorobenzene	--	--	--	< 0.070	--	< 0.0012	--	< 0.00091	--	np	5,600	190
1,2-Dichlorobenzene	--	--	--	< 0.070	--	< 0.0012	--	< 0.00091	--	np	7,200	np
1,2-Dibromo-3-chloropropane	--	--	--	< 0.35	--	< 0.0058	--	< 0.0045	--	np	16	1.3
1,2,4-Trichlorobenzene	--	--	--	< 0.070	--	< 0.0012	--	< 0.00091	--	np	800	34
Hexachlorobutadiene	--	--	--	< 0.35	--	< 0.0058	--	< 0.0045	--	np	80	13
1,2,3-Trichlorobenzene	--	--	--	< 0.070	--	< 0.0012	--	< 0.00091	--	np	np	np

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
Bold = practical quantitation limit greater than PCL

Table D-3 (continued)
Soil Boring Analytical Data– B7 through B11

COPC	B7-15 (mg/kg)	B8-7 (mg/kg)	B8-15 (mg/kg)	B9-7 (mg/kg)	B9-15 (mg/kg)	B10-7 (mg/kg)	B10-15 (mg/kg)	B11-7 (mg/kg)	B11-15 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
PAHs												
Naphthalene	< 0.0078	< 0.0071	< 0.0077	< 0.0085	< 0.0080	< 0.0081	< 0.0072	< 0.0076	< 0.0079	5.0	1,600	np
2-Methylnaphthalene	< 0.0078	< 0.0071	< 0.0077	< 0.0085	< 0.0080	< 0.0081	< 0.0072	< 0.0076	< 0.0079	np	320	np
1-Methylnaphthalene	< 0.0078	< 0.0071	< 0.0077	< 0.0085	< 0.0080	< 0.0081	< 0.0072	< 0.0076	< 0.0079	np	5,600	34
Acenaphthylene	< 0.0078	< 0.0071	< 0.0077	< 0.0085	< 0.0080	< 0.0081	< 0.0072	< 0.0076	< 0.0079	np	np	np
Acenaphthene	< 0.0078	< 0.0071	< 0.0077	< 0.0085	< 0.0080	< 0.0081	< 0.0072	< 0.0076	< 0.0079	np	4,800	np
Fluorene	< 0.0078	< 0.0071	< 0.0077	< 0.0085	< 0.0080	< 0.0081	< 0.0072	< 0.0076	< 0.0079	np	3,200	np
Pentachlorophenol	--	--	--	--	--	--	--	< 0.19	< 0.20	np	400	2.5
Phenanthrene	< 0.0078	< 0.0071	< 0.0077	0.014	< 0.0080	< 0.0081	< 0.0072	< 0.0076	< 0.0079	np	np	np
Anthracene	< 0.0078	< 0.0071	< 0.0077	< 0.0085	< 0.0080	< 0.0081	< 0.0072	< 0.0076	< 0.0079	np	24,000	np
Fluoranthene	< 0.0078	< 0.0071	< 0.0077	< 0.0085	< 0.0080	< 0.0081	< 0.0072	< 0.0076	< 0.0079	np	3,200	np
Pyrene	< 0.0078	< 0.0071	< 0.0077	0.034	< 0.0080	< 0.0081	< 0.0072	< 0.0076	< 0.0079	np	2,400	np
Benzo(a)anthracene	< 0.0078	< 0.0071	< 0.0077	< 0.0085	< 0.0080	< 0.0081	< 0.0072	< 0.0076	< 0.0079	np	np	np
Chrysene	< 0.0078	< 0.0071	< 0.0077	< 0.0085	< 0.0080	< 0.0081	< 0.0072	< 0.0076	< 0.0079	np	np	np
Benzo(b)fluoranthene	< 0.0078	< 0.0071	< 0.0077	< 0.0085	< 0.0080	< 0.0081	< 0.0072	< 0.0076	< 0.0079	np	np	np
Benzo(j,k)fluoranthene	< 0.0078	< 0.0071	< 0.0077	< 0.0085	< 0.0080	< 0.0081	< 0.0072	< 0.0076	< 0.0079	np	np	np
Benzo(a)pyrene	< 0.0078	< 0.0071	< 0.0077	< 0.0085	< 0.0080	< 0.0081	< 0.0072	< 0.0076	< 0.0079	0.1	24	0.19
Indeno(1,2,3-cd)pyrene	< 0.0078	< 0.0071	< 0.0077	< 0.0085	< 0.0080	< 0.0081	< 0.0072	< 0.0076	< 0.0079	np	np	np
Dibenzo(a,h)anthracene	< 0.0078	< 0.0071	< 0.0077	< 0.0085	< 0.0080	< 0.0081	< 0.0072	< 0.0076	< 0.0079	np	np	np
Benzo(g,h,i)perylene	< 0.0078	< 0.0071	< 0.0077	< 0.0085	< 0.0080	< 0.0081	< 0.0072	< 0.0076	< 0.0079	np	np	np
cPAH TEQ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.1	np	np

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
cPAH = carcinogenic polycyclic aromatic hydrocarbons
TEQ = total toxic equivalent concentration

Table D-3 (continued)
Soil Boring Analytical Data– B7 through B11

COPC	B7-15 (mg/kg)	B8-7 (mg/kg)	B8-15 (mg/kg)	B9-7 (mg/kg)	B9-15 (mg/kg)	B10-7 (mg/kg)	B10-15 (mg/kg)	B11-7 (mg/kg)	B11-15 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
Metals (total)												
Arsenic[1]	< 12	<11	<12	< 13	< 12	< 12	< 11	< 11	< 12	20	24	0.67
Barium	31	35	28	63	74	67	58	58	36	np	16,000	np
Cadmium	< 0.59	< 0.53	< 0.58	< 0.64	< 0.60	< 0.61	< 0.54	< 0.57	< 0.59	2.0	80	np
Chromium (total)	19	14	13	16	24	19	14	23	22	np	np	np
Chromium III	19	14	13	16	24	19	14	23	22	2,000	120,000	np
Chromium VI	< 1.2	--	--	--	< 1.2	< 1.2	--	< 1.1	< 1.2	19	240	np
Copper	--	--	--	--	--	--	--	19	9.2	np	3,200	np
Lead	< 5.9	< 5.3	< 5.8	6.5	< 6.0	< 6.1	< 5.4	< 5.7	< 5.9	250	np	np
Mercury	< 0.29	< 0.27	< 0.29	< 0.32	< 0.30	< 0.30	< 0.27	< 0.29	< 0.30	2.0	np	np
Nickel	--	--	--	--	--	--	--	--	--	np	1,600	np
Selenium	< 12	< 11	< 12	< 13	< 12	< 12	< 11	< 11	< 12	np	400	np
Silver	< 1.2	< 1.1	< 1.2	< 1.3	< 1.2	< 1.2	< 1.1	< 1.1	< 1.2	np	400	np
PCBs												
Aroclor 1016	--	--	--	< 0.064	--	< 0.061	--	< 0.057	--	np	5.6	14
Aroclor 1221	--	--	--	< 0.064	--	< 0.061	--	< 0.057	--	np	np	np
Aroclor 1232	--	--	--	< 0.064	--	< 0.061	--	< 0.057	--	np	np	np
Aroclor 1242	--	--	--	< 0.064	--	< 0.061	--	< 0.057	--	np	np	np
Aroclor 1248	--	--	--	< 0.064	--	< 0.061	--	< 0.057	--	np	np	np
Aroclor 1254	--	--	--	< 0.064	--	< 0.061	--	< 0.057	--	np	1.6	0.5
Aroclor 1260	--	--	--	< 0.064	--	< 0.061	--	< 0.057	--	np	np	0.5

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
[1] =cleanup level was set at 20 mg/kg based on direct contact using Equation 740-2 and protection of groundwater for drinking water use using the procedures in WAC 173-340-747(4), adjusted for natural background for soil.

Table D-3 (continued)
Soil Boring Analytical Data– B7 through B11

COPC	B7-15 (mg/kg)	B8-7 (mg/kg)	B8-15 (mg/kg)	B9-7 (mg/kg)	B9-15 (mg/kg)	B10-7 (mg/kg)	B10-15 (mg/kg)	B11-7 (mg/kg)	B11-15 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
PCBs												
PCBs (total)	--	--	--	<0.448	--	<0.427	--	0.399	--	1.0	np	0.5

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram

Table D-4
Surface Soil Analytical Data– SS1 through SS8

COPC	SS1 (mg/kg)	SS2 (mg/kg)	SS2A (mg/kg)	SS3 (mg/kg)	SS4 (mg/kg)	SS5 (mg/kg)	SS6 (mg/kg)	SS7 (mg/kg)	SS8 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
TPH												
Gasoline (GRO)	< 6.8	< 5.1	< 4.5	< 5.5	< 3.9	< 4.4	< 4.6	< 12	< 6.1	100	np	np
Diesel (DRO)	150	< 31	< 29	< 30	< 28	< 28	< 31	< 43	< 34	2,000	np	np

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram

Table D-4 (continued)
Surface Soil Analytical Data– SS1 through SS8

COPC	SS1 (mg/kg)	SS2 (mg/kg)	SS2A (mg/kg)	SS3 (mg/kg)	SS4 (mg/kg)	SS5 (mg/kg)	SS6 (mg/kg)	SS7 (mg/kg)	SS8 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
TPH												
Heavy Oil Range	1,800	< 63	< 57	130	77	80	73	190	< 69	2,000	np	np
VOCs												
Dichlorodifluoromethane	< 0.0024	--	--	< 0.0019	< 0.0021	< 0.0018	< 0.0022	< 0.0028	--	np	16,000	np
Chloromethane	< 0.010	--	--	< 0.0081	< 0.0089	< 0.0078	< 0.0095	< 0.012	--	np	np	np
Vinyl chloride	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	240	0.67
Bromomethane	< 0.0067	--	--	< 0.0052	< 0.0058	< 0.0051	< 0.0062	< 0.0079	--	np	110	np
Chloroethane	< 0.0067	--	--	< 0.0052	< 0.0058	< 0.0051	< 0.0062	< 0.0079	--	np	np	np
Trichlorofluoromethane	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	24,000	np
1,1-Dichloroethene	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	4,000	np
Iodomethane	< 0.0067	--	--	< 0.0052	< 0.0058	< 0.0051	< 0.0062	< 0.0079	--	np	np	np
Methylene chloride	< 0.0067	--	--	< 0.0052	< 0.0058	< 0.0051	< 0.0062	< 0.0079	--	0.02	480	94
trans-1,2-Dichloroethene	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	1,600	np
Methyl t-Butyl Ether	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	0.1	np	560
1,1-Dichloroethane	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	16,000	180
2,2-Dichloropane	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	np	np
cis-1,2-Dichloroethene	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	160	np
Bromochloromethane	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	np	np
Chloroform	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	800	32
1,1,1-Trichloroethane (TCA)	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	2.0	160,000	np

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram

Table D-4 (continued)
Surface Soil Analytical Data– SS1 through SS8

COPC	SS1 (mg/kg)	SS2 (mg/kg)	SS2A (mg/kg)	SS3 (mg/kg)	SS4 (mg/kg)	SS5 (mg/kg)	SS6 (mg/kg)	SS7 (mg/kg)	SS8 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
VOCs												
Carbon tetrachloride	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	320	14
Benzene	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.024	< 0.02	0.03	320	18
1,1-Dichloropropene	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	np	np
1,2-Dichloroethane (EDC)	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	480	11
Trichloroethene (TCE)	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	0.03	40	12
1,2-Dichloropropane	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	3,200	27
Dibromoethane	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	np	np
Bromodichloromethane	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	1,600	16
2-Chloroethyl Vinyl Ether	< 0.0067	--	--	< 0.0052	< 0.0058	< 0.0051	< 0.0062	< 0.0079	--	np	np	np
1,3-Dichloropropene (cis)	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	2,400	10
Toluene	< 0.068	< 0.051	< 0.045	< 0.055	< 0.039	< 0.044	< 0.046	< 0.12	< 0.061	7.0	6,400	np
1,3-Dichloropropene (trans)	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	2,400	10
1,1,2-Trichloroethane	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	320	18
Tetrachloroethene (PCE)	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	0.05	480	480
1,3-Dichloropropane	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	np	np
Dibromochloromethane	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	1,600	12
1,2-Dibromoethane (EDB)	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	0.005	720	0.5
Chlorobenzene	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	1,600	np
1,1,1,2-Tetrachloroethane	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.0016	--	np	2,400	38

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram

Table D-4 (continued)
Surface Soil Analytical Data– SS1 through SS8

COPC	SS1 (mg/kg)	SS2 (mg/kg)	SS2A (mg/kg)	SS3 (mg/kg)	SS4 (mg/kg)	SS5 (mg/kg)	SS6 (mg/kg)	SS7 (mg/kg)	SS8 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
VOCs												
Ethylbenzene	< 0.068	< 0.051	< 0.045	< 0.055	< 0.039	< 0.044	< 0.046	< 0.12	< 0.061	6.0	8,000	np
Xylenes (total)	< 0.136	< 0.102	< 0.090	< 0.110	< 0.078	< 0.088	< 0.092	< 0.24	< 0.122	9.0	16,000	np
Bromoform	< 0.0067	--	--	< 0.0052	< 0.0058	< 0.0051	< 0.0062	< 0.0079	--	np	1,600	130
Bromobenzene	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.12	--	np	640	np
1,1,2,2-Tetrachloroethane	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.12	--	np	1,600	5.0
1,2,3-Trichloropropane	< 0.0013	--	--	< 0.0010	< 0.0058	< 0.0010	< 0.0012	**< 0.12**	--	np	320	0.0063
2-Chlorotoluene	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.12	--	np	1,600	np
4-Chlorotoluene	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.12	--	np	1,600	np
1,3-Dichlorobenzene	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.12	--	np	np	np
1,4-Dichlorobenzene	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.12	--	np	5,600	190
1,2-Dichlorobenzene	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.12	--	np	7,200	np
1,2-Dibromo-3-chloropropane	< 0.0067	--	--	< 0.0052	< 0.0058	< 0.0051	< 0.0062	< 0.60	--	np	16	1.3
1,2,4-Trichlorobenzene	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.12	--	np	800	34
Hexachlorobutadiene	< 0.0067	--	--	< 0.0052	< 0.0058	< 0.0051	< 0.0062	< 0.60	--	np	80	13
1,2,3-Trichlorobenzene	< 0.0013	--	--	< 0.0010	< 0.0012	< 0.0010	< 0.0012	< 0.12	--	np	np	np
SVOCs												
Naphthalene	--	--	--	--	--	--	--	--	--	5.0	1,600	np
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	np	320	np

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
Bold = practical quantitation limit greater than PCL

Table D-4 (continued)
Surface Soil Analytical Data– SS1 through SS8

COPC	SS1 (mg/kg)	SS2 (mg/kg)	SS2A (mg/kg)	SS3 (mg/kg)	SS4 (mg/kg)	SS5 (mg/kg)	SS6 (mg/kg)	SS7 (mg/kg)	SS8 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
SVOCs												
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	np	5,600	34
Acenaphthylene	--	--	--	--	--	--	--	--	--	np	np	np
Acenaphthene	--	--	--	--	--	--	--	--	--	np	4,800	np
Fluorene	--	--	--	--	--	--	--	--	--	np	3,200	np
Pentachlorophenol	--	--	--	--	--	--	--	--	--	np	400	2.5
Phenanthrene	--	--	--	--	--	--	--	--	--	np	np	np
Anthracene	--	--	--	--	--	--	--	--	--	np	24,000	np
Fluoranthene	--	--	--	--	--	--	--	--	--	np	3,200	np
Pyrene	--	--	--	--	--	--	--	--	--	np	2,400	np
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	np	np	np
Chrysene	--	--	--	--	--	--	--	--	--	np	np	np
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	np	np	np
Benzo(j,k)fluoranthene	--	--	--	--	--	--	--	--	--	np	np	np
Benzo(a)pyrene	--	--	--	--	--	--	--	--	--	0.1	24	0.19
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	np	np	np
Dibenzo(a,h)anthracene	--	--	--	--	--	--	--	--	--	np	np	np
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	np	np	np

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram

Table D-4 (continued)
Surface Soil Analytical Data– SS1 through SS8

COPC	SS1 (mg/kg)	SS2 (mg/kg)	SS2A (mg/kg)	SS3 (mg/kg)	SS4 (mg/kg)	SS5 (mg/kg)	SS6 (mg/kg)	SS7 (mg/kg)	SS8 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
PAHs												
Naphthalene	0.010	--	--	0.081	< 0.0075	< 0.0075	0.015	< 0.011	--	5.0	1,600	np
2-Methylnaphthalene	< 0.0080	--	--	0.044	< 0.0075	< 0.0075	< 0.0082	< 0.011	--	np	320	np
1-Methylnaphthalene	< 0.0080	--	--	< 0.016	< 0.0075	< 0.0075	< 0.0082	< 0.011	--	np	5,600	34
Acenaphthylene	< 0.0080	--	--	0.045	0.017	< 0.0075	< 0.0082	< 0.011	--	np	np	np
Acenaphthene	< 0.0080	--	--	< 0.016	< 0.0075	< 0.0075	< 0.0082	< 0.011	--	np	4,800	np
Fluorene	< 0.0080	--	--	< 0.016	< 0.0075	< 0.0075	< 0.0082	< 0.011	--	np	3,200	np
Phenanthrene	0.013	--	--	0.10	0.037	0.011	0.053	0.016	--	np	np	np
Anthracene	< 0.0080	--	--	0.056	0.014	< 0.0075	0.011	0.013	--	np	24,000	np
Fluoranthene	0.014	--	--	0.17	0.066	0.012	0.077	0.043	--	np	3,200	np
Pyrene	0.015	--	--	0.17	0.090	0.014	0.081	0.042	--	np	2,400	np
Benzo(a)anthracene	< 0.0080	--	--	0.074	0.037	< 0.0075	0.044	0.019	--	np	np	np
Chrysene	0.015	--	--	0.081	0.044	0.0083	0.049	0.042	--	np	np	np
Benzo(b)fluoranthene	0.014	--	--	0.10	0.044	0.012	0.071	0.033	--	np	np	np
Benzo(j,k)fluoranthene	< 0.0080	--	--	0.031	0.016	< 0.0075	0.019	< 0.011	--	np	np	np
Benzo(a)pyrene	0.0093	--	--	0.089	0.046	0.0084	0.050	0.016	--	0.1	24	0.19
Indeno(1,2,3-cd)pyrene	< 0.0080	--	--	0.067	0.028	< 0.0075	0.038	0.013	--	np	np	np
Dibenzo(a,h)anthracene	< 0.0080	--	--	< 0.016	< 0.0075	< 0.0075	< 0.0082	< 0.011	--	np	np	np
Benzo(g,h,i)perylene	< 0.0080	--	--	0.074	0.028	< 0.0075	0.037	< 0.011	--	np	np	np
cPAH TEQ	0.01245	--	--	**0.11781**	0.059315	0.011183	0.0681	0.02402	--	0.1	np	np

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
Bold = detected concentration is greater than the PCL
cPAH = carcinogenic polycyclic aromatic hydrocarbons
TEQ = total toxic equivalent concentration

Table D-4 (continued)
Surface Soil Analytical Data– SS1 through SS8

COPC	SS1 (mg/kg)	SS2 (mg/kg)	SS2A (mg/kg)	SS3 (mg/kg)	SS4 (mg/kg)	SS5 (mg/kg)	SS6 (mg/kg)	SS7 (mg/kg)	SS8 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
Metals (total)												
Arsenic[1]	--	--	--	15	< 11	< 11	< 12	< 17	< 14	20	24	0.67
Barium	--	--	--	84	60	44	63	110	85	np	16,000	np
Cadmium	--	--	--	0.62	< 0.56	< 0.56	0.84	< 0.85	< 0.69	2.0	80	np
Chromium (total)[2]	--	--	--	31	21	16	21	34	24	np	np	np
Copper	--	--	--	--	--	--	--	--	--	np	3,200	np
Lead	17	--	--	130	18	< 5.6	16	15	9.0	250	np	np
TCLP Lead	--	--	--	< 0.20	--	--	--	--	--			
Mercury	--	--	--	< 0.30	< 0.28	< 0.28	< 0.31	< 0.42	< 0.34	2.0	np	np
Selenium	--	--	--	< 12	< 11	< 11	< 12	< 17	< 14	np	400	np
Silver	--	--	--	< 1.2	< 1.1	< 1.1	< 1.2	< 1.7	< 1.4	np	400	np
PCBs												
Aroclor 1016	< 0.060	--	--	< 0.059	< 0.056	< 0.056	< 0.061	< 0.085	--	np	5.6	14
Aroclor 1221	< 0.060	--	--	< 0.059	< 0.056	< 0.056	< 0.061	< 0.085	--	np	np	np
Aroclor 1232	< 0.060	--	--	< 0.059	< 0.056	< 0.056	< 0.061	< 0.085	--	np	np	np
Aroclor 1242	< 0.060	--	--	< 0.059	< 0.056	< 0.056	< 0.061	< 0.085	--	np	np	np
Aroclor 1248	< 0.060	--	--	< 0.059	< 0.056	< 0.056	< 0.061	< 0.085	--	np	np	np
Aroclor 1254	< 0.060	--	--	< 0.059	< 0.056	< 0.056	< 0.061	< 0.085	--	np	1.6	0.5
Aroclor 1260	< 0.060	--	--	< 0.059	< 0.056	< 0.056	< 0.061	< 0.085	--	np	np	0.5
PCBs (total)	<0.42	--	--	<0.413	<0.392	<0.392	<0.427	**<0.595**	--	1.0	np	0.5

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
[1] = exceeds Soil Method B Cancer. However, cleanup level was set at 20 mg/kg based on direct contact using Equation 740-2 and protection of groundwater for drinking water use using the procedures in WAC 173-340-747(4), adjusted for natural background for soil
[2] = cleanup level set at 2,000 mg/kg (CUL for chromium III), assuming that the measured concentration of total chromium is the concentration of chromium III

Table D-5
Surface Soil Analytical Data– SS9 through SS17

COPC	SS9 (mg/kg)	SS10 (mg/kg)	SS11 (mg/kg)	SS12 (mg/kg)	SS13 (mg/kg)	SS14 (mg/kg)	SS15 (mg/kg)	SS16 (mg/kg)	SS17 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
TPH												
Gasoline (GRO)	< 4.0	< 7.8	< 12	< 9.9	< 4.9	< 6.0	< 8.1	< 7.1	< 5.0	100	np	np
Diesel (DRO)	< 28	< 36	65	< 38	< 31	< 30	< 32	< 30	< 29	2,000	np	np
Heavy Oil Range	< 57	170	650	130	< 61	69	95	< 60	< 57	2,000	np	np
VOCs												
Dichlorodifluoromethane	--	< 0.0019	< 0.0031	< 0.0017	--	< 0.00091	--	--	--	np	16,000	np
Chloromethane	--	< 0.0083	< 0.013	< 0.0072	--	< 0.0039	--	--	--	np	np	np
Vinyl chloride	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	240	0.67
Bromomethane	--	< 0.0054	< 0.0085	< 0.0047	--	< 0.0025	--	--	--	np	110	np
Chloroethane	--	< 0.0054	< 0.0085	< 0.0047	--	< 0.0025	--	--	--	np	np	np
Trichlorofluoromethane	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	24,000	np
1,1-Dichloroethene	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	4,000	np
Iodomethane	--	< 0.0054	< 0.0085	< 0.0047	--	< 0.0025	--	--	--	np	np	np
Methylene chloride	--	< 0.0054	< 0.0085	< 0.0047	--	< 0.0025	--	--	--	0.02	480	94
trans-1,2-Dichloroethene	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	1,600	np
Methyl t-Butyl Ether	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	0.1	np	560
1,1-Dichloroethane	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	16,000	180
2,2-Dichloropane	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	np	np
cis-1,2-Dichloroethene	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	160	np
Bromochloromethane	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	np	np

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
Bold = practical quantitation limit greater than PCL
Bold = detected concentration is greater than the PCL

Table D-5 (continued)
Surface Soil Analytical Data– SS9 through SS17

COPC	SS9 (mg/kg)	SS10 (mg/kg)	SS11 (mg/kg)	SS12 (mg/kg)	SS13 (mg/kg)	SS14 (mg/kg)	SS15 (mg/kg)	SS16 (mg/kg)	SS17 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
VOCs												
Chloroform	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	800	32
1,1,1-Trichloroethane (TCA)	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	2.0	160,000	np
Carbon tetrachloride	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	320	14
Benzene	< 0.02	< 0.02	< 0.024	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.03	320	18
1,1-Dichloropropene	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	np	np
1,2-Dichloroethane (EDC)	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	480	11
Trichloroethene (TCE)	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	0.03	40	12
1,2-Dichloropropane	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	3,200	27
Dibromoethane	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	np	np
Bromodichloromethane	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	1,600	16
2-Chloroethyl Vinyl Ether	--	< 0.0054	< 0.0085	< 0.0047	--	< 0.0025	--	--	--	np	np	np
1,3-Dichloropropene (cis)	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	2,400	10
Toluene	< 0.040	< 0.078	< 0.12	< 0.099	< 0.049	< 0.060	< 0.081	< 0.071	< 0.050	7.0	6,400	np
1,3-Dichloropropene (trans)	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	2,400	10
1,1,2-Trichloroethane	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	320	18
Tetrachloroethene (PCE)	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	0.05	480	480
1,3-Dichloropropane	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	np	np
Dibromochloromethane	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	1,600	12

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram

Table D-5 (continued)
Surface Soil Analytical Data– SS9 through SS17

COPC	SS9 (mg/kg)	SS10 (mg/kg)	SS11 (mg/kg)	SS12 (mg/kg)	SS13 (mg/kg)	SS14 (mg/kg)	SS15 (mg/kg)	SS16 (mg/kg)	SS17 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
VOCs												
1,2-Dibromoethane[1] (EDB)	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	0.005	720	0.5
Chlorobenzene	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	1,600	np
1,1,1,2-Tetrachloroethane	--	< 0.0011	< 0.0017	< 0.00094	--	< 0.00051	--	--	--	np	2,400	38
Ethylbenzene	< 0.040	< 0.078	< 0.12	< 0.099	< 0.049	< 0.060	< 0.081	< 0.071	< 0.050	6.0	8,000	np
Xylenes (total)	< 0.080	< 0.156	< 0.24	< 0.198	< 0.098	< 0.120	< 0.162	< 0.142	< 0.100	9.0	16,000	np
Bromoform	--	< 0.0054	< 0.0085	< 0.0047	--	< 0.0025	--	--	--	np	1,600	130
Bromobenzene[1]	--	< 0.078	< 0.12	< 0.062	--	< 0.00051	--	--	--	np	640	np
1,1,2,2-Tetrachloro-ethane[1, 2]	--	< 0.078	< 0.12	< 0.062	--	< 0.00051	--	--	--	np	1,600	5.0
1,2,3-Trichloropropane	--	**< 0.078**	**< 0.12**	**< 0.062**	--	< 0.00051	--	--	--	np	320	0.0063
2-Chlorotoluene	--	< 0.078	< 0.12	< 0.062	--	< 0.00051	--	--	--	np	1,600	np
4-Chlorotoluene	--	< 0.078	< 0.12	< 0.062	--	< 0.00051	--	--	--	np	1,600	np
1,3-Dichlorobenzene	--	< 0.078	< 0.12	< 0.062	--	< 0.00051	--	--	--	np	np	np
1,4-Dichlorobenzene[2]	--	< 0.078	< 0.12	< 0.062	--	< 0.00051	--	--	--	np	5,600	190
1,2-Dichlorobenzene	--	< 0.078	< 0.12	< 0.062	--	< 0.00051	--	--	--	np	7,200	np
1,2-Dibromo-3-chloropropane	--	< 0.39	< 0.59	< 0.31	--	< 0.0025	--	--	--	np	16	1.3
1,2,4-Trichlorobenzene[1]	--	< 0.078	< 0.12	< 0.062	--	< 0.00051	--	--	--	np	800	34
Hexachlorobutadiene[1]	--	< 0.39	< 0.59	< 0.31	--	< 0.0025	--	--	--	np	80	13

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
Bold = practical quantitation limit greater than PCL

Table D-5 (continued)
Surface Soil Analytical Data– SS9 through SS17

COPC	SS9 (mg/kg)	SS10 (mg/kg)	SS11 (mg/kg)	SS12 (mg/kg)	SS13 (mg/kg)	SS14 (mg/kg)	SS15 (mg/kg)	SS16 (mg/kg)	SS17 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
VOCs												
1,2,3-Trichlorobenzene	--	< 0.078	< 0.12	< 0.062	--	< 0.00051	--	--	--	np	np	np
SVOCs												
Naphthalene	--	--	--	--	--	--	--	--	--	5.0	1,600	np
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	np	320	np
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	np	5,600	34
Acenaphthylene	--	--	--	--	--	--	--	--	--	np	np	np
Acenaphthene	--	--	--	--	--	--	--	--	--	np	4,800	np
Fluorene	--	--	--	--	--	--	--	--	--	np	3,200	np
Pentachlorophenol	--	--	--	--	--	--	--	--	--	np	400	2.5
Phenanthrene	--	--	--	--	--	--	--	--	--	np	np	np
Anthracene	--	--	--	--	--	--	--	--	--	np	24,000	np
Fluoranthene	--	--	--	--	--	--	--	--	--	np	3,200	np
Pyrene	--	--	--	--	--	--	--	--	--	np	2,400	np
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	np	np	np
Chrysene	--	--	--	--	--	--	--	--	--	np	np	np
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	np	np	np
Benzo(j,k)fluoranthene	--	--	--	--	--	--	--	--	--	np	np	np
Benzo(a)pyrene	--	--	--	--	--	--	--	--	--	0.1	24	0.19
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	np	np	np
Dibenzo(a,h)anthracene	--	--	--	--	--	--	--	--	--	np	np	np

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram

Table D-5 (continued)
Surface Soil Analytical Data– SS9 through SS17

COPC	SS9 (mg/kg)	SS10 (mg/kg)	SS11 (mg/kg)	SS12 (mg/kg)	SS13 (mg/kg)	SS14 (mg/kg)	SS15 (mg/kg)	SS16 (mg/kg)	SS17 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
SVOCs												
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	np	np	np
PAHs												
Naphthalene	< 0.0076	< 0.0096	0.12	0.014	< 0.0081	< 0.0081	< 0.0086	< 0.0080	< 0.0076	5.0	1,600	np
2-Methylnaphthalene	< 0.0076	< 0.0096	0.078	0.017	< 0.0081	< 0.0081	< 0.0086	< 0.0080	< 0.0076	np	320	np
1-Methylnaphthalene	< 0.0076	< 0.0096	0.037	0.026	< 0.0081	< 0.0081	< 0.0086	< 0.0080	< 0.0076	np	5,600	34
Acenaphthylene	< 0.0076	0.024	0.089	< 0.010	< 0.0081	< 0.0081	< 0.0086	< 0.0080	< 0.0076	np	np	np
Acenaphthene	< 0.0076	< 0.0096	0.027	< 0.010	< 0.0081	< 0.0081	< 0.0086	< 0.0080	< 0.0076	np	4,800	np
Fluorene	< 0.0076	< 0.0096	0.042	< 0.010	< 0.0081	< 0.0081	< 0.0086	< 0.0080	< 0.0076	np	3,200	np
Phenanthrene	< 0.0076	0.016	0.40	0.054	< 0.0081	0.012	0.036	< 0.0080	< 0.0076	np	np	np
Anthracene	< 0.0076	0.026	0.22	< 0.010	< 0.0081	< 0.0081	< 0.0086	< 0.0080	< 0.0076	np	24,000	np
Fluoranthene	< 0.0076	0.050	0.52	0.015	< 0.0081	0.012	0.060	< 0.0080	< 0.0076	np	3,200	np
Pyrene	< 0.0076	0.042	0.39	0.022	< 0.0081	0.013	0.066	< 0.0080	< 0.0076	np	2,400	np
Benzo(a)anthracene	< 0.0076	0.058	0.61	< 0.010	< 0.0081	< 0.0081	0.032	< 0.0080	< 0.0076	np	np	np
Chrysene	< 0.0076	0.088	0.99	0.011	< 0.0081	0.0085	0.040	< 0.0080	< 0.0076	np	np	np
Benzo(b)fluoranthene	< 0.0076	0.15	0.89	< 0.010	< 0.0081	0.011	0.048	< 0.0080	< 0.0076	np	np	np
Benzo(j,k)fluoranthene	< 0.0076	0.031	0.26	< 0.010	< 0.0081	< 0.0081	0.015	< 0.0080	< 0.0076	np	np	np
Benzo(a)pyrene	< 0.0076	0.056	**0.33**	< 0.010	< 0.0081	< 0.0081	0.039	< 0.0080	< 0.0076	0.1	24	0.19
Indeno(1,2,3-cd)pyrene	< 0.0076	0.066	0.15	< 0.010	< 0.0081	< 0.0081	0.024	< 0.0080	< 0.0076	np	np	np
Dibenzo(a,h)anthracene	< 0.0076	0.016	0.060	< 0.010	< 0.0081	< 0.0081	< 0.0086	< 0.0080	< 0.0076	np	np	np
Benzo(g,h,i)perylene	< 0.0076	0.055	0.19	< 0.010	< 0.0081	< 0.0081	0.024	< 0.0080	< 0.0076	np	np	Np
cPAH TEQ	N/A	0.08898	**0.5369**	0.00761	N/A	0.006855	0.05173	N/A	N/A	0.1	np	np

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
Bold = practical quantitation limit greater than PCL
Bold = detected concentration is greater than the PCL
cPAH = carcinogenic polycyclic aromatic hydrocarbons
TEQ = total toxic equivalent concentration

Table D-5 (continued)
Surface Soil Analytical Data– SS9 through SS17

COPC	SS9 (mg/kg)	SS10 (mg/kg)	SS11 (mg/kg)	SS12 (mg/kg)	SS13 (mg/kg)	SS14 (mg/kg)	SS15 (mg/kg)	SS16 (mg/kg)	SS17 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
Metals (total)												
Arsenic[1]	< 11	< 14	< 18	< 15	< 12	< 12	< 13	< 12	< 11	20	24	0.67
Barium	40	180	89	70	28	55	64	30	48	np	16,000	np
Cadmium	< 0.57	< 0.72	< 0.90	< 0.75	< 0.61	< 0.61	< 0.64	< 0.60	< 0.57	2.0	80	np
Chromium (total)[2]	16	39	21	20	16	23	25	31	20	2,000	120,000	np
Copper	--	--	--	--	--	--	--	--	--	np	3,200	np
Lead	< 5.7	17	11	8.5	< 6.1	8.1	11	< 6.0	< 5.7	250	np	np
TCLP Lead	--	--	--	--	--	--	--	--	--			
Mercury	< 0.28	< 0.36	< 0.45	< 0.38	< 0.31	< 0.30	< 0.32	< 0.30	< 0.28	2.0	np	np
Selenium	< 11	< 14	< 18	< 15	**< 12**	**< 12**	**< 13**	< 12	**< 11**	np	400	np
Silver	<1.1	<1.4	<1.8	<1.5	< 1.2	< 1.2	< 1.3	<1.2	< 1.1	np	400	np
PCBs												
Aroclor 1016	--	< 0.072	< 0.090	< 0.075	--	< 0.061	--	--	--	np	5.6	14
Aroclor 1221	--	< 0.072	< 0.090	< 0.075	--	< 0.061	--	--	--	np	np	np
Aroclor 1232	--	< 0.072	< 0.090	< 0.075	--	< 0.061	--	--	--	np	np	np
Aroclor 1242	--	< 0.072	< 0.090	< 0.075	--	< 0.061	--	--	--	np	np	np
Aroclor 1248	--	< 0.072	< 0.090	< 0.075	--	< 0.061	--	--	--	np	np	np
Aroclor 1254	--	< 0.072	< 0.090	< 0.075	--	< 0.061	--	--	--	np	1.6	0.5
Aroclor 1260	--	< 0.072	< 0.090	< 0.075	--	< 0.061	--	--	--	np	np	0.5

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
Bold = detected concentration is greater than the PCL
[1] = cleanup level set at 20 mg/kg based on direct contact using Equation 740-2 and protection of groundwater for drinking water use using the procedures in WAC 173-340-747(4), adjusted for natural background for soil
[2] = cleanup level set at 2,000 mg/kg (CUL for chromium III), assuming that the measured concentration of total chromium is the concentration of chromium III

Table D-5 (continued)
Surface Soil Analytical Data– SS9 through SS17

COPC	SS9 (mg/kg)	SS10 (mg/kg)	SS11 (mg/kg)	SS12 (mg/kg)	SS13 (mg/kg)	SS14 (mg/kg)	SS15 (mg/kg)	SS16 (mg/kg)	SS17 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
PCBs												
PCBs (total)	--	<0.36	**<0.63**	**<0.525**	--	0.427	--	--	--	1.0	np	0.5

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
Bold = practical quantitation limit greater than PCL

Table D-6
Surface Soil Analytical Data– SS18 through SS25

COPC	SS18 (mg/kg)	SS19 (mg/kg)	SS20 (mg/kg)	SS20A (mg/kg)	SS21 (mg/kg)	SS22 (mg/kg)	SS23 (mg/kg)	SS24 (mg/kg)	SS25 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
TPH												
Gasoline (GRO)	< 4.2	< 3.8	< 4.7	< 6.0	< 3.5	< 4.5	< 6.4	< 4.5	< 5.5	100	np	np
Diesel (DRO)	< 28	< 27	< 31	< 31	< 27	< 29	< 35	< 32	< 32	2,000	np	np
Heavy Oil Range	< 57	< 53	< 62	< 62	< 54	< 59	< 70	280	160	2,000	np	np
VOCs												
Dichlorodifluoromethane	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	16,000	np

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram

Table D-6 (continued)
Surface Soil Analytical Data– SS18 through SS25

COPC	SS18 (mg/kg)	SS19 (mg/kg)	SS20 (mg/kg)	SS20A (mg/kg)	SS21 (mg/kg)	SS22 (mg/kg)	SS23 (mg/kg)	SS24 (mg/kg)	SS25 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
VOCs												
Chloromethane	--	--	--	--	--	--	--	< 0.0024	< 0.0027	np	np	np
Vinyl chloride	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	240	0.67
Bromomethane	--	--	--	--	--	--	--	< 0.0024	< 0.0027	np	110	np
Chloroethane	--	--	--	--	--	--	--	< 0.0024	< 0.0027	np	np	np
Trichlorofluoromethane	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	24,000	np
1,1-Dichloroethene	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	4,000	np
Iodomethane	--	--	--	--	--	--	--	< 0.0024	< 0.0027	np	np	np
Methylene chloride	--	--	--	--	--	--	--	< 0.0024	< 0.0027	0.02	480	94
trans-1,2-Dichloroethene	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	1,600	np
Methyl t-Butyl Ether	--	--	--	--	--	--	--	< 0.00047	< 0.00055	0.1	np	560
1,1-Dichloroethane	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	16,000	180
2,2-Dichloropane	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	np	np
cis-1,2-Dichloroethene	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	160	np
Bromochloromethane	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	np	np
Chloroform	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	800	32
1,1,1-Trichloroethane (TCA)	--	--	--	--	--	--	--	< 0.00047	< 0.00055	2.0	160,000	np
Carbon tetrachloride	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	320	14
Benzene	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.03	320	18
1,1-Dichloropropene	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	np	np

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram

Table D-6 (continued)
Surface Soil Analytical Data– SS18 through SS25

COPC	SS18 (mg/kg)	SS19 (mg/kg)	SS20 (mg/kg)	SS20A (mg/kg)	SS21 (mg/kg)	SS22 (mg/kg)	SS23 (mg/kg)	SS24 (mg/kg)	SS25 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
VOCs												
1,2-Dichloroethane (EDC)	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	480	11
Trichloroethene (TCE)	--	--	--	--	--	--	--	< 0.00047	< 0.00055	0.03	40	12
1,2-Dichloropropane	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	3,200	27
Dibromoethane	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	np	np
Bromodichloromethane	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	1,600	16
2-Chloroethyl Vinyl Ether	--	--	--	--	--	--	--	< 0.0024	< 0.0027	np	np	np
1,3-Dichloropropene (cis)	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	2,400	10
Toluene	< 0.042	< 0.038	< 0.047	< 0.060	< 0.035	< 0.045	< 0.064	< 0.045	< 0.055	7.0	6,400	np
1,3-Dichloropropene (trans)	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	2,400	10
1,1,2-Trichloroethane	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	320	18
Tetrachloroethene (PCE)	--	--	--	--	--	--	--	< 0.00047	< 0.00055	0.05	480	480
1,3-Dichloropropane	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	np	np
Dibromochloromethane	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	1,600	12
1,2-Dibromoethane (EDB)	--	--	--	--	--	--	--	< 0.00047	< 0.00055	0.005	720	0.5
Chlorobenzene	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	1,600	np
1,1,1,2-Tetrachloroethane	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	2,400	38
Ethylbenzene	< 0.042	< 0.038	< 0.047	< 0.060	< 0.035	< 0.045	< 0.064	< 0.045	< 0.055	6.0	8,000	np
Xylenes (total)	< 0.084	< 0.076	< 0.094	< 0.120	< 0.070	< 0.090	< 0.128	< 0.090	< 0.110	9.0	16,000	np
Bromoform	--	--	--	--	--	--	--	< 0.0024	< 0.0027	np	1,600	130

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
Bold = practical quantitation limit greater than PCL
Bold = detected concentration is greater than the PCL

Table D-6 (continued)
Surface Soil Analytical Data– SS18 through SS25

COPC	SS18 (mg/kg)	SS19 (mg/kg)	SS20 (mg/kg)	SS20A (mg/kg)	SS21 (mg/kg)	SS22 (mg/kg)	SS23 (mg/kg)	SS24 (mg/kg)	SS25 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
VOCs												
Bromobenzene[1]	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	640	np
1,1,2,2-Tetrachloroethane[1, 2]	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	1,600	5.0
1,2,3-Trichloropropane	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	320	0.0063
2-Chlorotoluene	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	1,600	np
4-Chlorotoluene	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	1,600	np
1,3-Dichlorobenzene	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	np	np
1,4-Dichlorobenzene[2]	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	5,600	190
1,2-Dichlorobenzene	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	7,200	np
1,2-Dibromo-3-chloropropane	--	--	--	--	--	--	--	< 0.0024	< 0.0027	np	16	1.3
1,2,4-Trichlorobenzene[1]	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	800	34
Hexachlorobutadiene[1]	--	--	--	--	--	--	--	< 0.0024	< 0.0027	np	80	13
1,2,3-Trichlorobenzene	--	--	--	--	--	--	--	< 0.00047	< 0.00055	np	np	np
SVOCs												
Naphthalene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	< 0.0078	0.016	--	--	5.0	1,600	np
2-Methylnaphthalene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	< 0.0078	< 0.0093	--	--	np	320	np
1-Methylnaphthalene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	< 0.0078	< 0.0093	--	--	np	5,600	34
Acenaphthylene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	< 0.0078	< 0.0093	--	--	np	np	np
Acenaphthene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	< 0.0078	< 0.0093	--	--	np	4,800	np

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram

Table D-6 (continued)
Surface Soil Analytical Data– SS18 through SS25

COPC	SS18 (mg/kg)	SS19 (mg/kg)	SS20 (mg/kg)	SS20A (mg/kg)	SS21 (mg/kg)	SS22 (mg/kg)	SS23 (mg/kg)	SS24 (mg/kg)	SS25 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
SVOCs												
Fluorene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	< 0.0078	< 0.0093	--	--	np	3,200	np
Pentachlorophenol	< 0.19	< 0.18	< 0.21	< 0.21	< 0.18	< 0.19	< 0.23	--	--	np	400	2.5
Phenanthrene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.11	< 0.0093	--	--	np	np	np
Anthracene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.014	< 0.0093	--	--	np	24,000	np
Fluoranthene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.17	< 0.0093	--	--	np	3,200	np
Pyrene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.15	< 0.0093	--	--	np	2,400	np
Benzo(a)anthracene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.051	< 0.0093	--	--	np	np	np
Chrysene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.067	< 0.0093	--	--	np	np	np
Benzo(b)fluoranthene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.081	< 0.0093	--	--	np	np	np
Benzo(j,k)fluoranthene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.031	< 0.0093	--	--	np	np	np
Benzo(a)pyrene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.062	< 0.0093	--	--	0.1	24	0.19
Indeno(1,2,3-cd)pyrene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.041	< 0.0093	--	--	np	np	np
Dibenzo(a,h)anthracene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.010	< 0.0093	--	--	np	np	np
Benzo(g,h,i)perylene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.042	< 0.0093	--	--	np	np	np
PAHs												
Naphthalene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	< 0.0078	< 0.0093	0.078	< 0.0085	5.0	1,600	np
2-Methylnaphthalene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	< 0.0078	< 0.0093	0.090	< 0.0085	np	320	np
1-Methylnaphthalene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	< 0.0078	< 0.0093	0.13	< 0.0085	np	5,600	34
Acenaphthylene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	< 0.0078	< 0.0093	0.040	< 0.0085	np	np	np
Acenaphthene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	< 0.0078	< 0.0093	0.036	< 0.0085	np	4,800	Np
Fluorene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	< 0.0078	< 0.0093	0.046	< 0.0085	np	3,200	np
Phenanthrene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.11	< 0.0093	0.25	< 0.0085	np	np	np

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram

Table D-6 (continued)
Surface Soil Analytical Data– SS18 through SS25

COPC	SS18 (mg/kg)	SS19 (mg/kg)	SS20 (mg/kg)	SS20A (mg/kg)	SS21 (mg/kg)	SS22 (mg/kg)	SS23 (mg/kg)	SS24 (mg/kg)	SS25 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
PAHs												
Anthracene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.014	< 0.0093	0.033	< 0.0085	np	24,000	np
Fluoranthene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.17	< 0.0093	0.062	< 0.0085	np	3,200	np
Pyrene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.15	< 0.0093	0.11	< 0.0085	np	2,400	np
Benzo(a)anthracene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.051	< 0.0093	0.032	< 0.0085	np	np	np
Chrysene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.067	< 0.0093	0.048	0.012	np	np	np
Benzo(b)fluoranthene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.081	< 0.0093	0.031	< 0.0085	np	np	np
Benzo(j,k)fluoranthene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.031	< 0.0093	< 0.0086	< 0.0085	np	np	np
Benzo(a)pyrene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.062	< 0.0093	0.029	< 0.0085	0.1	24	0.19
Indeno(1,2,3-cd)pyrene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.041	< 0.0093	0.014	< 0.0085	np	np	np
Dibenzo(a,h)anthracene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.01	< 0.0093	< 0.0086	< 0.0085	np	np	np
Benzo(g,h,i)perylene	< 0.0076	< 0.0071	< 0.0083	< 0.0083	< 0.0072	0.042	< 0.0093	0.023	< 0.0085	np	np	np
cPAH TEQ	N/A	N/A	N/A	N/A	N/A	0.08407	N/A	0.03804	0.006495	0.1	np	np
Metals (total)												
Arsenic	< 11	< 11	< 12	< 12	< 11	< 12	< 14	< 13	< 13	20	24	0.67
Barium	37	46	66	71	28	57	56	48	61	np	16,000	np
Cadmium	< 0.57	< 0.53	< 0.62	< 0.62	< 0.54	< 0.58	< 0.70	< 0.65	< 0.64	2.0	80	np
Chromium (total)[1]	21	17	29	29	18	26	25	23	23	2,000	120,000	np

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
[1] = cleanup level set at 2,000 mg/kg (CUL for chromium III), assuming that the measured concentration of total chromium is the concentration of chromium III
cPAH = carcinogenic polycyclic aromatic hydrocarbons
TEQ = total toxic equivalent concentration

Table D-6 (continued)
Surface Soil Analytical Data– SS18 through SS25

COPC	SS18 (mg/kg)	SS19 (mg/kg)	SS20 (mg/kg)	SS20A (mg/kg)	SS21 (mg/kg)	SS22 (mg/kg)	SS23 (mg/kg)	SS24 (mg/kg)	SS25 (mg/kg)	Soil Method A Unrestricted Land Use (mg/kg)	Soil Method B Noncancer (mg/kg)	Soil Method B Cancer (mg/kg)
Metals (total)												
Copper	11	12	17	17	7.5	19	13	--	--	np	3,200	np
Lead	< 5.7	< 5.3	< 6.2	< 6.2	< 5.4	< 5.8	< 7.0	8.5	35	250	np	np
Mercury	< 0.28	< 0.27	< 0.31	< 0.31	< 0.27	< 0.29	< 0.35	< 0.32	< 0.32	2.0	np	np
Selenium	**< 11**	**< 11**	**< 12**	**< 12**	**< 11**	**< 12**	**< 14**	**< 13**	**< 13**	np	400	np
Silver	< 1.1	< 1.1	< 1.2	< 1.2	< 1.1	< 1.2	< 1.4	< 1.3	< 1.3	np	400	np
PCBs												
Aroclor 1016	--	--	--	--	--	--	--	< 0.065	< 0.064	np	5.6	14
Aroclor 1221	--	--	--	--	--	--	--	< 0.065	< 0.064	np	np	np
Aroclor 1232	--	--	--	--	--	--	--	< 0.065	< 0.064	np	np	np
Aroclor 1242	--	--	--	--	--	--	--	< 0.065	< 0.064	np	np	np
Aroclor 1248	--	--	--	--	--	--	--	< 0.065	< 0.064	np	np	np
Aroclor 1254	--	--	--	--	--	--	--	< 0.065	< 0.064	np	1.6	0.5
Aroclor 1260	--	--	--	--	--	--	--	< 0.065	< 0.064	np	np	0.5
PCBs (total)								<0.455	<0.448	1.0	np	0.5

np = not published
-- = not analyzed per the method indicated
mg/kg = milligrams per kilogram
Bold = practical quantitation limit greater than PCL
Bold = detected concentration is greater than the PCL

Table D-7
Groundwater Analytical Data– MW1 through 8 and MW11

COPC	MW1 (µg/L)	MW2 (µg/L)	MW3 (µg/L)	MW3a (µg/L)	MW4 (µg/L)	MW5 (µg/L)	MW6 (µg/L)	MW7 (µg/L)	MW8 (µg/L)	MW11 (µg/L)	Ground Water Method A (µg/L)	Ground Water Method B Noncancer (µg/L)	Ground Water Method B Cancer (µg/L)
TPH													
Gasoline (GRO)	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	1,000	np	np
Diesel (DRO)	< 220	< 210	< 210	< 220	< 220	< 210	< 210	380	< 210	< 210	500	np	np
Heavy Oil Range	< 220	**540**	260	260	310	270	230	**630**	< 210	< 210	500	np	np
VOCs													
Dichlorodifluoromethane	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	1,600	np
Chloromethane	--	--	< 1.0	< 1.0	--	--	--	--	--	--	np	np	np
Vinyl chloride	--	--	< 0.20	< 0.20	--	--	--	--	--	--	0.2	24	0.029
Bromomethane	--	--	< 2.0	< 2.0	--	--	--	--	--	--	np	11	np
Chloroethane	--	--	< 1.0	< 1.0	--	--	--	--	--	--	np	np	np
Trichlorofluoromethane	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	2,400	np
1,1-Dichloroethene	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	400	np
Iodomethane	--	--	< 5.0	< 5.0	--	--	--	--	--	--	np	np	np
Methylene chloride	--	--	< 1.0	< 1.0	--	--	--	--	--	--	5.0	48	5.8
trans-1,2-Dichloroethene	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	160	np
Methyl t-Butyl Ether	--	--	< 0.20	< 0.20	--	--	--	--	--	--	20	np	24
1,1-Dichloroethane	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	1,600	7.7
2,2-Dichloropropane	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	np	np
cis-1,2-Dichloroethene	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	16	np
Bromochloromethane	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	np	np
Chloroform	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	80	1.4

np = not published
-- = not analyzed per the method indicated
µg/L = micrograms per liter
Bold = detected concentration is greater than the PCL

Table D-7 (continued)
Groundwater Analytical Data– MW1 through 8 and MW11

COPC	MW1 (µg/L)	MW2 (µg/L)	MW3 (µg/L)	MW3a (µg/L)	MW4 (µg/L)	MW5 (µg/L)	MW6 (µg/L)	MW7 (µg/L)	MW8 (µg/L)	MW11 (µg/L)	Ground Water Method A (µg/L)	Ground Water Method B Noncancer (µg/L)	Ground Water Method B Cancer (µg/L)
VOCs													
1,1,1-Trichloroethane (TCA)	--	--	< 0.20	< 0.20	--	--	--	--	--	--	200	16,000	np
Carbon tetrachloride[1]	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	32	0.63
1,1-Dichloropopene	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	np	np
Benzene[1, 2, 3]	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	5.0	32	0.8
1,2-Dichloroethane[1] (EDC)	--	--	< 0.20	< 0.20	--	--	--	--	--	--	5.0	48	0.48
Trichloroethene[1] (TCE)	--	--	< 0.20	< 0.20	--	--	--	--	--	--	5.0	4.0	0.54
1,2-Dichloropropane[1]	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	320	1.2
Dibromoethane	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	np	np
Bromodichloromethane[1]	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	160	0.71
2-Chloroethyl Vinyl Ether	--	--	< 30	< 30	--	--	--	--	--	--	np	np	np
1,3-Dichloropropene (cis)	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	240	0.44
1,3-Dichloropropene (trans)	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	240	0.44
Toluene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1,000	640	np
1,1,2-Trichloroethane	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	32	0.77
Tetrachloroethene[1] (PCE)	--	--	< 0.20	< 0.20	--	--	--	--	--	--	5.0	48	21
1,3-Dichloropropane	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	np	np
Dibromochloromethane	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	160	0.52
1,2-Dibromoethane (EDB)	--	--	< 0.0096	< 0.0095	--	--	--	--	--	--	0.01	72	0.022
Chlorobenzene	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	160	np

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µg/L = micrograms per liter
Bold = practical quantitation limit greater than PCL

Table D-7 (continued)
Groundwater Analytical Data– MW1 through 8 and MW11

COPC	MW1 (µg/L)	MW2 (µg/L)	MW3 (µg/L)	MW3a (µg/L)	MW4 (µg/L)	MW5 (µg/L)	MW6 (µg/L)	MW7 (µg/L)	MW8 (µg/L)	MW11 (µg/L)	Ground Water Method A (µg/L)	Ground Water Method B Noncancer (µg/L)	Ground Water Method B Cancer (µg/L)
VOCs													
1,1,1,2-Tetrachloroethane	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	240	1.7
Ethylbenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	700	800	np
Xylenes (total)	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	1,000	1,600	np
Bromoform	--	--	< 1.0	< 1.0	--	--	--	--	--	--	np	160	5.5
Bromobenzene	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	64	np
1,1,2,2-Tetrachloroethane	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	160	0.22
1,2,3-Trichloropropane	--	--	**< 0.20**	**< 0.20**	--	--	--	--	--	--	np	32	0.00038
2-Chlorotoluene	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	1,600	np
4-Chlorotoluene	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	1,600	np
1,3-Dichlorobenzene	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	np	np
1,4-Dichlorobenzene	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	560	8.1
1,2-Dichlorobenzene	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	720	np
1,2-Dibromo-3-chloropropane	--	--	**< 1.0**	**< 1.0**	--	--	--	--	--	--	np	1.6	0.52
1,2,4-Trichlorobenzene	--	--	< 0.20	< 0.20	--	--	--	--	--	--	np	80	1.5
Hexachlorobutadiene	--	--	< 1.0	< 1.0	--	--	--	--	--	--	np	8.0	0.56
1,2,3-Trichlorobenzene	--	--	< 1.0	< 1.0	--	--	--	--	--	--	np	np	np
SVOCs													
Naphthalene	--	< 0.099	0.12	0.17	< 0.10	< 0.10	< 0.097	< 0.098	< 0.10	< 0.10	160	160	np
2-Methylnaphthalene	--	< 0.099	< 0.097	< 0.10	< 0.10	< 0.10	< 0.097	< 0.098	< 0.10	< 0.10	np	32	np

np = not published
-- = not analyzed per the method indicated
µg/L = micrograms per liter
Bold = practical quantitation limit greater than PCL

Table D-7 (continued)
Groundwater Analytical Data– MW1 through 8 and MW11

COPC	MW1 (µg/L)	MW2 (µg/L)	MW3 (µg/L)	MW3a (µg/L)	MW4 (µg/L)	MW5 (µg/L)	MW6 (µg/L)	MW7 (µg/L)	MW8 (µg/L)	MW11 (µg/L)	Ground Water Method A (µg/L)	Ground Water Method B Noncancer (µg/L)	Ground Water Method B Cancer (µg/L)
SVOCs													
1-Methylnaphthalene	--	< 0.099	< 0.097	< 0.10	< 0.10	< 0.10	< 0.097	< 0.098	< 0.10	< 0.10	np	560	1.5
Acenaphthylene	--	< 0.099	< 0.097	< 0.10	< 0.10	< 0.10	< 0.097	< 0.098	< 0.10	< 0.10	np	np	np
Acenaphthene	--	< 0.099	< 0.097	< 0.10	< 0.10	< 0.10	< 0.097	0.11	< 0.10	< 0.10	np	960	np
Fluorene	--	< 0.099	< 0.097	< 0.10	< 0.10	< 0.10	< 0.097	< 0.098	< 0.10	< 0.10	np	640	np
Pentachlorophenol	--	--	--	--	--	--	--	--	--	**< 5.0**	np	80	0.22
Phenanthrene	--	< 0.099	< 0.097	< 0.10	< 0.10	< 0.10	< 0.097	< 0.098	< 0.10	< 0.10	np	np	np
Anthracene	--	< 0.099	< 0.097	< 0.10	< 0.10	< 0.10	< 0.097	< 0.098	< 0.10	< 0.10	np	4,800	np
Fluoranthene	--	< 0.099	< 0.097	< 0.10	< 0.10	< 0.10	< 0.097	< 0.098	< 0.10	< 0.10	np	640	np
Pyrene	--	< 0.099	< 0.097	0.12	< 0.10	< 0.10	< 0.097	< 0.098	< 0.10	< 0.10	np	480	np
Benzo(a)anthracene	--	< 0.0099	< 0.0097	< 0.010	< 0.010	< 0.010	< 0.0097	< 0.0098	< 0.010	< 0.010	np	np	np
Chrysene	--	< 0.0099	< 0.0097	< 0.010	< 0.010	< 0.010	< 0.0097	< 0.0098	< 0.010	< 0.010	np	np	np
Benzo(b)fluoranthene	--	< 0.0099	< 0.0097	< 0.010	< 0.010	< 0.010	< 0.0097	< 0.0098	< 0.010	< 0.010	np	np	np
Benzo(j,k)fluoranthene	--	< 0.0099	< 0.0097	< 0.010	< 0.010	< 0.010	< 0.0097	< 0.0098	< 0.010	< 0.010	np	np	np
Benzo(a)pyrene[1]	--	< 0.0099	< 0.0097	< 0.010	< 0.010	< 0.010	< 0.0097	< 0.0098	< 0.010	< 0.010	0.1	4.8	0.023
Indeno(1,2,3-cd)pyrene	--	< 0.0099	< 0.0097	< 0.010	< 0.010	< 0.010	< 0.0097	< 0.0098	< 0.010	< 0.010	np	np	np
Dibenzo(a,h)anthracene	--	< 0.0099	< 0.0097	< 0.010	< 0.010	< 0.010	< 0.0097	< 0.0098	< 0.010	< 0.010	np	np	np
Benzo(g,h,i)perylene	--	< 0.0099	< 0.0097	< 0.010	< 0.010	< 0.010	< 0.0097	< 0.0098	< 0.010	< 0.010	np	np	np
Benzoic Acid	< 26	< 27	< 26	< 27	< 27	< 27	< 26	< 26	< 27	< 27	np	64,000	np
Metals (total)													
Arsenic[1, 2, 3]	< 3.3	**8.2**	< 3.3	< 3.3	< 3.3	**73**	**18**	**36**	< 3.3	< 3.3	5.0	4.8	0.058

np = not published
-- = not analyzed per the method indicated
µg/L = micrograms per liter
Bold = practical quantitation limit greater than PCL
Bold = detected concentration is greater than the PCL

Table D-7 (continued)
Groundwater Analytical Data– MW1 through 8 and MW11

COPC	MW1 (µg/L)	MW2 (µg/L)	MW3 (µg/L)	MW3a (µg/L)	MW4 (µg/L)	MW5 (µg/L)	MW6 (µg/L)	MW7 (µg/L)	MW8 (µg/L)	MW11 (µg/L)	Ground Water Method A (µg/L)	Ground Water Method B Noncancer (µg/L)	Ground Water Method B Cancer (µg/L)
Metals (total)													
Barium	30	55	< 28	< 28	90	50	33	62	37	32	np	3,200	np
Cadmium	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4	5.0	8.0	np
Chromium (total)	**< 11**	**< 11**	**< 11**	**< 11**	**< 11**	**< 11**	**< 11**	**< 11**	**< 11**	**< 11**	5.0	np	np
Copper	--	--	--	--	--	--	--	--	--	< 11	np	640	np
Iron	2,700	4,600	**13,000**	**13,000**	7,300	**58,000**	**18,000**	**47,000**	8,600	3,900	np	11,000	np
Lead	< 1.1	< 1.1	1.2	1.3	5.9	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	15	np	np
Manganese	630	**17,000**	**1,000**	**1,000**	**6,200**	**11,000**	**4,500**	**7,100**	**2,500**	110	np	750	np
Mercury	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.0	np	np
Selenium	< 5.6	< 5.6	< 5.6	< 5.6	< 5.6	< 5.6	< 5.6	< 5.6	< 5.6	< 5.6	np	80	np
Silver	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	np	80	np
Metals (dissolved)													
Arsenic	< 3.0	**7.4**	< 3.0	< 3.0	< 3.0	**42**	**15**	**21**	< 3.0	< 3.0	5.0	4.8	0.058
Barium	< 25	38	< 25	< 25	52	26	< 25	40	< 25	< 25	np	3,200	np
Cadmium	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	5.0	8.0	np
Chromium (total)	**< 10**	**< 10**	**< 10**	**< 10**	**< 10**	**< 10**	**< 10**	**< 10**	**< 10**	**< 10**	5.0	np	np
Copper	--	--	--	--	--	--	--	--	--	< 10	np	640	np
Iron	< 56	2,100	9,400	9,600	260	**42,000**	**16,000**	**37,000**	560	95	np	11,000	np
Lead	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	15	np	np
Manganese	560	**18,000**	**1,000**	**990**	**6,200**	**13,000**	**4,500**	**7,600**	**2,500**	< 11	np	750	np
Mercury	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.0	np	np

np = not published
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µg/L = micrograms per liter
Bold = practical quantitation limit greater than PCL
Bold = detected concentration is greater than the PCL

Table D-7 (continued)
Groundwater Analytical Data– MW1 through 8 and MW11

COPC	MW1 (µg/L)	MW2 (µg/L)	MW3 (µg/L)	MW3a (µg/L)	MW4 (µg/L)	MW5 (µg/L)	MW6 (µg/L)	MW7 (µg/L)	MW8 (µg/L)	MW11 (µg/L)	Ground Water Method A (µg/L)	Ground Water Method B Noncancer (µg/L)	Ground Water Method B Cancer (µg/L)
Metals (dissolved)													
Selenium	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	np	80	np
Silver	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	np	80	np
PCBs													
Aroclor 1016	--	--	< 0.049	< 0.049	--	--	--	--	--	--	np	5.6	14
Aroclor 1221	--	--	< 0.049	< 0.049	--	--	--	--	--	--	np	np	np
Aroclor 1232	--	--	< 0.049	< 0.049	--	--	--	--	--	--	np	np	np
Aroclor 1242	--	--	< 0.049	< 0.049	--	--	--	--	--	--	np	np	np
Aroclor 1248	--	--	< 0.049	< 0.049	--	--	--	--	--	--	np	np	np
Aroclor 1254	--	--	**< 0.049**	**< 0.049**	--	--	--	--	--	--	np	1.6	0.5
Aroclor 1260	--	--	**< 0.049**	**< 0.049**	--	--	--	--	--	--	np	np	0.5
PCBs (total)	--	--	<0.343	<0.343	--	--	--	--	--	--	1.0	np	0.5
Properties													
pH*	6.6	6.6	5.7	5.7	6.7	6.7	6.5	6.5	6.0	6.1			
Redox Potential	293	205	407	399	< 200	245	237	250	392	365			
Ammonia (as N) (mg/L)	< 50	130	960	820	< 50	810	1,200	3,800	560	< 50	np	np	np

np = not published
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µg/L = micrograms per liter
Bold = practical quantitation limit greater than PCL
Bold = detected concentration is greater than the PCL

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

December 14, 2020

Kim Kim
EnPro Environmental
151 Hekili Street, Suite 210
Kailua, HI 96734

Re: Analytical Data for Project 1903-00129-RI
Laboratory Reference No. 2011-099

Dear Kim:

Enclosed are the analytical results and associated quality control data for samples submitted on November 10, 2020.

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,

David Baumeister
Project Manager

Enclosures

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

Case Narrative

Samples were collected on November 9, 2020 and received by the laboratory on November 10, 2020. 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/BTEX Analysis

The Method 5035A VOA vials provided for the samples were filled completely and therefore unusable. The samples were consequently extracted from 8-ounce jars for analysis. Some loss of volatiles may have occurred.

The chromatogram for sample B3-10 is not similar to a typical gas.

The MTCA Method A cleanup level of 0.030 ppm for Benzene is not achievable for sample B3-10 due to the low dry weight of the sample.

Volatiles EPA 8260D Analysis

The Method 5035A VOA vials provided for the samples were filled completely and therefore unusable. The samples were consequently extracted from 8-ounce jars for analysis. Some loss of volatiles may have occurred.

Soluble Hexavalent Chromium EPA 7196A Analysis

The Matrix Spike/Matrix Spike Duplicate recoveries for hexavalent chromium are outside control limits due to matrix interferences. The soil exhibits reducing conditions. The Spike Blank recovery was 91 %.
The Standard Reference Material meets the published acceptance limits.

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: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B1-7**					
Laboratory ID:	11-099-01					
Benzene	**ND**	0.020	EPA 8021B	11-12-20	11-12-20	
Toluene	**ND**	0.055	EPA 8021B	11-12-20	11-12-20	
Ethyl Benzene	**ND**	0.055	EPA 8021B	11-12-20	11-12-20	
m,p-Xylene	**ND**	0.055	EPA 8021B	11-12-20	11-12-20	
o-Xylene	**ND**	0.055	EPA 8021B	11-12-20	11-12-20	
Gasoline	**ND**	5.5	NWTPH-Gx	11-12-20	11-12-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*58-129*				
Client ID:	**B1-15**					
Laboratory ID:	11-099-02					
Benzene	**ND**	0.020	EPA 8021B	11-12-20	11-12-20	
Toluene	**ND**	0.055	EPA 8021B	11-12-20	11-12-20	
Ethyl Benzene	**ND**	0.055	EPA 8021B	11-12-20	11-12-20	
m,p-Xylene	**ND**	0.055	EPA 8021B	11-12-20	11-12-20	
o-Xylene	**ND**	0.055	EPA 8021B	11-12-20	11-12-20	
Gasoline	**ND**	5.5	NWTPH-Gx	11-12-20	11-12-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*58-129*				
Client ID:	**B8-7**					
Laboratory ID:	11-099-03					
Benzene	**ND**	0.020	EPA 8021B	11-12-20	11-12-20	
Toluene	**ND**	0.041	EPA 8021B	11-12-20	11-12-20	
Ethyl Benzene	**ND**	0.041	EPA 8021B	11-12-20	11-12-20	
m,p-Xylene	**ND**	0.041	EPA 8021B	11-12-20	11-12-20	
o-Xylene	**ND**	0.041	EPA 8021B	11-12-20	11-12-20	
Gasoline	**ND**	4.1	NWTPH-Gx	11-12-20	11-12-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*58-129*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B8-15**					
Laboratory ID:	11-099-04					
Benzene	**ND**	0.020	EPA 8021B	11-12-20	11-12-20	
Toluene	**ND**	0.040	EPA 8021B	11-12-20	11-12-20	
Ethyl Benzene	**ND**	0.040	EPA 8021B	11-12-20	11-12-20	
m,p-Xylene	**ND**	0.040	EPA 8021B	11-12-20	11-12-20	
o-Xylene	**ND**	0.040	EPA 8021B	11-12-20	11-12-20	
Gasoline	**ND**	4.0	NWTPH-Gx	11-12-20	11-12-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*58-129*				
Client ID:	**B3-7**					
Laboratory ID:	11-099-05					
Benzene	**ND**	0.020	EPA 8021B	11-12-20	11-12-20	
Toluene	**ND**	0.098	EPA 8021B	11-12-20	11-12-20	
Ethyl Benzene	**ND**	0.098	EPA 8021B	11-12-20	11-12-20	
m,p-Xylene	**ND**	0.098	EPA 8021B	11-12-20	11-12-20	
o-Xylene	**ND**	0.098	EPA 8021B	11-12-20	11-12-20	
Gasoline	**ND**	9.8	NWTPH-Gx	11-12-20	11-12-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*109*	*58-129*				
Client ID:	**B3-10**					
Laboratory ID:	11-099-06					
Benzene	**ND**	0.040	EPA 8021B	11-12-20	11-12-20	
Toluene	**ND**	0.20	EPA 8021B	11-12-20	11-12-20	
Ethyl Benzene	**ND**	0.20	EPA 8021B	11-12-20	11-12-20	
m,p-Xylene	**ND**	0.20	EPA 8021B	11-12-20	11-12-20	
o-Xylene	**ND**	0.20	EPA 8021B	11-12-20	11-12-20	
Gasoline	**21**	20	NWTPH-Gx	11-12-20	11-12-20	T
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*58-129*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B3-7a**					
Laboratory ID:	11-099-07					
Benzene	**ND**	0.022	EPA 8021B	11-12-20	11-12-20	
Toluene	**ND**	0.11	EPA 8021B	11-12-20	11-12-20	
Ethyl Benzene	**ND**	0.11	EPA 8021B	11-12-20	11-12-20	
m,p-Xylene	**ND**	0.11	EPA 8021B	11-12-20	11-12-20	
o-Xylene	**ND**	0.11	EPA 8021B	11-12-20	11-12-20	
Gasoline	**ND**	11	NWTPH-Gx	11-12-20	11-12-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*106*	*58-129*				
Client ID:	**B3-15**					
Laboratory ID:	11-099-08					
Benzene	**ND**	0.020	EPA 8021B	11-12-20	11-12-20	
Toluene	**ND**	0.056	EPA 8021B	11-12-20	11-12-20	
Ethyl Benzene	**ND**	0.056	EPA 8021B	11-12-20	11-12-20	
m,p-Xylene	**ND**	0.056	EPA 8021B	11-12-20	11-12-20	
o-Xylene	**ND**	0.056	EPA 8021B	11-12-20	11-12-20	
Gasoline	**ND**	5.6	NWTPH-Gx	11-12-20	11-12-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*58-129*				
Client ID:	**B3-15a**					
Laboratory ID:	11-099-09					
Benzene	**ND**	0.020	EPA 8021B	11-12-20	11-12-20	
Toluene	**ND**	0.047	EPA 8021B	11-12-20	11-12-20	
Ethyl Benzene	**ND**	0.047	EPA 8021B	11-12-20	11-12-20	
m,p-Xylene	**ND**	0.047	EPA 8021B	11-12-20	11-12-20	
o-Xylene	**ND**	0.047	EPA 8021B	11-12-20	11-12-20	
Gasoline	**ND**	4.7	NWTPH-Gx	11-12-20	11-12-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*101*	*58-129*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B9-7**					
Laboratory ID:	11-099-10					
Benzene	**ND**	0.020	EPA 8021B	11-12-20	11-12-20	
Toluene	**ND**	0.071	EPA 8021B	11-12-20	11-12-20	
Ethyl Benzene	**ND**	0.071	EPA 8021B	11-12-20	11-12-20	
m,p-Xylene	**ND**	0.071	EPA 8021B	11-12-20	11-12-20	
o-Xylene	**ND**	0.071	EPA 8021B	11-12-20	11-12-20	
Gasoline	**ND**	7.1	NWTPH-Gx	11-12-20	11-12-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*101*	*58-129*				
Client ID:	**B9-15**					
Laboratory ID:	11-099-11					
Benzene	**ND**	0.020	EPA 8021B	11-12-20	11-12-20	
Toluene	**ND**	0.053	EPA 8021B	11-12-20	11-12-20	
Ethyl Benzene	**ND**	0.053	EPA 8021B	11-12-20	11-12-20	
m,p-Xylene	**ND**	0.053	EPA 8021B	11-12-20	11-12-20	
o-Xylene	**ND**	0.053	EPA 8021B	11-12-20	11-12-20	
Gasoline	**ND**	5.3	NWTPH-Gx	11-12-20	11-12-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*99*	*58-129*				
Client ID:	**B10-7**					
Laboratory ID:	11-099-12					
Benzene	**ND**	0.020	EPA 8021B	11-12-20	11-12-20	
Toluene	**ND**	0.064	EPA 8021B	11-12-20	11-12-20	
Ethyl Benzene	**ND**	0.064	EPA 8021B	11-12-20	11-12-20	
m,p-Xylene	**ND**	0.064	EPA 8021B	11-12-20	11-12-20	
o-Xylene	**ND**	0.064	EPA 8021B	11-12-20	11-12-20	
Gasoline	**ND**	6.4	NWTPH-Gx	11-12-20	11-12-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*58-129*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B10-15**					
Laboratory ID:	11-099-13					
Benzene	**ND**	0.020	EPA 8021B	11-12-20	11-12-20	
Toluene	**ND**	0.058	EPA 8021B	11-12-20	11-12-20	
Ethyl Benzene	**ND**	0.058	EPA 8021B	11-12-20	11-12-20	
m,p-Xylene	**ND**	0.058	EPA 8021B	11-12-20	11-12-20	
o-Xylene	**ND**	0.058	EPA 8021B	11-12-20	11-12-20	
Gasoline	**ND**	5.8	NWTPH-Gx	11-12-20	11-12-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*58-129*				
Client ID:	**B11-7**					
Laboratory ID:	11-099-14					
Benzene	**ND**	0.020	EPA 8021B	11-12-20	11-12-20	
Toluene	**ND**	0.054	EPA 8021B	11-12-20	11-12-20	
Ethyl Benzene	**ND**	0.054	EPA 8021B	11-12-20	11-12-20	
m,p-Xylene	**ND**	0.054	EPA 8021B	11-12-20	11-12-20	
o-Xylene	**ND**	0.054	EPA 8021B	11-12-20	11-12-20	
Gasoline	**ND**	5.4	NWTPH-Gx	11-12-20	11-12-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*101*	*58-129*				
Client ID:	**B11-15**					
Laboratory ID:	11-099-15					
Benzene	**ND**	0.020	EPA 8021B	11-12-20	11-12-20	
Toluene	**ND**	0.066	EPA 8021B	11-12-20	11-12-20	
Ethyl Benzene	**ND**	0.066	EPA 8021B	11-12-20	11-12-20	
m,p-Xylene	**ND**	0.066	EPA 8021B	11-12-20	11-12-20	
o-Xylene	**ND**	0.066	EPA 8021B	11-12-20	11-12-20	
Gasoline	**ND**	6.6	NWTPH-Gx	11-12-20	11-12-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*103*	*58-129*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B4-7**					
Laboratory ID:	11-099-16					
Benzene	**ND**	0.020	EPA 8021B	11-12-20	11-12-20	
Toluene	**ND**	0.065	EPA 8021B	11-12-20	11-12-20	
Ethyl Benzene	**ND**	0.065	EPA 8021B	11-12-20	11-12-20	
m,p-Xylene	**ND**	0.065	EPA 8021B	11-12-20	11-12-20	
o-Xylene	**ND**	0.065	EPA 8021B	11-12-20	11-12-20	
Gasoline	**ND**	6.5	NWTPH-Gx	11-12-20	11-12-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*58-129*				
Client ID:	**B4-15**					
Laboratory ID:	11-099-17					
Benzene	**ND**	0.020	EPA 8021B	11-12-20	11-12-20	
Toluene	**ND**	0.071	EPA 8021B	11-12-20	11-12-20	
Ethyl Benzene	**ND**	0.071	EPA 8021B	11-12-20	11-12-20	
m,p-Xylene	**ND**	0.071	EPA 8021B	11-12-20	11-12-20	
o-Xylene	**ND**	0.071	EPA 8021B	11-12-20	11-12-20	
Gasoline	**ND**	7.1	NWTPH-Gx	11-12-20	11-12-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*99*	*58-129*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1112S3					
Benzene	**ND**	0.020	EPA 8021B	11-12-20	11-12-20	
Toluene	**ND**	0.050	EPA 8021B	11-12-20	11-12-20	
Ethyl Benzene	**ND**	0.050	EPA 8021B	11-12-20	11-12-20	
m,p-Xylene	**ND**	0.050	EPA 8021B	11-12-20	11-12-20	
o-Xylene	**ND**	0.050	EPA 8021B	11-12-20	11-12-20	
Gasoline	**ND**	5.0	NWTPH-Gx	11-12-20	11-12-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*99*	*58-129*				
Laboratory ID:	MB1112S4					
Benzene	**ND**	0.020	EPA 8021B	11-12-20	11-12-20	
Toluene	**ND**	0.050	EPA 8021B	11-12-20	11-12-20	
Ethyl Benzene	**ND**	0.050	EPA 8021B	11-12-20	11-12-20	
m,p-Xylene	**ND**	0.050	EPA 8021B	11-12-20	11-12-20	
o-Xylene	**ND**	0.050	EPA 8021B	11-12-20	11-12-20	
Gasoline	**ND**	5.0	NWTPH-Gx	11-12-20	11-12-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*96*	*58-129*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-091-01										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*106*	*106*	*58-129*			
Laboratory ID:	11-091-02										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*108*	*108*	*58-129*			
SPIKE BLANKS											
Laboratory ID:	SB1112S2										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.992**	**0.999**	1.00	1.00		**99**	**100**	68-112	1	10	
Toluene	**1.02**	**1.03**	1.00	1.00		**102**	**103**	70-114	1	10	
Ethyl Benzene	**1.02**	**1.03**	1.00	1.00		**102**	**103**	70-115	1	10	
m,p-Xylene	**1.03**	**1.03**	1.00	1.00		**103**	**103**	69-117	0	11	
o-Xylene	**1.02**	**1.02**	1.00	1.00		**102**	**102**	71-115	0	11	
Surrogate:											
Fluorobenzene						*97*	*97*	*58-129*			

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B1-7**					
Laboratory ID:	11-099-01					
Diesel Range Organics	**ND**	28	NWTPH-Dx	11-12-20	11-13-20	
Lube Oil Range Organics	**ND**	56	NWTPH-Dx	11-12-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*92*	*50-150*				
Client ID:	**B1-15**					
Laboratory ID:	11-099-02					
Diesel Range Organics	**ND**	27	NWTPH-Dx	11-12-20	11-13-20	
Lube Oil Range Organics	**ND**	55	NWTPH-Dx	11-12-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*107*	*50-150*				
Client ID:	**B8-7**					
Laboratory ID:	11-099-03					
Diesel Range Organics	**ND**	27	NWTPH-Dx	11-12-20	11-13-20	
Lube Oil Range Organics	**ND**	53	NWTPH-Dx	11-12-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*117*	*50-150*				
Client ID:	**B8-15**					
Laboratory ID:	11-099-04					
Diesel Range Organics	**ND**	29	NWTPH-Dx	11-12-20	11-13-20	
Lube Oil Range Organics	**ND**	58	NWTPH-Dx	11-12-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*102*	*50-150*				
Client ID:	**B3-7**					
Laboratory ID:	11-099-05					
Diesel Range Organics	**ND**	39	NWTPH-Dx	11-12-20	11-13-20	
Lube Oil Range Organics	**530**	77	NWTPH-Dx	11-12-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*98*	*50-150*				
Client ID:	**B3-10**					
Laboratory ID:	11-099-06					
Diesel Range Organics	**700**	310	NWTPH-Dx	11-12-20	11-16-20	N
Lube Oil Range Organics	**4500**	620	NWTPH-Dx	11-12-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B3-7a**					
Laboratory ID:	11-099-07					
Diesel Range Organics	**120**	38	NWTPH-Dx	11-12-20	11-13-20	N
Lube Oil Range Organics	**960**	77	NWTPH-Dx	11-12-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*85*	*50-150*				
Client ID:	**B3-15**					
Laboratory ID:	11-099-08					
Diesel Range Organics	**ND**	28	NWTPH-Dx	11-12-20	11-13-20	
Lube Oil Range Organics	**ND**	56	NWTPH-Dx	11-12-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*92*	*50-150*				
Client ID:	**B3-15a**					
Laboratory ID:	11-099-09					
Diesel Range Organics	**ND**	28	NWTPH-Dx	11-12-20	11-13-20	
Lube Oil Range Organics	**ND**	57	NWTPH-Dx	11-12-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*73*	*50-150*				
Client ID:	**B9-7**					
Laboratory ID:	11-099-10					
Diesel Range Organics	**280**	32	NWTPH-Dx	11-12-20	11-13-20	N
Lube Oil Range Organics	**1200**	64	NWTPH-Dx	11-12-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				
Client ID:	**B9-15**					
Laboratory ID:	11-099-11					
Diesel Range Organics	**ND**	30	NWTPH-Dx	11-12-20	11-13-20	
Lube Oil Range Organics	**ND**	60	NWTPH-Dx	11-12-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				
Client ID:	**B10-7**					
Laboratory ID:	11-099-12					
Diesel Range Organics	**ND**	30	NWTPH-Dx	11-12-20	11-13-20	
Lube Oil Range Organics	**75**	61	NWTPH-Dx	11-12-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B10-15**					
Laboratory ID:	11-099-13					
Diesel Range Organics	**ND**	27	NWTPH-Dx	11-12-20	11-13-20	
Lube Oil Range Organics	**ND**	54	NWTPH-Dx	11-12-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				
Client ID:	**B11-7**					
Laboratory ID:	11-099-14					
Diesel Range Organics	**ND**	29	NWTPH-Dx	11-12-20	11-13-20	
Lube Oil Range Organics	**67**	57	NWTPH-Dx	11-12-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				
Client ID:	**B11-15**					
Laboratory ID:	11-099-15					
Diesel Range Organics	**ND**	30	NWTPH-Dx	11-12-20	11-13-20	
Lube Oil Range Organics	**ND**	59	NWTPH-Dx	11-12-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*91*	*50-150*				
Client ID:	**B4-7**					
Laboratory ID:	11-099-16					
Diesel Range Organics	**ND**	32	NWTPH-Dx	11-12-20	11-13-20	
Lube Oil Range Organics	**ND**	65	NWTPH-Dx	11-12-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				
Client ID:	**B4-15**					
Laboratory ID:	11-099-17					
Diesel Range Organics	**ND**	31	NWTPH-Dx	11-12-20	11-13-20	
Lube Oil Range Organics	**ND**	63	NWTPH-Dx	11-12-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1112S3					
Diesel Range Organics	**ND**	25	NWTPH-Dx	11-12-20	11-13-20	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	11-12-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*89*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	11-099-01									
	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						*92* *100*	*50-150*			
Laboratory ID:	11-099-17									
	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						*88* *99*	*50-150*			

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B8-7**					
Laboratory ID:	11-099-03					
Naphthalene	**ND**	0.0071	EPA 8270E/SIM	11-14-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0071	EPA 8270E/SIM	11-14-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0071	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthylene	**ND**	0.0071	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthene	**ND**	0.0071	EPA 8270E/SIM	11-14-20	11-16-20	
Fluorene	**ND**	0.0071	EPA 8270E/SIM	11-14-20	11-16-20	
Phenanthrene	**ND**	0.0071	EPA 8270E/SIM	11-14-20	11-16-20	
Anthracene	**ND**	0.0071	EPA 8270E/SIM	11-14-20	11-16-20	
Fluoranthene	**ND**	0.0071	EPA 8270E/SIM	11-14-20	11-16-20	
Pyrene	**ND**	0.0071	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]anthracene	**ND**	0.0071	EPA 8270E/SIM	11-14-20	11-16-20	
Chrysene	**ND**	0.0071	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[b]fluoranthene	**ND**	0.0071	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.0071	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]pyrene	**ND**	0.0071	EPA 8270E/SIM	11-14-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0071	EPA 8270E/SIM	11-14-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0071	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.0071	EPA 8270E/SIM	11-14-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*81*	*46 - 113*				
Pyrene-d10	*93*	*45 - 114*				
Terphenyl-d14	*89*	*49 - 121*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B8-15**					
Laboratory ID:	11-099-04					
Naphthalene	**ND**	0.0077	EPA 8270E/SIM	11-14-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0077	EPA 8270E/SIM	11-14-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0077	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthylene	**ND**	0.0077	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthene	**ND**	0.0077	EPA 8270E/SIM	11-14-20	11-16-20	
Fluorene	**ND**	0.0077	EPA 8270E/SIM	11-14-20	11-16-20	
Phenanthrene	**ND**	0.0077	EPA 8270E/SIM	11-14-20	11-16-20	
Anthracene	**ND**	0.0077	EPA 8270E/SIM	11-14-20	11-16-20	
Fluoranthene	**ND**	0.0077	EPA 8270E/SIM	11-14-20	11-16-20	
Pyrene	**ND**	0.0077	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]anthracene	**ND**	0.0077	EPA 8270E/SIM	11-14-20	11-16-20	
Chrysene	**ND**	0.0077	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[b]fluoranthene	**ND**	0.0077	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.0077	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]pyrene	**ND**	0.0077	EPA 8270E/SIM	11-14-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0077	EPA 8270E/SIM	11-14-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0077	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.0077	EPA 8270E/SIM	11-14-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*85*	*46 - 113*				
Pyrene-d10	*91*	*45 - 114*				
Terphenyl-d14	*88*	*49 - 121*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B3-7**					
Laboratory ID:	11-099-05					
Naphthalene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
2-Methylnaphthalene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
1-Methylnaphthalene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthylene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Fluorene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Phenanthrene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Anthracene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Pyrene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]anthracene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Chrysene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[b]fluoranthene	**0.013**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]pyrene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*73*	*46 - 113*				
Pyrene-d10	*83*	*45 - 114*				
Terphenyl-d14	*79*	*49 - 121*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B3-10**					
Laboratory ID:	11-099-06					
Naphthalene	**0.083**	0.016	EPA 8270E/SIM	11-14-20	11-16-20	
2-Methylnaphthalene	**0.030**	0.016	EPA 8270E/SIM	11-14-20	11-16-20	
1-Methylnaphthalene	**0.019**	0.016	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthylene	**ND**	0.016	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthene	**0.021**	0.016	EPA 8270E/SIM	11-14-20	11-16-20	
Fluorene	**0.021**	0.016	EPA 8270E/SIM	11-14-20	11-16-20	
Phenanthrene	**0.063**	0.016	EPA 8270E/SIM	11-14-20	11-16-20	
Anthracene	**ND**	0.016	EPA 8270E/SIM	11-14-20	11-16-20	
Fluoranthene	**0.053**	0.016	EPA 8270E/SIM	11-14-20	11-16-20	
Pyrene	**0.053**	0.016	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]anthracene	**ND**	0.016	EPA 8270E/SIM	11-14-20	11-16-20	
Chrysene	**0.027**	0.016	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[b]fluoranthene	**0.022**	0.016	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.016	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]pyrene	**0.018**	0.016	EPA 8270E/SIM	11-14-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.016	EPA 8270E/SIM	11-14-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.016	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.016	EPA 8270E/SIM	11-14-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*73*	*46 - 113*				
Pyrene-d10	*79*	*45 - 114*				
Terphenyl-d14	*77*	*49 - 121*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B3-7a**					
Laboratory ID:	11-099-07					
Naphthalene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
2-Methylnaphthalene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
1-Methylnaphthalene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthylene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Fluorene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Phenanthrene	**0.013**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Anthracene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Pyrene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]anthracene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Chrysene	**0.011**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]pyrene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270E/SIM	11-14-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*78*	*46 - 113*				
Pyrene-d10	*86*	*45 - 114*				
Terphenyl-d14	*81*	*49 - 121*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B3-15**					
Laboratory ID:	11-099-08					
Naphthalene	**ND**	0.0075	EPA 8270E/SIM	11-14-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0075	EPA 8270E/SIM	11-14-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0075	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthylene	**ND**	0.0075	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthene	**ND**	0.0075	EPA 8270E/SIM	11-14-20	11-16-20	
Fluorene	**ND**	0.0075	EPA 8270E/SIM	11-14-20	11-16-20	
Phenanthrene	**ND**	0.0075	EPA 8270E/SIM	11-14-20	11-16-20	
Anthracene	**ND**	0.0075	EPA 8270E/SIM	11-14-20	11-16-20	
Fluoranthene	**ND**	0.0075	EPA 8270E/SIM	11-14-20	11-16-20	
Pyrene	**ND**	0.0075	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]anthracene	**ND**	0.0075	EPA 8270E/SIM	11-14-20	11-16-20	
Chrysene	**ND**	0.0075	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[b]fluoranthene	**ND**	0.0075	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.0075	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]pyrene	**ND**	0.0075	EPA 8270E/SIM	11-14-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0075	EPA 8270E/SIM	11-14-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0075	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.0075	EPA 8270E/SIM	11-14-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*84*	*46 - 113*				
Pyrene-d10	*88*	*45 - 114*				
Terphenyl-d14	*87*	*49 - 121*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B3-15a**					
Laboratory ID:	11-099-09					
Naphthalene	**ND**	0.0076	EPA 8270E/SIM	11-14-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0076	EPA 8270E/SIM	11-14-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0076	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthylene	**ND**	0.0076	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthene	**ND**	0.0076	EPA 8270E/SIM	11-14-20	11-16-20	
Fluorene	**ND**	0.0076	EPA 8270E/SIM	11-14-20	11-16-20	
Phenanthrene	**ND**	0.0076	EPA 8270E/SIM	11-14-20	11-16-20	
Anthracene	**ND**	0.0076	EPA 8270E/SIM	11-14-20	11-16-20	
Fluoranthene	**ND**	0.0076	EPA 8270E/SIM	11-14-20	11-16-20	
Pyrene	**ND**	0.0076	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]anthracene	**ND**	0.0076	EPA 8270E/SIM	11-14-20	11-16-20	
Chrysene	**ND**	0.0076	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[b]fluoranthene	**ND**	0.0076	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.0076	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]pyrene	**ND**	0.0076	EPA 8270E/SIM	11-14-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0076	EPA 8270E/SIM	11-14-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0076	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.0076	EPA 8270E/SIM	11-14-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*89*	*46 - 113*				
Pyrene-d10	*97*	*45 - 114*				
Terphenyl-d14	*95*	*49 - 121*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B9-7**					
Laboratory ID:	11-099-10					
Naphthalene	**ND**	0.0085	EPA 8270E/SIM	11-14-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0085	EPA 8270E/SIM	11-14-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0085	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthylene	**ND**	0.0085	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthene	**ND**	0.0085	EPA 8270E/SIM	11-14-20	11-16-20	
Fluorene	**ND**	0.0085	EPA 8270E/SIM	11-14-20	11-16-20	
Phenanthrene	**0.014**	0.0085	EPA 8270E/SIM	11-14-20	11-16-20	
Anthracene	**ND**	0.0085	EPA 8270E/SIM	11-14-20	11-16-20	
Fluoranthene	**ND**	0.0085	EPA 8270E/SIM	11-14-20	11-16-20	
Pyrene	**0.034**	0.0085	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]anthracene	**ND**	0.0085	EPA 8270E/SIM	11-14-20	11-16-20	
Chrysene	**ND**	0.0085	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[b]fluoranthene	**ND**	0.0085	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.0085	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]pyrene	**ND**	0.0085	EPA 8270E/SIM	11-14-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0085	EPA 8270E/SIM	11-14-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0085	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.0085	EPA 8270E/SIM	11-14-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*60*	*46 - 113*				
Pyrene-d10	*70*	*45 - 114*				
Terphenyl-d14	*77*	*49 - 121*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B9-15**					
Laboratory ID:	11-099-11					
Naphthalene	**ND**	0.0080	EPA 8270E/SIM	11-14-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0080	EPA 8270E/SIM	11-14-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0080	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthylene	**ND**	0.0080	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthene	**ND**	0.0080	EPA 8270E/SIM	11-14-20	11-16-20	
Fluorene	**ND**	0.0080	EPA 8270E/SIM	11-14-20	11-16-20	
Phenanthrene	**ND**	0.0080	EPA 8270E/SIM	11-14-20	11-16-20	
Anthracene	**ND**	0.0080	EPA 8270E/SIM	11-14-20	11-16-20	
Fluoranthene	**ND**	0.0080	EPA 8270E/SIM	11-14-20	11-16-20	
Pyrene	**ND**	0.0080	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]anthracene	**ND**	0.0080	EPA 8270E/SIM	11-14-20	11-16-20	
Chrysene	**ND**	0.0080	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[b]fluoranthene	**ND**	0.0080	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.0080	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]pyrene	**ND**	0.0080	EPA 8270E/SIM	11-14-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0080	EPA 8270E/SIM	11-14-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0080	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.0080	EPA 8270E/SIM	11-14-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*84*	*46 - 113*				
Pyrene-d10	*88*	*45 - 114*				
Terphenyl-d14	*86*	*49 - 121*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B10-7**					
Laboratory ID:	11-099-12					
Naphthalene	**ND**	0.0081	EPA 8270E/SIM	11-14-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0081	EPA 8270E/SIM	11-14-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0081	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthylene	**ND**	0.0081	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthene	**ND**	0.0081	EPA 8270E/SIM	11-14-20	11-16-20	
Fluorene	**ND**	0.0081	EPA 8270E/SIM	11-14-20	11-16-20	
Phenanthrene	**ND**	0.0081	EPA 8270E/SIM	11-14-20	11-16-20	
Anthracene	**ND**	0.0081	EPA 8270E/SIM	11-14-20	11-16-20	
Fluoranthene	**ND**	0.0081	EPA 8270E/SIM	11-14-20	11-16-20	
Pyrene	**ND**	0.0081	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]anthracene	**ND**	0.0081	EPA 8270E/SIM	11-14-20	11-16-20	
Chrysene	**ND**	0.0081	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[b]fluoranthene	**ND**	0.0081	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.0081	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]pyrene	**ND**	0.0081	EPA 8270E/SIM	11-14-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0081	EPA 8270E/SIM	11-14-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0081	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.0081	EPA 8270E/SIM	11-14-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*84*	*46 - 113*				
Pyrene-d10	*94*	*45 - 114*				
Terphenyl-d14	*89*	*49 - 121*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B10-15**					
Laboratory ID:	11-099-13					
Naphthalene	**ND**	0.0072	EPA 8270E/SIM	11-14-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0072	EPA 8270E/SIM	11-14-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0072	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthylene	**ND**	0.0072	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthene	**ND**	0.0072	EPA 8270E/SIM	11-14-20	11-16-20	
Fluorene	**ND**	0.0072	EPA 8270E/SIM	11-14-20	11-16-20	
Phenanthrene	**ND**	0.0072	EPA 8270E/SIM	11-14-20	11-16-20	
Anthracene	**ND**	0.0072	EPA 8270E/SIM	11-14-20	11-16-20	
Fluoranthene	**ND**	0.0072	EPA 8270E/SIM	11-14-20	11-16-20	
Pyrene	**ND**	0.0072	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]anthracene	**ND**	0.0072	EPA 8270E/SIM	11-14-20	11-16-20	
Chrysene	**ND**	0.0072	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[b]fluoranthene	**ND**	0.0072	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.0072	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]pyrene	**ND**	0.0072	EPA 8270E/SIM	11-14-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0072	EPA 8270E/SIM	11-14-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0072	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.0072	EPA 8270E/SIM	11-14-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*80*	*46 - 113*				
Pyrene-d10	*96*	*45 - 114*				
Terphenyl-d14	*89*	*49 - 121*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B4-7**					
Laboratory ID:	11-099-16					
Naphthalene	**ND**	0.0086	EPA 8270E/SIM	11-14-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0086	EPA 8270E/SIM	11-14-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0086	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthylene	**ND**	0.0086	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthene	**ND**	0.0086	EPA 8270E/SIM	11-14-20	11-16-20	
Fluorene	**ND**	0.0086	EPA 8270E/SIM	11-14-20	11-16-20	
Phenanthrene	**ND**	0.0086	EPA 8270E/SIM	11-14-20	11-16-20	
Anthracene	**ND**	0.0086	EPA 8270E/SIM	11-14-20	11-16-20	
Fluoranthene	**ND**	0.0086	EPA 8270E/SIM	11-14-20	11-16-20	
Pyrene	**ND**	0.0086	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]anthracene	**ND**	0.0086	EPA 8270E/SIM	11-14-20	11-16-20	
Chrysene	**ND**	0.0086	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[b]fluoranthene	**ND**	0.0086	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.0086	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]pyrene	**ND**	0.0086	EPA 8270E/SIM	11-14-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0086	EPA 8270E/SIM	11-14-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0086	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.0086	EPA 8270E/SIM	11-14-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*79*	*46 - 113*				
Pyrene-d10	*84*	*45 - 114*				
Terphenyl-d14	*84*	*49 - 121*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B4-15**					
Laboratory ID:	11-099-17					
Naphthalene	**ND**	0.0083	EPA 8270E/SIM	11-14-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0083	EPA 8270E/SIM	11-14-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0083	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthylene	**ND**	0.0083	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthene	**ND**	0.0083	EPA 8270E/SIM	11-14-20	11-16-20	
Fluorene	**ND**	0.0083	EPA 8270E/SIM	11-14-20	11-16-20	
Phenanthrene	**ND**	0.0083	EPA 8270E/SIM	11-14-20	11-16-20	
Anthracene	**ND**	0.0083	EPA 8270E/SIM	11-14-20	11-16-20	
Fluoranthene	**ND**	0.0083	EPA 8270E/SIM	11-14-20	11-16-20	
Pyrene	**ND**	0.0083	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]anthracene	**ND**	0.0083	EPA 8270E/SIM	11-14-20	11-16-20	
Chrysene	**ND**	0.0083	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[b]fluoranthene	**ND**	0.0083	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.0083	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]pyrene	**ND**	0.0083	EPA 8270E/SIM	11-14-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0083	EPA 8270E/SIM	11-14-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0083	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.0083	EPA 8270E/SIM	11-14-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*75*	*46 - 113*				
Pyrene-d10	*90*	*45 - 114*				
Terphenyl-d14	*84*	*49 - 121*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

PAHs EPA 8270E/SIM
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1114S1					
Naphthalene	**ND**	0.0067	EPA 8270E/SIM	11-14-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270E/SIM	11-14-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthylene	**ND**	0.0067	EPA 8270E/SIM	11-14-20	11-16-20	
Acenaphthene	**ND**	0.0067	EPA 8270E/SIM	11-14-20	11-16-20	
Fluorene	**ND**	0.0067	EPA 8270E/SIM	11-14-20	11-16-20	
Phenanthrene	**ND**	0.0067	EPA 8270E/SIM	11-14-20	11-16-20	
Anthracene	**ND**	0.0067	EPA 8270E/SIM	11-14-20	11-16-20	
Fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-14-20	11-16-20	
Pyrene	**ND**	0.0067	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270E/SIM	11-14-20	11-16-20	
Chrysene	**ND**	0.0067	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270E/SIM	11-14-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270E/SIM	11-14-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270E/SIM	11-14-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270E/SIM	11-14-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*93*	*46 - 113*				
Pyrene-d10	*101*	*45 - 114*				
Terphenyl-d14	*95*	*49 - 121*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

PAHs EPA 8270E/SIM
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:	11-109-21										
	MS	MSD	MS	MSD		MS	MSD				
Naphthalene	**0.0746**	**0.0755**	0.0833	0.0833	ND	90	91	51 - 115	1	26	
Acenaphthylene	**0.0799**	**0.0750**	0.0833	0.0833	ND	96	90	53 - 121	6	24	
Acenaphthene	**0.0782**	**0.0731**	0.0833	0.0833	ND	94	88	52 - 121	7	25	
Fluorene	**0.0801**	**0.0791**	0.0833	0.0833	ND	96	95	58 - 127	1	23	
Phenanthrene	**0.0850**	**0.0810**	0.0833	0.0833	ND	102	97	46 - 129	5	28	
Anthracene	**0.0828**	**0.0824**	0.0833	0.0833	ND	99	99	57 - 124	0	21	
Fluoranthene	**0.0837**	**0.0839**	0.0833	0.0833	ND	100	101	46 - 136	0	29	
Pyrene	**0.0884**	**0.0850**	0.0833	0.0833	ND	106	102	41 - 136	4	32	
Benzo[a]anthracene	**0.0773**	**0.0776**	0.0833	0.0833	ND	93	93	56 - 136	0	25	
Chrysene	**0.0799**	**0.0810**	0.0833	0.0833	ND	96	97	49 - 130	1	22	
Benzo[b]fluoranthene	**0.0814**	**0.0839**	0.0833	0.0833	ND	98	101	51 - 135	3	26	
Benzo(j,k)fluoranthene	**0.0785**	**0.0802**	0.0833	0.0833	ND	94	96	56 - 124	2	23	
Benzo[a]pyrene	**0.0808**	**0.0834**	0.0833	0.0833	ND	97	100	54 - 133	3	26	
Indeno(1,2,3-c,d)pyrene	**0.0762**	**0.0784**	0.0833	0.0833	ND	91	94	52 - 134	3	20	
Dibenz[a,h]anthracene	**0.0747**	**0.0782**	0.0833	0.0833	ND	90	94	58 - 127	5	17	
Benzo[g,h,i]perylene	**0.0751**	**0.0780**	0.0833	0.0833	ND	90	94	54 - 129	4	21	
Surrogate:											
2-Fluorobiphenyl						*90*	*85*	*46 - 113*			
Pyrene-d10						*91*	*98*	*45 - 114*			
Terphenyl-d14						*86*	*90*	*49 - 121*			

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

TOTAL METALS
EPA 6010D/7471B

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B8-7**					
Laboratory ID:	11-099-03					
Arsenic	**ND**	11	EPA 6010D	11-12-20	11-12-20	
Barium	**35**	2.7	EPA 6010D	11-12-20	11-12-20	
Cadmium	**ND**	0.53	EPA 6010D	11-12-20	11-12-20	
Chromium	**14**	0.53	EPA 6010D	11-12-20	11-12-20	
Lead	**ND**	5.3	EPA 6010D	11-12-20	11-12-20	
Mercury	**ND**	0.27	EPA 7471B	11-13-20	11-13-20	
Selenium	**ND**	11	EPA 6010D	11-12-20	11-12-20	
Silver	**ND**	1.1	EPA 6010D	11-12-20	11-12-20	
Client ID:	**B8-15**					
Laboratory ID:	11-099-04					
Arsenic	**ND**	12	EPA 6010D	11-12-20	11-12-20	
Barium	**28**	2.9	EPA 6010D	11-12-20	11-12-20	
Cadmium	**ND**	0.58	EPA 6010D	11-12-20	11-12-20	
Chromium	**13**	0.58	EPA 6010D	11-12-20	11-12-20	
Lead	**ND**	5.8	EPA 6010D	11-12-20	11-12-20	
Mercury	**ND**	0.29	EPA 7471B	11-13-20	11-13-20	
Selenium	**ND**	12	EPA 6010D	11-12-20	11-12-20	
Silver	**ND**	1.2	EPA 6010D	11-12-20	11-12-20	
Client ID:	**B3-7**					
Laboratory ID:	11-099-05					
Arsenic	**ND**	15	EPA 6010D	11-12-20	11-12-20	
Barium	**96**	3.8	EPA 6010D	11-12-20	11-12-20	
Cadmium	**ND**	0.77	EPA 6010D	11-12-20	11-12-20	
Chromium	**26**	0.77	EPA 6010D	11-12-20	11-12-20	
Lead	**10**	7.7	EPA 6010D	11-12-20	11-12-20	
Mercury	**ND**	0.38	EPA 7471B	11-13-20	11-13-20	
Selenium	**ND**	15	EPA 6010D	11-12-20	11-12-20	
Silver	**ND**	1.5	EPA 6010D	11-12-20	11-12-20	

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

TOTAL METALS
EPA 6010D/7471B

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B3-10**					
Laboratory ID:	11-099-06					
Arsenic	**ND**	25	EPA 6010D	11-12-20	11-12-20	
Barium	**140**	6.2	EPA 6010D	11-12-20	11-12-20	
Cadmium	**ND**	1.2	EPA 6010D	11-12-20	11-12-20	
Chromium	**30**	1.2	EPA 6010D	11-12-20	11-12-20	
Lead	**100**	12	EPA 6010D	11-12-20	11-12-20	
Mercury	**ND**	0.62	EPA 7471B	11-13-20	11-13-20	
Selenium	**ND**	25	EPA 6010D	11-12-20	11-12-20	
Silver	**ND**	2.5	EPA 6010D	11-12-20	11-12-20	
Client ID:	**B3-7a**					
Laboratory ID:	11-099-07					
Arsenic	**ND**	15	EPA 6010D	11-12-20	11-12-20	
Barium	**61**	3.8	EPA 6010D	11-12-20	11-12-20	
Cadmium	**ND**	0.77	EPA 6010D	11-12-20	11-12-20	
Chromium	**19**	0.77	EPA 6010D	11-12-20	11-12-20	
Lead	**26**	7.7	EPA 6010D	11-12-20	11-12-20	
Mercury	**ND**	0.38	EPA 7471B	11-13-20	11-13-20	
Selenium	**ND**	15	EPA 6010D	11-12-20	11-12-20	
Silver	**ND**	1.5	EPA 6010D	11-12-20	11-12-20	
Client ID:	**B3-15**					
Laboratory ID:	11-099-08					
Arsenic	**ND**	11	EPA 6010D	11-12-20	11-12-20	
Barium	**20**	2.8	EPA 6010D	11-12-20	11-12-20	
Cadmium	**ND**	0.56	EPA 6010D	11-12-20	11-12-20	
Chromium	**7.3**	0.56	EPA 6010D	11-12-20	11-12-20	
Lead	**ND**	5.6	EPA 6010D	11-12-20	11-12-20	
Mercury	**ND**	0.28	EPA 7471B	11-13-20	11-13-20	
Selenium	**ND**	11	EPA 6010D	11-12-20	11-12-20	
Silver	**ND**	1.1	EPA 6010D	11-12-20	11-12-20	

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

TOTAL METALS
EPA 6010D/7471B

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B3-15a**					
Laboratory ID:	11-099-09					
Arsenic	**ND**	11	EPA 6010D	11-12-20	11-12-20	
Barium	**27**	2.8	EPA 6010D	11-12-20	11-12-20	
Cadmium	**ND**	0.57	EPA 6010D	11-12-20	11-12-20	
Chromium	**12**	0.57	EPA 6010D	11-12-20	11-12-20	
Lead	**ND**	5.7	EPA 6010D	11-12-20	11-12-20	
Mercury	**ND**	0.28	EPA 7471B	11-13-20	11-13-20	
Selenium	**ND**	11	EPA 6010D	11-12-20	11-12-20	
Silver	**ND**	1.1	EPA 6010D	11-12-20	11-12-20	
Client ID:	**B9-7**					
Laboratory ID:	11-099-10					
Arsenic	**ND**	13	EPA 6010D	11-12-20	11-12-20	
Barium	**63**	3.2	EPA 6010D	11-12-20	11-12-20	
Cadmium	**ND**	0.64	EPA 6010D	11-12-20	11-12-20	
Chromium	**16**	0.64	EPA 6010D	11-12-20	11-12-20	
Lead	**6.5**	6.4	EPA 6010D	11-12-20	11-12-20	
Mercury	**ND**	0.32	EPA 7471B	11-13-20	11-13-20	
Selenium	**ND**	13	EPA 6010D	11-12-20	11-12-20	
Silver	**ND**	1.3	EPA 6010D	11-12-20	11-12-20	
Client ID:	**B9-15**					
Laboratory ID:	11-099-11					
Arsenic	**ND**	12	EPA 6010D	11-12-20	11-12-20	
Barium	**74**	3.0	EPA 6010D	11-12-20	11-12-20	
Cadmium	**ND**	0.60	EPA 6010D	11-12-20	11-12-20	
Chromium	**24**	0.60	EPA 6010D	11-12-20	11-12-20	
Lead	**ND**	6.0	EPA 6010D	11-12-20	11-12-20	
Mercury	**ND**	0.30	EPA 7471B	11-13-20	11-13-20	
Selenium	**ND**	12	EPA 6010D	11-12-20	11-12-20	
Silver	**ND**	1.2	EPA 6010D	11-12-20	11-12-20	

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

TOTAL METALS
EPA 6010D/7471B

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B10-7**					
Laboratory ID:	11-099-12					
Arsenic	**ND**	12	EPA 6010D	11-12-20	11-12-20	
Barium	**67**	3.0	EPA 6010D	11-12-20	11-12-20	
Cadmium	**ND**	0.61	EPA 6010D	11-12-20	11-12-20	
Chromium	**19**	0.61	EPA 6010D	11-12-20	11-12-20	
Lead	**ND**	6.1	EPA 6010D	11-12-20	11-12-20	
Mercury	**ND**	0.30	EPA 7471B	11-13-20	11-13-20	
Selenium	**ND**	12	EPA 6010D	11-12-20	11-12-20	
Silver	**ND**	1.2	EPA 6010D	11-12-20	11-12-20	
Client ID:	**B10-15**					
Laboratory ID:	11-099-13					
Arsenic	**ND**	11	EPA 6010D	11-12-20	11-12-20	
Barium	**58**	2.7	EPA 6010D	11-12-20	11-12-20	
Cadmium	**ND**	0.54	EPA 6010D	11-12-20	11-12-20	
Chromium	**14**	0.54	EPA 6010D	11-12-20	11-12-20	
Lead	**ND**	5.4	EPA 6010D	11-12-20	11-12-20	
Mercury	**ND**	0.27	EPA 7471B	11-13-20	11-13-20	
Selenium	**ND**	11	EPA 6010D	11-12-20	11-12-20	
Silver	**ND**	1.1	EPA 6010D	11-12-20	11-12-20	
Client ID:	**B11-7**					
Laboratory ID:	11-099-14					
Arsenic	**ND**	11	EPA 6010D	11-12-20	11-12-20	
Barium	**58**	2.9	EPA 6010D	11-12-20	11-12-20	
Cadmium	**ND**	0.57	EPA 6010D	11-12-20	11-12-20	
Chromium	**23**	0.57	EPA 6010D	11-12-20	11-12-20	
Copper	**19**	1.1	EPA 6010D	11-12-20	11-12-20	
Lead	**ND**	5.7	EPA 6010D	11-12-20	11-12-20	
Mercury	**ND**	0.29	EPA 7471B	11-13-20	11-13-20	
Selenium	**ND**	11	EPA 6010D	11-12-20	11-12-20	
Silver	**ND**	1.1	EPA 6010D	11-12-20	11-12-20	

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Project: 1903-00129-RI

TOTAL METALS
EPA 6010D/7471B

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B11-15**					
Laboratory ID:	11-099-15					
Arsenic	**ND**	12	EPA 6010D	11-12-20	11-12-20	
Barium	**36**	3.0	EPA 6010D	11-12-20	11-12-20	
Cadmium	**ND**	0.59	EPA 6010D	11-12-20	11-12-20	
Chromium	**22**	0.59	EPA 6010D	11-12-20	11-12-20	
Copper	**9.2**	1.2	EPA 6010D	11-12-20	11-12-20	
Lead	**ND**	5.9	EPA 6010D	11-12-20	11-12-20	
Mercury	**ND**	0.30	EPA 7471B	11-13-20	11-13-20	
Selenium	**ND**	12	EPA 6010D	11-12-20	11-12-20	
Silver	**ND**	1.2	EPA 6010D	11-12-20	11-12-20	
Client ID:	**B4-7**					
Laboratory ID:	11-099-16					
Arsenic	**ND**	13	EPA 6010D	11-12-20	11-12-20	
Barium	**33**	3.2	EPA 6010D	11-12-20	11-12-20	
Cadmium	**ND**	0.65	EPA 6010D	11-12-20	11-12-20	
Chromium	**20**	0.65	EPA 6010D	11-12-20	11-12-20	
Lead	**ND**	6.5	EPA 6010D	11-12-20	11-12-20	
Mercury	**ND**	0.32	EPA 7471B	11-13-20	11-13-20	
Selenium	**ND**	13	EPA 6010D	11-12-20	11-12-20	
Silver	**ND**	1.3	EPA 6010D	11-12-20	11-12-20	
Client ID:	**B4-15**					
Laboratory ID:	11-099-17					
Arsenic	**ND**	13	EPA 6010D	11-12-20	11-12-20	
Barium	**36**	3.1	EPA 6010D	11-12-20	11-12-20	
Cadmium	**ND**	0.63	EPA 6010D	11-12-20	11-12-20	
Chromium	**22**	0.63	EPA 6010D	11-12-20	11-12-20	
Lead	**ND**	6.3	EPA 6010D	11-12-20	11-12-20	
Mercury	**ND**	0.31	EPA 7471B	11-13-20	11-13-20	
Selenium	**ND**	13	EPA 6010D	11-12-20	11-12-20	
Silver	**ND**	1.3	EPA 6010D	11-12-20	11-12-20	

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

TOTAL METALS
EPA 6010D/7471B
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1112SM2					
Arsenic	**ND**	10	EPA 6010D	11-12-20	11-12-20	
Barium	**ND**	2.5	EPA 6010D	11-12-20	11-12-20	
Cadmium	**ND**	0.50	EPA 6010D	11-12-20	11-12-20	
Chromium	**ND**	0.50	EPA 6010D	11-12-20	11-12-20	
Copper	**ND**	1.0	EPA 6010D	11-12-20	11-12-20	
Lead	**ND**	5.0	EPA 6010D	11-12-20	11-12-20	
Selenium	**ND**	10	EPA 6010D	11-12-20	11-12-20	
Silver	**ND**	1.0	EPA 6010D	11-12-20	11-12-20	
Laboratory ID:	MB1113S1					
Mercury	**ND**	0.25	EPA 7471B	11-13-20	11-13-20	

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

TOTAL METALS
EPA 6010D/7471B
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-099-13										
	ORIG	DUP									
Arsenic	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Barium	**54.2**	**56.5**	NA	NA		NA		NA	4	20	
Cadmium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Chromium	**13.3**	**15.3**	NA	NA		NA		NA	14	20	
Copper	**13.5**	**13.3**	NA	NA		NA		NA	1	20	
Lead	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Selenium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Silver	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Laboratory ID:	11-098-01										
Mercury	**ND**	**ND**	NA	NA		NA		NA	NA	20	
MATRIX SPIKES											
Laboratory ID:	11-099-13										
	MS	MSD	MS	MSD		MS	MSD				
Arsenic	**96.5**	**96.4**	100	100	ND	**97**	**96**	75-125	0	20	
Barium	**143**	**136**	100	100	54.2	**89**	**81**	75-125	6	20	
Cadmium	**44.0**	**43.9**	50.0	50.0	ND	**88**	**88**	75-125	0	20	
Chromium	**106**	**105**	100	100	13.3	**92**	**92**	75-125	1	20	
Copper	**58.0**	**57.3**	50.0	50.0	13.5	**89**	**88**	75-125	1	20	
Lead	**242**	**242**	250	250	ND	**97**	**97**	75-125	0	20	
Selenium	**90.2**	**88.9**	100	100	ND	**90**	**89**	75-125	1	20	
Silver	**20.8**	**21.1**	25.0	25.0	ND	**83**	**84**	75-125	1	20	
Laboratory ID:	11-098-01										
Mercury	**0.455**	**0.459**	0.500	0.500	0.0200	**87**	**88**	80-120	1	20	

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B11-7**					
Laboratory ID:	11-099-14					
Naphthalene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-17-20	
2-Methylnaphthalene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-17-20	
1-Methylnaphthalene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthylene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-17-20	
Fluorene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-17-20	
Pentachlorophenol	**ND**	0.19	EPA 8270E	11-17-20	11-18-20	
Phenanthrene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-17-20	
Anthracene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-17-20	
Fluoranthene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-17-20	
Pyrene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]anthracene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-17-20	
Chrysene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[b]fluoranthene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo(j,k)fluoranthene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]pyrene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-17-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-17-20	
Dibenz[a,h]anthracene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[g,h,i]perylene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*57*	*22 - 109*				
Phenol-d6	*62*	*36 - 110*				
Nitrobenzene-d5	*53*	*31 - 109*				
2-Fluorobiphenyl	*66*	*45 - 107*				
2,4,6-Tribromophenol	*76*	*43 - 124*				
Terphenyl-d14	*74*	*52 - 118*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B11-15**					
Laboratory ID:	11-099-15					
Naphthalene	**ND**	0.0079	EPA 8270E/SIM	11-17-20	11-17-20	
2-Methylnaphthalene	**ND**	0.0079	EPA 8270E/SIM	11-17-20	11-17-20	
1-Methylnaphthalene	**ND**	0.0079	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthylene	**ND**	0.0079	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthene	**ND**	0.0079	EPA 8270E/SIM	11-17-20	11-17-20	
Fluorene	**ND**	0.0079	EPA 8270E/SIM	11-17-20	11-17-20	
Pentachlorophenol	**ND**	0.20	EPA 8270E	11-17-20	11-18-20	
Phenanthrene	**ND**	0.0079	EPA 8270E/SIM	11-17-20	11-17-20	
Anthracene	**ND**	0.0079	EPA 8270E/SIM	11-17-20	11-17-20	
Fluoranthene	**ND**	0.0079	EPA 8270E/SIM	11-17-20	11-17-20	
Pyrene	**ND**	0.0079	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]anthracene	**ND**	0.0079	EPA 8270E/SIM	11-17-20	11-17-20	
Chrysene	**ND**	0.0079	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[b]fluoranthene	**ND**	0.0079	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo(j,k)fluoranthene	**ND**	0.0079	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]pyrene	**ND**	0.0079	EPA 8270E/SIM	11-17-20	11-17-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.0079	EPA 8270E/SIM	11-17-20	11-17-20	
Dibenz[a,h]anthracene	**ND**	0.0079	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[g,h,i]perylene	**ND**	0.0079	EPA 8270E/SIM	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*77*	*22 - 109*				
Phenol-d6	*77*	*36 - 110*				
Nitrobenzene-d5	*77*	*31 - 109*				
2-Fluorobiphenyl	*80*	*45 - 107*				
2,4,6-Tribromophenol	*86*	*43 - 124*				
Terphenyl-d14	*83*	*52 - 118*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1117S1					
Naphthalene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthylene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Fluorene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Pentachlorophenol	**ND**	0.17	EPA 8270E	11-17-20	11-18-20	
Phenanthrene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Anthracene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Pyrene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Chrysene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*67*	*22 - 109*				
Phenol-d6	*71*	*36 - 110*				
Nitrobenzene-d5	*63*	*31 - 109*				
2-Fluorobiphenyl	*71*	*45 - 107*				
2,4,6-Tribromophenol	*81*	*43 - 124*				
Terphenyl-d14	*77*	*52 - 118*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1117S1									
	SB	SBD	SB	SBD	SB	SBD				
Phenol	**1.04**	**0.950**	1.33	1.33	78	71	47 - 104	9	30	
2-Chlorophenol	**1.15**	**1.04**	1.33	1.33	86	78	45 - 108	10	31	
1,4-Dichlorobenzene	**0.532**	**0.472**	0.667	0.667	80	71	41 - 105	12	32	
n-Nitroso-di-n-propylamine	**0.540**	**0.493**	0.667	0.667	81	74	47 - 103	9	28	
1,2,4-Trichlorobenzene	**0.576**	**0.521**	0.667	0.667	86	78	42 - 111	10	32	
4-Chloro-3-methylphenol	**1.22**	**1.15**	1.33	1.33	92	86	61 - 108	6	25	
Acenaphthene	**0.539**	**0.507**	0.667	0.667	81	76	54 - 102	6	23	
4-Nitrophenol	**1.20**	**1.11**	1.33	1.33	90	83	53 - 122	8	24	
2,4-Dinitrotoluene	**0.582**	**0.520**	0.667	0.667	87	78	57 - 107	11	22	
Pentachlorophenol	**1.01**	**1.01**	1.33	1.33	76	76	44 - 132	0	23	
Pyrene	**0.583**	**0.556**	0.667	0.667	87	83	58 - 111	5	21	
Surrogate:										
2-Fluorophenol					*83*	*72*	*22 - 109*			
Phenol-d6					*81*	*74*	*36 - 110*			
Nitrobenzene-d5					*77*	*71*	*31 - 109*			
2-Fluorobiphenyl					*81*	*74*	*45 - 107*			
2,4,6-Tribromophenol					*87*	*85*	*43 - 124*			
Terphenyl-d14					*78*	*76*	*52 - 118*			

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

VOLATILE ORGANICS EPA 8260D
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B3-7**					
Laboratory ID:	11-099-05					
Dichlorodifluoromethane	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
Chloromethane	ND	0.011	EPA 8260D	11-18-20	11-18-20	
Vinyl Chloride	ND	0.0021	EPA 8260D	11-18-20	11-18-20	
Bromomethane	ND	0.0075	EPA 8260D	11-18-20	11-18-20	
Chloroethane	ND	0.0075	EPA 8260D	11-18-20	11-18-20	
Trichlorofluoromethane	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethene	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
Iodomethane	ND	0.0075	EPA 8260D	11-18-20	11-18-20	
Methylene Chloride	ND	0.0096	EPA 8260D	11-18-20	11-18-20	
(trans) 1,2-Dichloroethene	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
Methyl t-Butyl Ether	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethane	ND	0.0020	EPA 8260D	11-18-20	11-18-20	
2,2-Dichloropropane	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
(cis) 1,2-Dichloroethene	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
Bromochloromethane	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
Chloroform	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
1,1,1-Trichloroethane	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
Carbon Tetrachloride	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloropropene	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloroethane	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
Trichloroethene	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloropropane	ND	0.0020	EPA 8260D	11-18-20	11-18-20	
Dibromomethane	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
Bromodichloromethane	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
2-Chloroethyl Vinyl Ether	ND	0.0075	EPA 8260D	11-18-20	11-18-20	
(cis) 1,3-Dichloropropene	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
(trans) 1,3-Dichloropropene	ND	0.0015	EPA 8260D	11-18-20	11-18-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B3-7**					
Laboratory ID:	11-099-05					
1,1,2-Trichloroethane	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
Tetrachloroethene	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
1,3-Dichloropropane	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
Dibromochloromethane	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
1,2-Dibromoethane	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
Chlorobenzene	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
1,1,1,2-Tetrachloroethane	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
Bromoform	ND	0.0075	EPA 8260D	11-18-20	11-18-20	
Bromobenzene	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
1,1,2,2-Tetrachloroethane	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
1,2,3-Trichloropropane	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
2-Chlorotoluene	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
4-Chlorotoluene	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
1,3-Dichlorobenzene	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
1,4-Dichlorobenzene	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
1,2-Dichlorobenzene	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
1,2-Dibromo-3-chloropropane	ND	0.0075	EPA 8260D	11-18-20	11-18-20	
1,2,4-Trichlorobenzene	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
Hexachlorobutadiene	ND	0.0075	EPA 8260D	11-18-20	11-18-20	
1,2,3-Trichlorobenzene	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*98*	*74-131*				
Toluene-d8	*94*	*78-128*				
4-Bromofluorobenzene	*81*	*71-130*				

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B3-10**					
Laboratory ID:	11-099-06					
Dichlorodifluoromethane	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
Chloromethane	ND	0.021	EPA 8260D	11-18-20	11-18-20	
Vinyl Chloride	ND	0.0039	EPA 8260D	11-18-20	11-18-20	
Bromomethane	ND	0.014	EPA 8260D	11-18-20	11-18-20	
Chloroethane	ND	0.014	EPA 8260D	11-18-20	11-18-20	
Trichlorofluoromethane	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethene	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
Iodomethane	ND	0.014	EPA 8260D	11-18-20	11-18-20	
Methylene Chloride	ND	0.018	EPA 8260D	11-18-20	11-18-20	
(trans) 1,2-Dichloroethene	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
Methyl t-Butyl Ether	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethane	ND	0.0036	EPA 8260D	11-18-20	11-18-20	
2,2-Dichloropropane	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
(cis) 1,2-Dichloroethene	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
Bromochloromethane	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
Chloroform	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
1,1,1-Trichloroethane	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
Carbon Tetrachloride	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloropropene	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloroethane	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
Trichloroethene	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloropropane	ND	0.0036	EPA 8260D	11-18-20	11-18-20	
Dibromomethane	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
Bromodichloromethane	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
2-Chloroethyl Vinyl Ether	ND	0.014	EPA 8260D	11-18-20	11-18-20	
(cis) 1,3-Dichloropropene	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
(trans) 1,3-Dichloropropene	ND	0.0028	EPA 8260D	11-18-20	11-18-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B3-10**					
Laboratory ID:	11-099-06					
1,1,2-Trichloroethane	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
Tetrachloroethene	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
1,3-Dichloropropane	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
Dibromochloromethane	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
1,2-Dibromoethane	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
Chlorobenzene	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
1,1,1,2-Tetrachloroethane	ND	0.0028	EPA 8260D	11-18-20	11-18-20	
Bromoform	ND	0.014	EPA 8260D	11-18-20	11-18-20	
Bromobenzene	ND	0.20	EPA 8260D	11-20-20	11-20-20	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260D	11-20-20	11-20-20	
1,2,3-Trichloropropane	ND	0.20	EPA 8260D	11-20-20	11-20-20	
2-Chlorotoluene	ND	0.20	EPA 8260D	11-20-20	11-20-20	
4-Chlorotoluene	ND	0.20	EPA 8260D	11-20-20	11-20-20	
1,3-Dichlorobenzene	ND	0.20	EPA 8260D	11-20-20	11-20-20	
1,4-Dichlorobenzene	ND	0.20	EPA 8260D	11-20-20	11-20-20	
1,2-Dichlorobenzene	ND	0.20	EPA 8260D	11-20-20	11-20-20	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260D	11-20-20	11-20-20	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260D	11-20-20	11-20-20	
Hexachlorobutadiene	ND	1.0	EPA 8260D	11-20-20	11-20-20	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260D	11-20-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*101*	*74-131*				
Toluene-d8	*90*	*78-128*				
4-Bromofluorobenzene	*76*	*71-130*				

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B3-7a**					
Laboratory ID:	11-099-07					
Dichlorodifluoromethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Chloromethane	ND	0.0096	EPA 8260D	11-18-20	11-18-20	
Vinyl Chloride	ND	0.0018	EPA 8260D	11-18-20	11-18-20	
Bromomethane	ND	0.0064	EPA 8260D	11-18-20	11-18-20	
Chloroethane	ND	0.0064	EPA 8260D	11-18-20	11-18-20	
Trichlorofluoromethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethene	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Iodomethane	ND	0.0064	EPA 8260D	11-18-20	11-18-20	
Methylene Chloride	ND	0.0082	EPA 8260D	11-18-20	11-18-20	
(trans) 1,2-Dichloroethene	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Methyl t-Butyl Ether	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethane	ND	0.0017	EPA 8260D	11-18-20	11-18-20	
2,2-Dichloropropane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
(cis) 1,2-Dichloroethene	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Bromochloromethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Chloroform	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
1,1,1-Trichloroethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Carbon Tetrachloride	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloropropene	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloroethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Trichloroethene	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloropropane	ND	0.0017	EPA 8260D	11-18-20	11-18-20	
Dibromomethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Bromodichloromethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
2-Chloroethyl Vinyl Ether	ND	0.0064	EPA 8260D	11-18-20	11-18-20	
(cis) 1,3-Dichloropropene	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
(trans) 1,3-Dichloropropene	ND	0.0013	EPA 8260D	11-18-20	11-18-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B3-7a**					
Laboratory ID:	11-099-07					
1,1,2-Trichloroethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Tetrachloroethene	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
1,3-Dichloropropane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Dibromochloromethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
1,2-Dibromoethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Chlorobenzene	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
1,1,1,2-Tetrachloroethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Bromoform	ND	0.0064	EPA 8260D	11-18-20	11-18-20	
Bromobenzene	ND	0.091	EPA 8260D	11-20-20	11-20-20	
1,1,2,2-Tetrachloroethane	ND	0.091	EPA 8260D	11-20-20	11-20-20	
1,2,3-Trichloropropane	ND	0.091	EPA 8260D	11-20-20	11-20-20	
2-Chlorotoluene	ND	0.091	EPA 8260D	11-20-20	11-20-20	
4-Chlorotoluene	ND	0.091	EPA 8260D	11-20-20	11-20-20	
1,3-Dichlorobenzene	ND	0.091	EPA 8260D	11-20-20	11-20-20	
1,4-Dichlorobenzene	ND	0.091	EPA 8260D	11-20-20	11-20-20	
1,2-Dichlorobenzene	ND	0.091	EPA 8260D	11-20-20	11-20-20	
1,2-Dibromo-3-chloropropane	ND	0.45	EPA 8260D	11-20-20	11-20-20	
1,2,4-Trichlorobenzene	ND	0.091	EPA 8260D	11-20-20	11-20-20	
Hexachlorobutadiene	ND	0.45	EPA 8260D	11-20-20	11-20-20	
1,2,3-Trichlorobenzene	ND	0.091	EPA 8260D	11-20-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*99*	*74-131*				
Toluene-d8	*93*	*78-128*				
4-Bromofluorobenzene	*78*	*71-130*				

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B9-7**					
Laboratory ID:	11-099-10					
Dichlorodifluoromethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Chloromethane	ND	0.010	EPA 8260D	11-18-20	11-18-20	
Vinyl Chloride	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
Bromomethane	ND	0.0067	EPA 8260D	11-18-20	11-18-20	
Chloroethane	ND	0.0067	EPA 8260D	11-18-20	11-18-20	
Trichlorofluoromethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethene	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Iodomethane	ND	0.0067	EPA 8260D	11-18-20	11-18-20	
Methylene Chloride	ND	0.0085	EPA 8260D	11-18-20	11-18-20	
(trans) 1,2-Dichloroethene	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Methyl t-Butyl Ether	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethane	ND	0.0017	EPA 8260D	11-18-20	11-18-20	
2,2-Dichloropropane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
(cis) 1,2-Dichloroethene	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Bromochloromethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Chloroform	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
1,1,1-Trichloroethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Carbon Tetrachloride	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloropropene	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloroethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Trichloroethene	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloropropane	ND	0.0017	EPA 8260D	11-18-20	11-18-20	
Dibromomethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Bromodichloromethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
2-Chloroethyl Vinyl Ether	ND	0.0067	EPA 8260D	11-18-20	11-18-20	
(cis) 1,3-Dichloropropene	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
(trans) 1,3-Dichloropropene	ND	0.0013	EPA 8260D	11-18-20	11-18-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B9-7**					
Laboratory ID:	11-099-10					
1,1,2-Trichloroethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Tetrachloroethene	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
1,3-Dichloropropane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Dibromochloromethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
1,2-Dibromoethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Chlorobenzene	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
1,1,1,2-Tetrachloroethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Bromoform	ND	0.0067	EPA 8260D	11-18-20	11-18-20	
Bromobenzene	ND	0.070	EPA 8260D	11-20-20	11-20-20	
1,1,2,2-Tetrachloroethane	ND	0.070	EPA 8260D	11-20-20	11-20-20	
1,2,3-Trichloropropane	ND	0.070	EPA 8260D	11-20-20	11-20-20	
2-Chlorotoluene	ND	0.070	EPA 8260D	11-20-20	11-20-20	
4-Chlorotoluene	ND	0.070	EPA 8260D	11-20-20	11-20-20	
1,3-Dichlorobenzene	ND	0.070	EPA 8260D	11-20-20	11-20-20	
1,4-Dichlorobenzene	ND	0.070	EPA 8260D	11-20-20	11-20-20	
1,2-Dichlorobenzene	ND	0.070	EPA 8260D	11-20-20	11-20-20	
1,2-Dibromo-3-chloropropane	ND	0.35	EPA 8260D	11-20-20	11-20-20	
1,2,4-Trichlorobenzene	ND	0.070	EPA 8260D	11-20-20	11-20-20	
Hexachlorobutadiene	ND	0.35	EPA 8260D	11-20-20	11-20-20	
1,2,3-Trichlorobenzene	ND	0.070	EPA 8260D	11-20-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*98*	*74-131*				
Toluene-d8	*96*	*78-128*				
4-Bromofluorobenzene	*85*	*71-130*				

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B10-7**					
Laboratory ID:	11-099-12					
Dichlorodifluoromethane	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
Chloromethane	ND	0.0086	EPA 8260D	11-18-20	11-18-20	
Vinyl Chloride	ND	0.0016	EPA 8260D	11-18-20	11-18-20	
Bromomethane	ND	0.0058	EPA 8260D	11-18-20	11-18-20	
Chloroethane	ND	0.0058	EPA 8260D	11-18-20	11-18-20	
Trichlorofluoromethane	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethene	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
Iodomethane	ND	0.0058	EPA 8260D	11-18-20	11-18-20	
Methylene Chloride	ND	0.0074	EPA 8260D	11-18-20	11-18-20	
(trans) 1,2-Dichloroethene	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
Methyl t-Butyl Ether	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethane	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
2,2-Dichloropropane	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
(cis) 1,2-Dichloroethene	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
Bromochloromethane	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
Chloroform	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
1,1,1-Trichloroethane	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
Carbon Tetrachloride	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloropropene	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloroethane	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
Trichloroethene	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloropropane	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
Dibromomethane	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
Bromodichloromethane	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
2-Chloroethyl Vinyl Ether	ND	0.0058	EPA 8260D	11-18-20	11-18-20	
(cis) 1,3-Dichloropropene	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
(trans) 1,3-Dichloropropene	ND	0.0012	EPA 8260D	11-18-20	11-18-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B10-7**					
Laboratory ID:	11-099-12					
1,1,2-Trichloroethane	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
Tetrachloroethene	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
1,3-Dichloropropane	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
Dibromochloromethane	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
1,2-Dibromoethane	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
Chlorobenzene	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
1,1,1,2-Tetrachloroethane	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
Bromoform	ND	0.0058	EPA 8260D	11-18-20	11-18-20	
Bromobenzene	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
1,1,2,2-Tetrachloroethane	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
1,2,3-Trichloropropane	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
2-Chlorotoluene	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
4-Chlorotoluene	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
1,3-Dichlorobenzene	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
1,4-Dichlorobenzene	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
1,2-Dichlorobenzene	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
1,2-Dibromo-3-chloropropane	ND	0.0058	EPA 8260D	11-18-20	11-18-20	
1,2,4-Trichlorobenzene	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
Hexachlorobutadiene	ND	0.0058	EPA 8260D	11-18-20	11-18-20	
1,2,3-Trichlorobenzene	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*96*	*74-131*				
Toluene-d8	*96*	*78-128*				
4-Bromofluorobenzene	*87*	*71-130*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B11-7**					
Laboratory ID:	11-099-14					
Dichlorodifluoromethane	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
Chloromethane	ND	0.0068	EPA 8260D	11-18-20	11-18-20	
Vinyl Chloride	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Bromomethane	ND	0.0045	EPA 8260D	11-18-20	11-18-20	
Chloroethane	ND	0.0045	EPA 8260D	11-18-20	11-18-20	
Trichlorofluoromethane	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethene	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
Iodomethane	ND	0.0045	EPA 8260D	11-18-20	11-18-20	
Methylene Chloride	ND	0.0058	EPA 8260D	11-18-20	11-18-20	
(trans) 1,2-Dichloroethene	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
Methyl t-Butyl Ether	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethane	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
2,2-Dichloropropane	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
(cis) 1,2-Dichloroethene	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
Bromochloromethane	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
Chloroform	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
1,1,1-Trichloroethane	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
Carbon Tetrachloride	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloropropene	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloroethane	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
Trichloroethene	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloropropane	ND	0.0012	EPA 8260D	11-18-20	11-18-20	
Dibromomethane	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
Bromodichloromethane	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
2-Chloroethyl Vinyl Ether	ND	0.0045	EPA 8260D	11-18-20	11-18-20	
(cis) 1,3-Dichloropropene	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
(trans) 1,3-Dichloropropene	ND	0.00091	EPA 8260D	11-18-20	11-18-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B11-7**					
Laboratory ID:	11-099-14					
1,1,2-Trichloroethane	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
Tetrachloroethene	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
1,3-Dichloropropane	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
Dibromochloromethane	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
1,2-Dibromoethane	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
Chlorobenzene	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
1,1,1,2-Tetrachloroethane	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
Bromoform	ND	0.0045	EPA 8260D	11-18-20	11-18-20	
Bromobenzene	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
1,1,2,2-Tetrachloroethane	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
1,2,3-Trichloropropane	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
2-Chlorotoluene	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
4-Chlorotoluene	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
1,3-Dichlorobenzene	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
1,4-Dichlorobenzene	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
1,2-Dichlorobenzene	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
1,2-Dibromo-3-chloropropane	ND	0.0045	EPA 8260D	11-18-20	11-18-20	
1,2,4-Trichlorobenzene	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
Hexachlorobutadiene	ND	0.0045	EPA 8260D	11-18-20	11-18-20	
1,2,3-Trichlorobenzene	ND	0.00091	EPA 8260D	11-18-20	11-18-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*101*	*74-131*				
Toluene-d8	*95*	*78-128*				
4-Bromofluorobenzene	*91*	*71-130*				

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QUALITY CONTROL
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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1118S1					
Dichlorodifluoromethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Chloromethane	ND	0.0075	EPA 8260D	11-18-20	11-18-20	
Vinyl Chloride	ND	0.0014	EPA 8260D	11-18-20	11-18-20	
Bromomethane	ND	0.0050	EPA 8260D	11-18-20	11-18-20	
Chloroethane	ND	0.0050	EPA 8260D	11-18-20	11-18-20	
Trichlorofluoromethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Iodomethane	ND	0.0050	EPA 8260D	11-18-20	11-18-20	
Methylene Chloride	ND	0.0064	EPA 8260D	11-18-20	11-18-20	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
2,2-Dichloropropane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Bromochloromethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Chloroform	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Carbon Tetrachloride	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloropropene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloroethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Trichloroethene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloropropane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Dibromomethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Bromodichloromethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260D	11-18-20	11-18-20	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1118S1					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Tetrachloroethene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,3-Dichloropropane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Dibromochloromethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,2-Dibromoethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Chlorobenzene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Bromoform	ND	0.0050	EPA 8260D	11-18-20	11-18-20	
Bromobenzene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
2-Chlorotoluene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
4-Chlorotoluene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260D	11-18-20	11-18-20	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Hexachlorobutadiene	ND	0.0050	EPA 8260D	11-18-20	11-18-20	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*96*	*74-131*				
Toluene-d8	*98*	*78-128*				
4-Bromofluorobenzene	*95*	*71-130*				

Date of Report: December 14, 2020
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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1120S1					
Dichlorodifluoromethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Chloromethane	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
Vinyl Chloride	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Bromomethane	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
Chloroethane	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
Trichlorofluoromethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,1-Dichloroethene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Iodomethane	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
Methylene Chloride	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,1-Dichloroethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
2,2-Dichloropropane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Bromochloromethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Chloroform	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Carbon Tetrachloride	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,1-Dichloropropene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,2-Dichloroethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Trichloroethene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,2-Dichloropropane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Dibromomethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Bromodichloromethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
2-Chloroethyl Vinyl Ether	ND	0.0073	EPA 8260D	11-20-20	11-20-20	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	

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Samples Submitted: November 10, 2020
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Project: 1903-00129-RI

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1120S1					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Tetrachloroethene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,3-Dichloropropane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Dibromochloromethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,2-Dibromoethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Chlorobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Bromoform	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
Bromobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
2-Chlorotoluene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
4-Chlorotoluene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Hexachlorobutadiene	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*102*	*74-131*				
Toluene-d8	*100*	*78-128*				
4-Bromofluorobenzene	*100*	*71-130*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
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Project: 1903-00129-RI

VOLATILE ORGANICS EPA 8260D
QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1118S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0446**	**0.0446**	0.0500	0.0500	89	89	55-126	0	17	
Benzene	**0.0400**	**0.0409**	0.0500	0.0500	80	82	65-121	2	16	
Trichloroethene	**0.0467**	**0.0475**	0.0500	0.0500	93	95	74-126	2	16	
Toluene	**0.0420**	**0.0426**	0.0500	0.0500	84	85	71-121	1	16	
Chlorobenzene	**0.0430**	**0.0445**	0.0500	0.0500	86	89	72-123	3	16	
Surrogate:										
Dibromofluoromethane					*96*	*98*	*74-131*			
Toluene-d8					*98*	*96*	*78-128*			
4-Bromofluorobenzene					*96*	*96*	*71-130*			
Laboratory ID:	SB1120S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0533**	**0.0513**	0.0500	0.0500	107	103	55-126	4	17	
Benzene	**0.0521**	**0.0503**	0.0500	0.0500	104	101	65-121	4	16	
Trichloroethene	**0.0535**	**0.0513**	0.0500	0.0500	107	103	74-126	4	16	
Toluene	**0.0525**	**0.0510**	0.0500	0.0500	105	102	71-121	3	16	
Chlorobenzene	**0.0549**	**0.0541**	0.0500	0.0500	110	108	72-123	1	16	
Surrogate:										
Dibromofluoromethane					*100*	*102*	*74-131*			
Toluene-d8					*98*	*101*	*78-128*			
4-Bromofluorobenzene					*99*	*99*	*71-130*			

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

PCBs EPA 8082A

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B3-7**					
Laboratory ID:	11-099-05					
Aroclor 1016	**ND**	0.077	EPA 8082A	11-23-20	11-23-20	
Aroclor 1221	**ND**	0.077	EPA 8082A	11-23-20	11-23-20	
Aroclor 1232	**ND**	0.077	EPA 8082A	11-23-20	11-23-20	
Aroclor 1242	**ND**	0.077	EPA 8082A	11-23-20	11-23-20	
Aroclor 1248	**ND**	0.077	EPA 8082A	11-23-20	11-23-20	
Aroclor 1254	**ND**	0.077	EPA 8082A	11-23-20	11-23-20	
Aroclor 1260	**ND**	0.077	EPA 8082A	11-23-20	11-23-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*105*	*46-125*				
Client ID:	**B3-10**					
Laboratory ID:	11-099-06					
Aroclor 1016	**ND**	0.12	EPA 8082A	11-23-20	11-23-20	
Aroclor 1221	**ND**	0.12	EPA 8082A	11-23-20	11-23-20	
Aroclor 1232	**ND**	0.12	EPA 8082A	11-23-20	11-23-20	
Aroclor 1242	**ND**	0.12	EPA 8082A	11-23-20	11-23-20	
Aroclor 1248	**ND**	0.12	EPA 8082A	11-23-20	11-23-20	
Aroclor 1254	**ND**	0.12	EPA 8082A	11-23-20	11-23-20	
Aroclor 1260	**ND**	0.12	EPA 8082A	11-23-20	11-23-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*83*	*46-125*				
Client ID:	**B3-7a**					
Laboratory ID:	11-099-07					
Aroclor 1016	**ND**	0.077	EPA 8082A	11-23-20	11-23-20	
Aroclor 1221	**ND**	0.077	EPA 8082A	11-23-20	11-23-20	
Aroclor 1232	**ND**	0.077	EPA 8082A	11-23-20	11-23-20	
Aroclor 1242	**ND**	0.077	EPA 8082A	11-23-20	11-23-20	
Aroclor 1248	**ND**	0.077	EPA 8082A	11-23-20	11-23-20	
Aroclor 1254	**ND**	0.077	EPA 8082A	11-23-20	11-23-20	
Aroclor 1260	**ND**	0.077	EPA 8082A	11-23-20	11-23-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*103*	*46-125*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

PCBs EPA 8082A

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B9-7**					
Laboratory ID:	11-099-10					
Aroclor 1016	**ND**	0.064	EPA 8082A	11-23-20	11-23-20	
Aroclor 1221	**ND**	0.064	EPA 8082A	11-23-20	11-23-20	
Aroclor 1232	**ND**	0.064	EPA 8082A	11-23-20	11-23-20	
Aroclor 1242	**ND**	0.064	EPA 8082A	11-23-20	11-23-20	
Aroclor 1248	**ND**	0.064	EPA 8082A	11-23-20	11-23-20	
Aroclor 1254	**ND**	0.064	EPA 8082A	11-23-20	11-23-20	
Aroclor 1260	**ND**	0.064	EPA 8082A	11-23-20	11-23-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*118*	*46-125*				
Client ID:	**B10-7**					
Laboratory ID:	11-099-12					
Aroclor 1016	**ND**	0.061	EPA 8082A	11-23-20	11-23-20	
Aroclor 1221	**ND**	0.061	EPA 8082A	11-23-20	11-23-20	
Aroclor 1232	**ND**	0.061	EPA 8082A	11-23-20	11-23-20	
Aroclor 1242	**ND**	0.061	EPA 8082A	11-23-20	11-23-20	
Aroclor 1248	**ND**	0.061	EPA 8082A	11-23-20	11-23-20	
Aroclor 1254	**ND**	0.061	EPA 8082A	11-23-20	11-23-20	
Aroclor 1260	**ND**	0.061	EPA 8082A	11-23-20	11-23-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*115*	*46-125*				
Client ID:	**B11-7**					
Laboratory ID:	11-099-14					
Aroclor 1016	**ND**	0.057	EPA 8082A	11-23-20	11-23-20	
Aroclor 1221	**ND**	0.057	EPA 8082A	11-23-20	11-23-20	
Aroclor 1232	**ND**	0.057	EPA 8082A	11-23-20	11-23-20	
Aroclor 1242	**ND**	0.057	EPA 8082A	11-23-20	11-23-20	
Aroclor 1248	**ND**	0.057	EPA 8082A	11-23-20	11-23-20	
Aroclor 1254	**ND**	0.057	EPA 8082A	11-23-20	11-23-20	
Aroclor 1260	**ND**	0.057	EPA 8082A	11-23-20	11-23-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*110*	*46-125*				

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

PCBs EPA 8082A
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1123S1					
Aroclor 1016	**ND**	0.050	EPA 8082A	11-23-20	11-23-20	
Aroclor 1221	**ND**	0.050	EPA 8082A	11-23-20	11-23-20	
Aroclor 1232	**ND**	0.050	EPA 8082A	11-23-20	11-23-20	
Aroclor 1242	**ND**	0.050	EPA 8082A	11-23-20	11-23-20	
Aroclor 1248	**ND**	0.050	EPA 8082A	11-23-20	11-23-20	
Aroclor 1254	**ND**	0.050	EPA 8082A	11-23-20	11-23-20	
Aroclor 1260	**ND**	0.050	EPA 8082A	11-23-20	11-23-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*114*	*46-125*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	11-099-12										
	MS	MSD	MS	MSD		MS	MSD				
Aroclor 1260	**0.512**	**0.519**	0.500	0.500	ND	**102**	**104**	43-125	1	15	
Surrogate:											
DCB						*116*	*126*	*46-125*			

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B3-7**					
Laboratory ID:	11-099-05					
Hexavalent Chromium	**ND**	1.5	EPA 7196A mod.	11-25-20	11-25-20	
Client ID:	**B3-10**					
Laboratory ID:	11-099-06					
Hexavalent Chromium	**ND**	2.5	EPA 7196A mod.	11-25-20	11-25-20	
Client ID:	**B3-7a**					
Laboratory ID:	11-099-07					
Hexavalent Chromium	**ND**	1.5	EPA 7196A mod.	11-25-20	11-25-20	
Client ID:	**B9-15**					
Laboratory ID:	11-099-11					
Hexavalent Chromium	**ND**	1.2	EPA 7196A mod.	11-25-20	11-25-20	
Client ID:	**B10-7**					
Laboratory ID:	11-099-12					
Hexavalent Chromium	**ND**	1.2	EPA 7196A mod.	11-25-20	11-25-20	
Client ID:	**B11-7**					
Laboratory ID:	11-099-14					
Hexavalent Chromium	**ND**	1.1	EPA 7196A mod.	11-25-20	11-25-20	
Client ID:	**B11-15**					
Laboratory ID:	11-099-15					
Hexavalent Chromium	**ND**	1.2	EPA 7196A mod.	11-25-20	11-25-20	

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B4-7**					
Laboratory ID:	11-099-16					
Hexavalent Chromium	**ND**	1.3	EPA 7196A mod.	11-25-20	11-25-20	
Client ID:	**B4-15**					
Laboratory ID:	11-099-17					
Hexavalent Chromium	**ND**	1.3	EPA 7196A mod.	11-25-20	11-25-20	

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1125S1					
Hexavalent Chromium	**ND**	1.0	EPA 7196A mod.	11-25-20	11-25-20	

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-099-12										
	ORIG	DUP									
Hexavalent Chromium	**ND**	**ND**	NA		NA	NA		NA	NA	20	
MATRIX SPIKES											
Laboratory ID:	11-099-12										
	MS	MSD	MS	MSD		MS	MSD				
Hexavalent Chromium	**3.18**	**3.39**	5.00	5.00	ND	64	68	75-125	6	20	V
SPIKE BLANK											
Laboratory ID:	SB1125S1										
	SB		SB			SB					
Hexavalent Chromium	**4.56**		5.00		NA	91		75-125	NA	NA	

Date of Report: December 14, 2020
Samples Submitted: November 10, 2020
Laboratory Reference: 2011-099
Project: 1903-00129-RI

% MOISTURE

Client ID	Lab ID	% Moisture	Date Analyzed
B1-7	11-099-01	**10**	11-11-20
B1-15	11-099-02	**9**	11-11-20
B8-7	11-099-03	**6**	11-11-20
B8-15	11-099-04	**13**	11-11-20
B3-7	11-099-05	**35**	11-11-20
B3-10	11-099-06	**59**	11-11-20
B3-7a	11-099-07	**35**	11-11-20
B3-15	11-099-08	**11**	11-11-20
B3-15a	11-099-09	**12**	11-11-20
B9-7	11-099-10	**21**	11-11-20
B9-15	11-099-11	**17**	11-11-20
B10-7	11-099-12	**18**	11-11-20
B10-15	11-099-13	**7**	11-11-20
B11-7	11-099-14	**13**	11-11-20
B11-15	11-099-15	**16**	11-12-20
B4-7	11-099-16	**23**	11-12-20
B4-15	11-099-17	**20**	11-12-20

OnSite Environmental Inc.

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 gas.

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 methods 8260 & 8270, 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

Chain of Custody

Page 1 of 2

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

Company: ENPRO Environmental
Project Number: 1903-00129-RI
Project Name: Green Cove Park Development
Project Manager: Kim Kim
Sampled by: Ken Beal / Ho'ano Rosario

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
☐ _____ (other)

Laboratory Number: 11-099

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	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 (8 metals)	~~Total MTCA Metals~~ HEX CHROME	TCLP Metals	HEM (oil and grease) 1664A	EDC	MTBE	Total Pb		% Moisture
1	B1-7	11-9-20	9:30	soil	6		X		X		H	H		H	H							H	H	H		X
2	B1-15		10:00				X		X		H	H		H	H							H	H	H		
3	B8-7		10:30				X		X		H	H		X	H				X		H	H	H	H		
4	B8-15		10:30				X		X		H	H		X	H				X		H	H	H	H		
5	B3-7		11:00				X		X		●	H		Y	●				Y	⊗	H	H	H	●		
6	B3-10		11:00				Y		X		●	H		Y	●				X	⊗	H	H	H	●		
7	B3-7a		11:00				Y		X		●	H		X	●				X	⊗	H	H	H	●		
8	B3-15		11:00				Y		X		H	H		X	H				X		H	H	H	H		
9	B3-15a		11:00				X		X		H	H		X	H				X		H	H	H	H		
10	B9-7		12:30				X		X		●	H		X	●				X		H	H	H	●		

	Signature	Company	Date	Time
Relinquished	Ken Beal	ENPRO Environ	11-10-20	1:06
Received	J. Isaacson	ACHA	11-10-20	1:06
Relinquished	J. Isaacson	ACHA	11-10-20	3:40
Received	Natalie Crain	OSE	11/10/20	1540
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
X = analyze
H = Hold pending instruction
● - Added 11/17/2020 DB (STA)
⊗ Added 11/19/2020. DB (STA)

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

Chain of Custody

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

Company: ENDRO Environmental
Project Number: 1903-00129-RI
Project Name: Green Cove Park Development
Project Manager: Kim Kim
Sampled by: Ken Beal / Ho'ano Rosario

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
☐ _____ (other)

Laboratory Number: 11-099

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	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 (8 metals)	~~Total MTCA Metals~~ (Cancelled 12/4/20 per Brandis)	TCLP Metals	~~HEM (oil and grease) 1664A~~	Hex Chrome	EDC	MTBE	Total Pb	Total Cu	% Moisture	Pentachlorophenol
11	B9-15	11-9-20	12:30	Soil			X		X		H	H		X	H				X		H	X	H				X	
12	B10-7		1:15				X		X		●	H	No 93	X	●				X		H	X	H					
13	B10-15		1:15				X		X		H	H		X	H				X		H		H					
14	B11-7		1:50				X		X		●	H	X	X	●				X	●	H	X	H	●		X		
15	B11-15		1:50				X		X		H	H	X	X	H				X		H	X	H	H		X		
16	B4-7		2:40				X		X		H	H		X	H				X		H	X	H	H				
17	B4-15		2:40				X		X		H	H		X	H				X		H	X	H	H				

Last Entry KS 11/10/20

	Signature	Company	Date	Time
Relinquished	[signature]	Endro Environ	11-10-20	1:06
Received	J. Isaacson	ACPHA	11-10-20	1:06
Relinquished	J. Isaacson	ACPHA	11-10-20	3:40
Received	Matthew Crum	OSE	11/10/20	1540
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
X = analyte
H = Hold pending instruction

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

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

December 1, 2020

Kim Kim
EnPro Environmental
151 Hekili Street, Suite 210
Kailua, HI 96734

Re: Analytical Data for Project 1903-00129-RI
Laboratory Reference No. 2011-115

Dear Kim:

Enclosed are the analytical results and associated quality control data for samples submitted on November 11, 2020.

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,

David Baumeister
Project Manager

Enclosures

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

Case Narrative

Samples were collected on November 10, 2020 and received by the laboratory on November 11, 2020. 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/BTEX Analysis

The Method 5035A VOA vials provided for the samples were filled completely and therefore unusable. The samples were consequently extracted from 8-ounce jars for analysis. Some loss of volatiles may have occurred.

Volatiles EPA 8260D Analysis

The Method 5035A VOA vials provided for the samples were filled completely and therefore unusable. The samples were consequently extracted from 8-ounce jars for analysis. Some loss of volatiles may have occurred.

Soluble Hexavalent Chromium EPA 7196A Analysis

The Matrix Spike/Matrix Spike Duplicate recoveries for hexavalent chromium are outside control limits due to matrix interferences. The soil exhibits reducing conditions. The Spike Blank recovery was 91 %.
The Standard Reference Material meets the published acceptance limits.

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: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B7-7**					
Laboratory ID:	11-115-01					
Benzene	**ND**	0.029	EPA 8021B	11-13-20	11-13-20	
Toluene	**ND**	0.14	EPA 8021B	11-13-20	11-13-20	
Ethyl Benzene	**ND**	0.14	EPA 8021B	11-13-20	11-13-20	
m,p-Xylene	**ND**	0.14	EPA 8021B	11-13-20	11-13-20	
o-Xylene	**ND**	0.14	EPA 8021B	11-13-20	11-13-20	
Gasoline	**ND**	14	NWTPH-Gx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*58-129*				
Client ID:	**B7-15**					
Laboratory ID:	11-115-02					
Benzene	**ND**	0.020	EPA 8021B	11-13-20	11-13-20	
Toluene	**ND**	0.047	EPA 8021B	11-13-20	11-13-20	
Ethyl Benzene	**ND**	0.047	EPA 8021B	11-13-20	11-13-20	
m,p-Xylene	**ND**	0.047	EPA 8021B	11-13-20	11-13-20	
o-Xylene	**ND**	0.047	EPA 8021B	11-13-20	11-13-20	
Gasoline	**ND**	4.7	NWTPH-Gx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*58-129*				
Client ID:	**B6-7**					
Laboratory ID:	11-115-03					
Benzene	**ND**	0.020	EPA 8021B	11-13-20	11-13-20	
Toluene	**ND**	0.074	EPA 8021B	11-13-20	11-13-20	
Ethyl Benzene	**ND**	0.074	EPA 8021B	11-13-20	11-13-20	
m,p-Xylene	**ND**	0.074	EPA 8021B	11-13-20	11-13-20	
o-Xylene	**ND**	0.074	EPA 8021B	11-13-20	11-13-20	
Gasoline	**ND**	7.4	NWTPH-Gx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*58-129*				

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B6-15**					
Laboratory ID:	11-115-04					
Benzene	**ND**	0.020	EPA 8021B	11-13-20	11-13-20	
Toluene	**ND**	0.058	EPA 8021B	11-13-20	11-13-20	
Ethyl Benzene	**ND**	0.058	EPA 8021B	11-13-20	11-13-20	
m,p-Xylene	**ND**	0.058	EPA 8021B	11-13-20	11-13-20	
o-Xylene	**ND**	0.058	EPA 8021B	11-13-20	11-13-20	
Gasoline	**ND**	5.8	NWTPH-Gx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*58-129*				
Client ID:	**B2-7**					
Laboratory ID:	11-115-05					
Benzene	**ND**	0.020	EPA 8021B	11-13-20	11-13-20	
Toluene	**ND**	0.049	EPA 8021B	11-13-20	11-13-20	
Ethyl Benzene	**ND**	0.049	EPA 8021B	11-13-20	11-13-20	
m,p-Xylene	**ND**	0.049	EPA 8021B	11-13-20	11-13-20	
o-Xylene	**ND**	0.049	EPA 8021B	11-13-20	11-13-20	
Gasoline	**ND**	4.9	NWTPH-Gx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*101*	*58-129*				
Client ID:	**B2-7a**					
Laboratory ID:	11-115-06					
Benzene	**ND**	0.020	EPA 8021B	11-13-20	11-13-20	
Toluene	**ND**	0.059	EPA 8021B	11-13-20	11-13-20	
Ethyl Benzene	**ND**	0.059	EPA 8021B	11-13-20	11-13-20	
m,p-Xylene	**ND**	0.059	EPA 8021B	11-13-20	11-13-20	
o-Xylene	**ND**	0.059	EPA 8021B	11-13-20	11-13-20	
Gasoline	**ND**	5.9	NWTPH-Gx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*58-129*				

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B2-15**					
Laboratory ID:	11-115-07					
Benzene	**ND**	0.020	EPA 8021B	11-13-20	11-13-20	
Toluene	**ND**	0.053	EPA 8021B	11-13-20	11-13-20	
Ethyl Benzene	**ND**	0.053	EPA 8021B	11-13-20	11-13-20	
m,p-Xylene	**ND**	0.053	EPA 8021B	11-13-20	11-13-20	
o-Xylene	**ND**	0.053	EPA 8021B	11-13-20	11-13-20	
Gasoline	**ND**	5.3	NWTPH-Gx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*58-129*				
Client ID:	**B2-15a**					
Laboratory ID:	11-115-08					
Benzene	**ND**	0.020	EPA 8021B	11-13-20	11-13-20	
Toluene	**ND**	0.065	EPA 8021B	11-13-20	11-13-20	
Ethyl Benzene	**ND**	0.065	EPA 8021B	11-13-20	11-13-20	
m,p-Xylene	**ND**	0.065	EPA 8021B	11-13-20	11-13-20	
o-Xylene	**ND**	0.065	EPA 8021B	11-13-20	11-13-20	
Gasoline	**ND**	6.5	NWTPH-Gx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*58-129*				
Client ID:	**B5-7**					
Laboratory ID:	11-115-09					
Benzene	**ND**	0.020	EPA 8021B	11-13-20	11-13-20	
Toluene	**ND**	0.054	EPA 8021B	11-13-20	11-13-20	
Ethyl Benzene	**ND**	0.054	EPA 8021B	11-13-20	11-13-20	
m,p-Xylene	**ND**	0.054	EPA 8021B	11-13-20	11-13-20	
o-Xylene	**ND**	0.054	EPA 8021B	11-13-20	11-13-20	
Gasoline	**ND**	5.4	NWTPH-Gx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*58-129*				

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B5-15**					
Laboratory ID:	11-115-10					
Benzene	**ND**	0.020	EPA 8021B	11-13-20	11-13-20	
Toluene	**ND**	0.062	EPA 8021B	11-13-20	11-13-20	
Ethyl Benzene	**ND**	0.062	EPA 8021B	11-13-20	11-13-20	
m,p-Xylene	**ND**	0.062	EPA 8021B	11-13-20	11-13-20	
o-Xylene	**ND**	0.062	EPA 8021B	11-13-20	11-13-20	
Gasoline	**ND**	6.2	NWTPH-Gx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*58-129*				

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1113S1					
Benzene	**ND**	0.020	EPA 8021B	11-13-20	11-13-20	
Toluene	**ND**	0.050	EPA 8021B	11-13-20	11-13-20	
Ethyl Benzene	**ND**	0.050	EPA 8021B	11-13-20	11-13-20	
m,p-Xylene	**ND**	0.050	EPA 8021B	11-13-20	11-13-20	
o-Xylene	**ND**	0.050	EPA 8021B	11-13-20	11-13-20	
Gasoline	**ND**	5.0	NWTPH-Gx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*58-129*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-119-04										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*97*	*95*	*58-129*			
SPIKE BLANKS											
Laboratory ID:	SB1113S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.961**	**0.963**	1.00	1.00		**96**	**96**	68-112	0	10	
Toluene	**0.983**	**0.985**	1.00	1.00		**98**	**99**	70-114	0	10	
Ethyl Benzene	**0.980**	**0.979**	1.00	1.00		**98**	**98**	70-115	0	10	
m,p-Xylene	**0.983**	**0.978**	1.00	1.00		**98**	**98**	69-117	1	11	
o-Xylene	**0.982**	**0.987**	1.00	1.00		**98**	**99**	71-115	1	11	
Surrogate:											
Fluorobenzene						*93*	*94*	*58-129*			

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B7-7**					
Laboratory ID:	11-115-01					
Diesel Range Organics	**140**	48	NWTPH-Dx	11-13-20	11-13-20	N
Lube Oil	**1300**	95	NWTPH-Dx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				
Client ID:	**B7-15**					
Laboratory ID:	11-115-02					
Diesel Range Organics	**ND**	29	NWTPH-Dx	11-13-20	11-13-20	
Lube Oil Range Organics	**ND**	59	NWTPH-Dx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*85*	*50-150*				
Client ID:	**B6-7**					
Laboratory ID:	11-115-03					
Diesel Range Organics	**ND**	29	NWTPH-Dx	11-13-20	11-13-20	
Lube Oil Range Organics	**ND**	59	NWTPH-Dx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*90*	*50-150*				
Client ID:	**B6-15**					
Laboratory ID:	11-115-04					
Diesel Range Organics	**ND**	28	NWTPH-Dx	11-13-20	11-13-20	
Lube Oil Range Organics	**ND**	56	NWTPH-Dx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				
Client ID:	**B2-7**					
Laboratory ID:	11-115-05					
Diesel Range Organics	**ND**	28	NWTPH-Dx	11-13-20	11-13-20	
Lube Oil	**170**	57	NWTPH-Dx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				
Client ID:	**B2-7a**					
Laboratory ID:	11-115-06					
Diesel Range Organics	**ND**	28	NWTPH-Dx	11-13-20	11-13-20	
Lube Oil	**97**	56	NWTPH-Dx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*83*	*50-150*				

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B2-15**					
Laboratory ID:	11-115-07					
Diesel Range Organics	**ND**	29	NWTPH-Dx	11-13-20	11-13-20	
Lube Oil Range Organics	**ND**	58	NWTPH-Dx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*96*	*50-150*				
Client ID:	**B2-15a**					
Laboratory ID:	11-115-08					
Diesel Range Organics	**ND**	30	NWTPH-Dx	11-13-20	11-13-20	
Lube Oil Range Organics	**ND**	60	NWTPH-Dx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				
Client ID:	**B5-7**					
Laboratory ID:	11-115-09					
Diesel Range Organics	**ND**	27	NWTPH-Dx	11-13-20	11-13-20	
Lube Oil Range Organics	**ND**	54	NWTPH-Dx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*93*	*50-150*				
Client ID:	**B5-15**					
Laboratory ID:	11-115-10					
Diesel Range Organics	**ND**	32	NWTPH-Dx	11-13-20	11-13-20	
Lube Oil Range Organics	**ND**	63	NWTPH-Dx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*83*	*50-150*				

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1113S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	11-13-20	11-13-20	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*90*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	11-115-09									
	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						*93* *86*	*50-150*			

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B7-7**					
Laboratory ID:	11-115-01					
Naphthalene	**0.059**	0.013	EPA 8270E/SIM	11-13-20	11-17-20	
2-Methylnaphthalene	**0.034**	0.013	EPA 8270E/SIM	11-13-20	11-17-20	
1-Methylnaphthalene	**0.018**	0.013	EPA 8270E/SIM	11-13-20	11-17-20	
Acenaphthylene	**0.013**	0.013	EPA 8270E/SIM	11-13-20	11-17-20	
Acenaphthene	**0.067**	0.013	EPA 8270E/SIM	11-13-20	11-17-20	
Fluorene	**0.10**	0.013	EPA 8270E/SIM	11-13-20	11-17-20	
Phenanthrene	**0.18**	0.013	EPA 8270E/SIM	11-13-20	11-17-20	
Anthracene	**0.11**	0.013	EPA 8270E/SIM	11-13-20	11-17-20	
Fluoranthene	**0.35**	0.013	EPA 8270E/SIM	11-13-20	11-17-20	
Pyrene	**0.35**	0.013	EPA 8270E/SIM	11-13-20	11-17-20	
Benzo[a]anthracene	**0.067**	0.013	EPA 8270E/SIM	11-13-20	11-17-20	
Chrysene	**0.083**	0.013	EPA 8270E/SIM	11-13-20	11-17-20	
Benzo[b]fluoranthene	**0.077**	0.013	EPA 8270E/SIM	11-13-20	11-17-20	
Benzo(j,k)fluoranthene	**0.020**	0.013	EPA 8270E/SIM	11-13-20	11-17-20	
Benzo[a]pyrene	**0.041**	0.013	EPA 8270E/SIM	11-13-20	11-17-20	
Indeno(1,2,3-c,d)pyrene	**0.020**	0.013	EPA 8270E/SIM	11-13-20	11-17-20	
Dibenz[a,h]anthracene	**ND**	0.013	EPA 8270E/SIM	11-13-20	11-17-20	
Benzo[g,h,i]perylene	**0.019**	0.013	EPA 8270E/SIM	11-13-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*68*	*46 - 113*				
Pyrene-d10	*85*	*45 - 114*				
Terphenyl-d14	*77*	*49 - 121*				

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B7-15**					
Laboratory ID:	11-115-02					
Naphthalene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Acenaphthylene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Acenaphthene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Fluorene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Phenanthrene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Anthracene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Fluoranthene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Pyrene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[a]anthracene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Chrysene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[b]fluoranthene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[a]pyrene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*79*	*46 - 113*				
Pyrene-d10	*88*	*45 - 114*				
Terphenyl-d14	*83*	*49 - 121*				

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B6-7**					
Laboratory ID:	11-115-03					
Naphthalene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Acenaphthylene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Acenaphthene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Fluorene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Phenanthrene	**0.027**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Anthracene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Fluoranthene	**0.039**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Pyrene	**0.037**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[a]anthracene	**0.015**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Chrysene	**0.021**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[b]fluoranthene	**0.022**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo(j,k)fluoranthene	**0.0090**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[a]pyrene	**0.017**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**0.012**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[g,h,i]perylene	**0.012**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*81*	*46 - 113*				
Pyrene-d10	*80*	*45 - 114*				
Terphenyl-d14	*89*	*49 - 121*				

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
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PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B6-15**					
Laboratory ID:	11-115-04					
Naphthalene	**ND**	0.0075	EPA 8270E/SIM	11-13-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0075	EPA 8270E/SIM	11-13-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0075	EPA 8270E/SIM	11-13-20	11-16-20	
Acenaphthylene	**ND**	0.0075	EPA 8270E/SIM	11-13-20	11-16-20	
Acenaphthene	**ND**	0.0075	EPA 8270E/SIM	11-13-20	11-16-20	
Fluorene	**ND**	0.0075	EPA 8270E/SIM	11-13-20	11-16-20	
Phenanthrene	**ND**	0.0075	EPA 8270E/SIM	11-13-20	11-16-20	
Anthracene	**ND**	0.0075	EPA 8270E/SIM	11-13-20	11-16-20	
Fluoranthene	**ND**	0.0075	EPA 8270E/SIM	11-13-20	11-16-20	
Pyrene	**ND**	0.0075	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[a]anthracene	**ND**	0.0075	EPA 8270E/SIM	11-13-20	11-16-20	
Chrysene	**ND**	0.0075	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[b]fluoranthene	**ND**	0.0075	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.0075	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[a]pyrene	**ND**	0.0075	EPA 8270E/SIM	11-13-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0075	EPA 8270E/SIM	11-13-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0075	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.0075	EPA 8270E/SIM	11-13-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*85*	*46 - 113*				
Pyrene-d10	*93*	*45 - 114*				
Terphenyl-d14	*92*	*49 - 121*				

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B2-7**					
Laboratory ID:	11-115-05					
Naphthalene	**ND**	0.0076	EPA 8270E/SIM	11-13-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0076	EPA 8270E/SIM	11-13-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0076	EPA 8270E/SIM	11-13-20	11-16-20	
Acenaphthylene	**ND**	0.0076	EPA 8270E/SIM	11-13-20	11-16-20	
Acenaphthene	**ND**	0.0076	EPA 8270E/SIM	11-13-20	11-16-20	
Fluorene	**ND**	0.0076	EPA 8270E/SIM	11-13-20	11-16-20	
Phenanthrene	**0.013**	0.0076	EPA 8270E/SIM	11-13-20	11-16-20	
Anthracene	**ND**	0.0076	EPA 8270E/SIM	11-13-20	11-16-20	
Fluoranthene	**0.013**	0.0076	EPA 8270E/SIM	11-13-20	11-16-20	
Pyrene	**0.016**	0.0076	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[a]anthracene	**0.0077**	0.0076	EPA 8270E/SIM	11-13-20	11-16-20	
Chrysene	**0.0096**	0.0076	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[b]fluoranthene	**0.011**	0.0076	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.0076	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[a]pyrene	**0.0086**	0.0076	EPA 8270E/SIM	11-13-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0076	EPA 8270E/SIM	11-13-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0076	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.0076	EPA 8270E/SIM	11-13-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*85*	*46 - 113*				
Pyrene-d10	*84*	*45 - 114*				
Terphenyl-d14	*95*	*49 - 121*				

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B2-7a**					
Laboratory ID:	11-115-06					
Naphthalene	**ND**	0.0074	EPA 8270E/SIM	11-13-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0074	EPA 8270E/SIM	11-13-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0074	EPA 8270E/SIM	11-13-20	11-16-20	
Acenaphthylene	**ND**	0.0074	EPA 8270E/SIM	11-13-20	11-16-20	
Acenaphthene	**ND**	0.0074	EPA 8270E/SIM	11-13-20	11-16-20	
Fluorene	**ND**	0.0074	EPA 8270E/SIM	11-13-20	11-16-20	
Phenanthrene	**ND**	0.0074	EPA 8270E/SIM	11-13-20	11-16-20	
Anthracene	**ND**	0.0074	EPA 8270E/SIM	11-13-20	11-16-20	
Fluoranthene	**ND**	0.0074	EPA 8270E/SIM	11-13-20	11-16-20	
Pyrene	**ND**	0.0074	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[a]anthracene	**ND**	0.0074	EPA 8270E/SIM	11-13-20	11-16-20	
Chrysene	**ND**	0.0074	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[b]fluoranthene	**ND**	0.0074	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.0074	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[a]pyrene	**ND**	0.0074	EPA 8270E/SIM	11-13-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0074	EPA 8270E/SIM	11-13-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0074	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.0074	EPA 8270E/SIM	11-13-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*88*	*46 - 113*				
Pyrene-d10	*87*	*45 - 114*				
Terphenyl-d14	*93*	*49 - 121*				

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B2-15**					
Laboratory ID:	11-115-07					
Naphthalene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Acenaphthylene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Acenaphthene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Fluorene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Phenanthrene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Anthracene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Fluoranthene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Pyrene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[a]anthracene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Chrysene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[b]fluoranthene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[a]pyrene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.0078	EPA 8270E/SIM	11-13-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*87*	*46 - 113*				
Pyrene-d10	*91*	*45 - 114*				
Terphenyl-d14	*94*	*49 - 121*				

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B2-15a**					
Laboratory ID:	11-115-08					
Naphthalene	**ND**	0.0080	EPA 8270E/SIM	11-13-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0080	EPA 8270E/SIM	11-13-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0080	EPA 8270E/SIM	11-13-20	11-16-20	
Acenaphthylene	**ND**	0.0080	EPA 8270E/SIM	11-13-20	11-16-20	
Acenaphthene	**ND**	0.0080	EPA 8270E/SIM	11-13-20	11-16-20	
Fluorene	**ND**	0.0080	EPA 8270E/SIM	11-13-20	11-16-20	
Phenanthrene	**ND**	0.0080	EPA 8270E/SIM	11-13-20	11-16-20	
Anthracene	**ND**	0.0080	EPA 8270E/SIM	11-13-20	11-16-20	
Fluoranthene	**ND**	0.0080	EPA 8270E/SIM	11-13-20	11-16-20	
Pyrene	**ND**	0.0080	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[a]anthracene	**ND**	0.0080	EPA 8270E/SIM	11-13-20	11-16-20	
Chrysene	**ND**	0.0080	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[b]fluoranthene	**ND**	0.0080	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.0080	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[a]pyrene	**ND**	0.0080	EPA 8270E/SIM	11-13-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0080	EPA 8270E/SIM	11-13-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0080	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.0080	EPA 8270E/SIM	11-13-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*84*	*46 - 113*				
Pyrene-d10	*92*	*45 - 114*				
Terphenyl-d14	*94*	*49 - 121*				

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B5-7**					
Laboratory ID:	11-115-09					
Naphthalene	**ND**	0.0072	EPA 8270E/SIM	11-13-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0072	EPA 8270E/SIM	11-13-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0072	EPA 8270E/SIM	11-13-20	11-16-20	
Acenaphthylene	**ND**	0.0072	EPA 8270E/SIM	11-13-20	11-16-20	
Acenaphthene	**ND**	0.0072	EPA 8270E/SIM	11-13-20	11-16-20	
Fluorene	**ND**	0.0072	EPA 8270E/SIM	11-13-20	11-16-20	
Phenanthrene	**ND**	0.0072	EPA 8270E/SIM	11-13-20	11-16-20	
Anthracene	**ND**	0.0072	EPA 8270E/SIM	11-13-20	11-16-20	
Fluoranthene	**ND**	0.0072	EPA 8270E/SIM	11-13-20	11-16-20	
Pyrene	**ND**	0.0072	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[a]anthracene	**ND**	0.0072	EPA 8270E/SIM	11-13-20	11-16-20	
Chrysene	**ND**	0.0072	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[b]fluoranthene	**ND**	0.0072	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.0072	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[a]pyrene	**ND**	0.0072	EPA 8270E/SIM	11-13-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0072	EPA 8270E/SIM	11-13-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0072	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.0072	EPA 8270E/SIM	11-13-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*86*	*46 - 113*				
Pyrene-d10	*93*	*45 - 114*				
Terphenyl-d14	*98*	*49 - 121*				

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B5-15**					
Laboratory ID:	11-115-10					
Naphthalene	**ND**	0.0084	EPA 8270E/SIM	11-13-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0084	EPA 8270E/SIM	11-13-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0084	EPA 8270E/SIM	11-13-20	11-16-20	
Acenaphthylene	**ND**	0.0084	EPA 8270E/SIM	11-13-20	11-16-20	
Acenaphthene	**ND**	0.0084	EPA 8270E/SIM	11-13-20	11-16-20	
Fluorene	**ND**	0.0084	EPA 8270E/SIM	11-13-20	11-16-20	
Phenanthrene	**ND**	0.0084	EPA 8270E/SIM	11-13-20	11-16-20	
Anthracene	**ND**	0.0084	EPA 8270E/SIM	11-13-20	11-16-20	
Fluoranthene	**ND**	0.0084	EPA 8270E/SIM	11-13-20	11-16-20	
Pyrene	**ND**	0.0084	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[a]anthracene	**ND**	0.0084	EPA 8270E/SIM	11-13-20	11-16-20	
Chrysene	**ND**	0.0084	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[b]fluoranthene	**ND**	0.0084	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.0084	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[a]pyrene	**ND**	0.0084	EPA 8270E/SIM	11-13-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0084	EPA 8270E/SIM	11-13-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0084	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.0084	EPA 8270E/SIM	11-13-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*83*	*46 - 113*				
Pyrene-d10	*96*	*45 - 114*				
Terphenyl-d14	*91*	*49 - 121*				

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

PAHs EPA 8270E/SIM
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1113S1					
Naphthalene	**ND**	0.0067	EPA 8270E/SIM	11-13-20	11-16-20	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270E/SIM	11-13-20	11-16-20	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270E/SIM	11-13-20	11-16-20	
Acenaphthylene	**ND**	0.0067	EPA 8270E/SIM	11-13-20	11-16-20	
Acenaphthene	**ND**	0.0067	EPA 8270E/SIM	11-13-20	11-16-20	
Fluorene	**ND**	0.0067	EPA 8270E/SIM	11-13-20	11-16-20	
Phenanthrene	**ND**	0.0067	EPA 8270E/SIM	11-13-20	11-16-20	
Anthracene	**ND**	0.0067	EPA 8270E/SIM	11-13-20	11-16-20	
Fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-13-20	11-16-20	
Pyrene	**ND**	0.0067	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270E/SIM	11-13-20	11-16-20	
Chrysene	**ND**	0.0067	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270E/SIM	11-13-20	11-16-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270E/SIM	11-13-20	11-16-20	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270E/SIM	11-13-20	11-16-20	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270E/SIM	11-13-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*96*	*46 - 113*				
Pyrene-d10	*103*	*45 - 114*				
Terphenyl-d14	*103*	*49 - 121*				

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

PAHs EPA 8270E/SIM
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:	11-116-01										
	MS	MSD	MS	MSD		MS	MSD				
Naphthalene	**0.0751**	**0.0751**	0.0833	0.0833	ND	90	90	51 - 115	0	26	
Acenaphthylene	**0.0778**	**0.0792**	0.0833	0.0833	ND	93	95	53 - 121	2	24	
Acenaphthene	**0.0745**	**0.0767**	0.0833	0.0833	ND	89	92	52 - 121	3	25	
Fluorene	**0.0785**	**0.0822**	0.0833	0.0833	ND	94	99	58 - 127	5	23	
Phenanthrene	**0.0823**	**0.0836**	0.0833	0.0833	ND	99	100	46 - 129	2	28	
Anthracene	**0.0809**	**0.0843**	0.0833	0.0833	ND	97	101	57 - 124	4	21	
Fluoranthene	**0.0823**	**0.0856**	0.0833	0.0833	ND	99	103	46 - 136	4	29	
Pyrene	**0.0873**	**0.0824**	0.0833	0.0833	ND	105	99	41 - 136	6	32	
Benzo[a]anthracene	**0.0877**	**0.0880**	0.0833	0.0833	ND	105	106	56 - 136	0	25	
Chrysene	**0.0849**	**0.0894**	0.0833	0.0833	ND	102	107	49 - 130	5	22	
Benzo[b]fluoranthene	**0.0831**	**0.0851**	0.0833	0.0833	ND	100	102	51 - 135	2	26	
Benzo(j,k)fluoranthene	**0.0902**	**0.0877**	0.0833	0.0833	ND	108	105	56 - 124	3	23	
Benzo[a]pyrene	**0.0850**	**0.0841**	0.0833	0.0833	ND	102	101	54 - 133	1	26	
Indeno(1,2,3-c,d)pyrene	**0.0846**	**0.0845**	0.0833	0.0833	ND	102	101	52 - 134	0	20	
Dibenz[a,h]anthracene	**0.0863**	**0.0909**	0.0833	0.0833	ND	104	109	58 - 127	5	17	
Benzo[g,h,i]perylene	**0.0847**	**0.0858**	0.0833	0.0833	ND	102	103	54 - 129	1	21	
Surrogate:											
2-Fluorobiphenyl						*95*	*96*	*46 - 113*			
Pyrene-d10						*96*	*98*	*45 - 114*			
Terphenyl-d14						*98*	*94*	*49 - 121*			

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

TOTAL METALS
EPA 6010D/7471B

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B7-7**					
Laboratory ID:	11-115-01					
Arsenic	**ND**	19	EPA 6010D	11-16-20	11-16-20	
Barium	**35**	4.8	EPA 6010D	11-16-20	11-16-20	
Cadmium	**ND**	0.95	EPA 6010D	11-16-20	11-16-20	
Chromium	**19**	0.95	EPA 6010D	11-16-20	11-16-20	
Lead	**16**	9.5	EPA 6010D	11-16-20	11-16-20	
Mercury	**1.3**	0.48	EPA 7471B	11-18-20	11-18-20	
Selenium	**ND**	19	EPA 6010D	11-16-20	11-16-20	
Silver	**ND**	1.9	EPA 6010D	11-16-20	11-16-20	
Client ID:	**B7-15**					
Laboratory ID:	11-115-02					
Arsenic	**ND**	12	EPA 6010D	11-16-20	11-16-20	
Barium	**31**	2.9	EPA 6010D	11-16-20	11-16-20	
Cadmium	**ND**	0.59	EPA 6010D	11-16-20	11-16-20	
Chromium	**19**	0.59	EPA 6010D	11-16-20	11-16-20	
Lead	**ND**	5.9	EPA 6010D	11-16-20	11-16-20	
Mercury	**ND**	0.29	EPA 7471B	11-18-20	11-18-20	
Selenium	**ND**	12	EPA 6010D	11-16-20	11-16-20	
Silver	**ND**	1.2	EPA 6010D	11-16-20	11-16-20	
Client ID:	**B6-7**					
Laboratory ID:	11-115-03					
Arsenic	**ND**	12	EPA 6010D	11-16-20	11-16-20	
Barium	**64**	2.9	EPA 6010D	11-16-20	11-16-20	
Cadmium	**ND**	0.59	EPA 6010D	11-16-20	11-16-20	
Chromium	**26**	0.59	EPA 6010D	11-16-20	11-16-20	
Lead	**5.9**	5.9	EPA 6010D	11-16-20	11-16-20	
Mercury	**ND**	0.29	EPA 7471B	11-18-20	11-18-20	
Selenium	**ND**	12	EPA 6010D	11-16-20	11-16-20	
Silver	**ND**	1.2	EPA 6010D	11-16-20	11-16-20	

Date of Report: December 1, 2020
Samples Submitted: November 11, 2020
Laboratory Reference: 2011-115
Project: 1903-00129-RI

TOTAL METALS
EPA 6010D/7471B

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B6-15**					
Laboratory ID:	11-115-04					
Arsenic	**ND**	11	EPA 6010D	11-16-20	11-16-20	
Barium	**31**	2.8	EPA 6010D	11-16-20	11-16-20	
Cadmium	**ND**	0.56	EPA 6010D	11-16-20	11-16-20	
Chromium	**14**	0.56	EPA 6010D	11-16-20	11-16-20	
Lead	**ND**	5.6	EPA 6010D	11-16-20	11-16-20	
Mercury	**ND**	0.28	EPA 7471B	11-18-20	11-18-20	
Selenium	**ND**	11	EPA 6010D	11-16-20	11-16-20	
Silver	**ND**	1.1	EPA 6010D	11-16-20	11-16-20	
Client ID:	**B2-7**					
Laboratory ID:	11-115-05					
Arsenic	**ND**	11	EPA 6010D	11-16-20	11-16-20	
Barium	**56**	2.8	EPA 6010D	11-16-20	11-16-20	
Cadmium	**ND**	0.57	EPA 6010D	11-16-20	11-16-20	
Chromium	**19**	0.57	EPA 6010D	11-16-20	11-16-20	
Lead	**ND**	5.7	EPA 6010D	11-16-20	11-16-20	
Mercury	**ND**	0.28	EPA 7471B	11-18-20	11-18-20	
Selenium	**ND**	11	EPA 6010D	11-16-20	11-16-20	
Silver	**ND**	1.1	EPA 6010D	11-16-20	11-16-20	
Client ID:	**B2-7a**					
Laboratory ID:	11-115-06					
Arsenic	**ND**	11	EPA 6010D	11-16-20	11-16-20	
Barium	**65**	2.8	EPA 6010D	11-16-20	11-16-20	
Cadmium	**ND**	0.56	EPA 6010D	11-16-20	11-16-20	
Chromium	**23**	0.56	EPA 6010D	11-16-20	11-16-20	
Lead	**7.0**	5.6	EPA 6010D	11-16-20	11-16-20	
Mercury	**ND**	0.28	EPA 7471B	11-18-20	11-18-20	
Selenium	**ND**	11	EPA 6010D	11-16-20	11-16-20	
Silver	**ND**	1.1	EPA 6010D	11-16-20	11-16-20	

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TOTAL METALS
EPA 6010D/7471B

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B2-15**					
Laboratory ID:	11-115-07					
Arsenic	**ND**	12	EPA 6010D	11-16-20	11-16-20	
Barium	**31**	2.9	EPA 6010D	11-16-20	11-16-20	
Cadmium	**ND**	0.58	EPA 6010D	11-16-20	11-16-20	
Chromium	**18**	0.58	EPA 6010D	11-16-20	11-16-20	
Lead	**ND**	5.8	EPA 6010D	11-16-20	11-16-20	
Mercury	**ND**	0.29	EPA 7471B	11-18-20	11-18-20	
Selenium	**ND**	12	EPA 6010D	11-16-20	11-16-20	
Silver	**ND**	1.2	EPA 6010D	11-16-20	11-16-20	
Client ID:	**B2-15a**					
Laboratory ID:	11-115-08					
Arsenic	**ND**	12	EPA 6010D	11-16-20	11-16-20	
Barium	**36**	3.0	EPA 6010D	11-16-20	11-16-20	
Cadmium	**ND**	0.60	EPA 6010D	11-16-20	11-16-20	
Chromium	**18**	0.60	EPA 6010D	11-16-20	11-16-20	
Lead	**ND**	6.0	EPA 6010D	11-16-20	11-16-20	
Mercury	**ND**	0.30	EPA 7471B	11-18-20	11-18-20	
Selenium	**ND**	12	EPA 6010D	11-16-20	11-16-20	
Silver	**ND**	1.2	EPA 6010D	11-16-20	11-16-20	
Client ID:	**B5-7**					
Laboratory ID:	11-115-09					
Arsenic	**ND**	11	EPA 6010D	11-16-20	11-16-20	
Barium	**53**	2.7	EPA 6010D	11-16-20	11-16-20	
Cadmium	**ND**	0.54	EPA 6010D	11-16-20	11-16-20	
Chromium	**17**	0.54	EPA 6010D	11-16-20	11-16-20	
Lead	**ND**	5.4	EPA 6010D	11-16-20	11-16-20	
Mercury	**ND**	0.27	EPA 7471B	11-18-20	11-18-20	
Selenium	**ND**	11	EPA 6010D	11-16-20	11-16-20	
Silver	**ND**	1.1	EPA 6010D	11-16-20	11-16-20	

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Project: 1903-00129-RI

TOTAL METALS
EPA 6010D/7471B

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B5-15**					
Laboratory ID:	11-115-10					
Arsenic	**ND**	13	EPA 6010D	11-16-20	11-16-20	
Barium	**26**	3.1	EPA 6010D	11-16-20	11-16-20	
Cadmium	**ND**	0.63	EPA 6010D	11-16-20	11-16-20	
Chromium	**18**	0.63	EPA 6010D	11-16-20	11-16-20	
Lead	**ND**	6.3	EPA 6010D	11-16-20	11-16-20	
Mercury	**ND**	0.31	EPA 7471B	11-18-20	11-18-20	
Selenium	**ND**	13	EPA 6010D	11-16-20	11-16-20	
Silver	**ND**	1.3	EPA 6010D	11-16-20	11-16-20	

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TOTAL METALS
EPA 6010D/7471B
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1116SM1					
Arsenic	**ND**	10	EPA 6010D	11-16-20	11-16-20	
Barium	**ND**	2.5	EPA 6010D	11-16-20	11-16-20	
Cadmium	**ND**	0.50	EPA 6010D	11-16-20	11-16-20	
Chromium	**ND**	0.50	EPA 6010D	11-16-20	11-16-20	
Lead	**ND**	5.0	EPA 6010D	11-16-20	11-16-20	
Selenium	**ND**	10	EPA 6010D	11-16-20	11-16-20	
Silver	**ND**	1.0	EPA 6010D	11-16-20	11-16-20	
Laboratory ID:	MB1118S1					
Mercury	**ND**	0.25	EPA 7471B	11-18-20	11-18-20	

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	11-115-03									
	ORIG	DUP								
Arsenic	**ND**	**ND**	NA	NA		NA	NA	NA	20	
Barium	**54.7**	**45.8**	NA	NA		NA	NA	18	20	
Cadmium	**ND**	**ND**	NA	NA		NA	NA	NA	20	
Chromium	**21.8**	**18.8**	NA	NA		NA	NA	15	20	
Lead	**5.05**	**ND**	NA	NA		NA	NA	NA	20	
Selenium	**ND**	**ND**	NA	NA		NA	NA	NA	20	
Silver	**ND**	**ND**	NA	NA		NA	NA	NA	20	
Laboratory ID:	11-115-03									
Mercury	**ND**	**ND**	NA	NA		NA	NA	NA	20	
MATRIX SPIKES										
Laboratory ID:	11-115-03									
	MS	MSD	MS	MSD		MS	MSD			
Arsenic	**87.1**	**88.7**	100	100	ND	**87**	**89**	75-125	2	20
Barium	**140**	**146**	100	100	54.7	**85**	**92**	75-125	5	20
Cadmium	**42.8**	**43.4**	50.0	50.0	ND	**86**	**87**	75-125	2	20
Chromium	**106**	**110**	100	100	21.8	**84**	**88**	75-125	4	20
Lead	**224**	**228**	250	250	5.05	**88**	**89**	75-125	2	20
Selenium	**86.1**	**88.4**	100	100	ND	**86**	**88**	75-125	3	20
Silver	**21.5**	**21.7**	25.0	25.0	ND	**86**	**87**	75-125	1	20
Laboratory ID:	11-115-03									
Mercury	**0.441**	**0.454**	0.500	0.500	0.0179	**85**	**87**	80-120	3	20

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B7-7**					
Laboratory ID:	11-115-01					
Dichlorodifluoromethane	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
Chloromethane	ND	0.014	EPA 8260D	11-18-20	11-18-20	
Vinyl Chloride	ND	0.0027	EPA 8260D	11-18-20	11-18-20	
Bromomethane	ND	0.0095	EPA 8260D	11-18-20	11-18-20	
Chloroethane	ND	0.0095	EPA 8260D	11-18-20	11-18-20	
Trichlorofluoromethane	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethene	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
Iodomethane	ND	0.0095	EPA 8260D	11-18-20	11-18-20	
Methylene Chloride	ND	0.012	EPA 8260D	11-18-20	11-18-20	
(trans) 1,2-Dichloroethene	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
Methyl t-Butyl Ether	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethane	ND	0.0025	EPA 8260D	11-18-20	11-18-20	
2,2-Dichloropropane	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
(cis) 1,2-Dichloroethene	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
Bromochloromethane	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
Chloroform	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
1,1,1-Trichloroethane	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
Carbon Tetrachloride	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloropropene	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloroethane	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
Trichloroethene	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloropropane	ND	0.0025	EPA 8260D	11-18-20	11-18-20	
Dibromomethane	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
Bromodichloromethane	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
2-Chloroethyl Vinyl Ether	ND	0.0095	EPA 8260D	11-18-20	11-18-20	
(cis) 1,3-Dichloropropene	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
(trans) 1,3-Dichloropropene	ND	0.0019	EPA 8260D	11-18-20	11-18-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B7-7**					
Laboratory ID:	11-115-01					
1,1,2-Trichloroethane	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
Tetrachloroethene	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
1,3-Dichloropropane	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
Dibromochloromethane	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
1,2-Dibromoethane	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
Chlorobenzene	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
1,1,1,2-Tetrachloroethane	ND	0.0019	EPA 8260D	11-18-20	11-18-20	
Bromoform	ND	0.0095	EPA 8260D	11-18-20	11-18-20	
Bromobenzene	ND	0.13	EPA 8260D	11-20-20	11-20-20	
1,1,2,2-Tetrachloroethane	ND	0.13	EPA 8260D	11-20-20	11-20-20	
1,2,3-Trichloropropane	ND	0.13	EPA 8260D	11-20-20	11-20-20	
2-Chlorotoluene	ND	0.13	EPA 8260D	11-20-20	11-20-20	
4-Chlorotoluene	ND	0.13	EPA 8260D	11-20-20	11-20-20	
1,3-Dichlorobenzene	ND	0.13	EPA 8260D	11-20-20	11-20-20	
1,4-Dichlorobenzene	ND	0.13	EPA 8260D	11-20-20	11-20-20	
1,2-Dichlorobenzene	ND	0.13	EPA 8260D	11-20-20	11-20-20	
1,2-Dibromo-3-chloropropane	ND	0.65	EPA 8260D	11-20-20	11-20-20	
1,2,4-Trichlorobenzene	ND	0.13	EPA 8260D	11-20-20	11-20-20	
Hexachlorobutadiene	ND	0.65	EPA 8260D	11-20-20	11-20-20	
1,2,3-Trichlorobenzene	ND	0.13	EPA 8260D	11-20-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*99*	*74-131*				
Toluene-d8	*92*	*78-128*				
4-Bromofluorobenzene	*80*	*71-130*				

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B2-7**					
Laboratory ID:	11-115-05					
Dichlorodifluoromethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Chloromethane	ND	0.0079	EPA 8260D	11-18-20	11-18-20	
Vinyl Chloride	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
Bromomethane	ND	0.0053	EPA 8260D	11-18-20	11-18-20	
Chloroethane	ND	0.0053	EPA 8260D	11-18-20	11-18-20	
Trichlorofluoromethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Iodomethane	ND	0.0053	EPA 8260D	11-18-20	11-18-20	
Methylene Chloride	ND	0.0068	EPA 8260D	11-18-20	11-18-20	
(trans) 1,2-Dichloroethene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Methyl t-Butyl Ether	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethane	ND	0.0014	EPA 8260D	11-18-20	11-18-20	
2,2-Dichloropropane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
(cis) 1,2-Dichloroethene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Bromochloromethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Chloroform	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,1,1-Trichloroethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Carbon Tetrachloride	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloropropene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloroethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Trichloroethene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloropropane	ND	0.0014	EPA 8260D	11-18-20	11-18-20	
Dibromomethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Bromodichloromethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
2-Chloroethyl Vinyl Ether	ND	0.0053	EPA 8260D	11-18-20	11-18-20	
(cis) 1,3-Dichloropropene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
(trans) 1,3-Dichloropropene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B2-7**					
Laboratory ID:	11-115-05					
1,1,2-Trichloroethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Tetrachloroethene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,3-Dichloropropane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Dibromochloromethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,2-Dibromoethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Chlorobenzene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,1,1,2-Tetrachloroethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Bromoform	ND	0.0053	EPA 8260D	11-18-20	11-18-20	
Bromobenzene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,1,2,2-Tetrachloroethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,2,3-Trichloropropane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
2-Chlorotoluene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
4-Chlorotoluene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,3-Dichlorobenzene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,4-Dichlorobenzene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,2-Dichlorobenzene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,2-Dibromo-3-chloropropane	ND	0.0053	EPA 8260D	11-18-20	11-18-20	
1,2,4-Trichlorobenzene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Hexachlorobutadiene	ND	0.0053	EPA 8260D	11-18-20	11-18-20	
1,2,3-Trichlorobenzene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*98*	*74-131*				
Toluene-d8	*97*	*78-128*				
4-Bromofluorobenzene	*94*	*71-130*				

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B2-7a**					
Laboratory ID:	11-115-06					
Dichlorodifluoromethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Chloromethane	ND	0.0080	EPA 8260D	11-18-20	11-18-20	
Vinyl Chloride	ND	0.0015	EPA 8260D	11-18-20	11-18-20	
Bromomethane	ND	0.0054	EPA 8260D	11-18-20	11-18-20	
Chloroethane	ND	0.0054	EPA 8260D	11-18-20	11-18-20	
Trichlorofluoromethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Iodomethane	ND	0.0054	EPA 8260D	11-18-20	11-18-20	
Methylene Chloride	ND	0.0068	EPA 8260D	11-18-20	11-18-20	
(trans) 1,2-Dichloroethene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Methyl t-Butyl Ether	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethane	ND	0.0014	EPA 8260D	11-18-20	11-18-20	
2,2-Dichloropropane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
(cis) 1,2-Dichloroethene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Bromochloromethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Chloroform	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,1,1-Trichloroethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Carbon Tetrachloride	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloropropene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloroethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Trichloroethene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloropropane	ND	0.0014	EPA 8260D	11-18-20	11-18-20	
Dibromomethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Bromodichloromethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
2-Chloroethyl Vinyl Ether	ND	0.0054	EPA 8260D	11-18-20	11-18-20	
(cis) 1,3-Dichloropropene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
(trans) 1,3-Dichloropropene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B2-7a**					
Laboratory ID:	11-115-06					
1,1,2-Trichloroethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Tetrachloroethene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,3-Dichloropropane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Dibromochloromethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,2-Dibromoethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Chlorobenzene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,1,1,2-Tetrachloroethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Bromoform	ND	0.0054	EPA 8260D	11-18-20	11-18-20	
Bromobenzene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,1,2,2-Tetrachloroethane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,2,3-Trichloropropane	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
2-Chlorotoluene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
4-Chlorotoluene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,3-Dichlorobenzene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,4-Dichlorobenzene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,2-Dichlorobenzene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
1,2-Dibromo-3-chloropropane	ND	0.0054	EPA 8260D	11-18-20	11-18-20	
1,2,4-Trichlorobenzene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Hexachlorobutadiene	ND	0.0054	EPA 8260D	11-18-20	11-18-20	
1,2,3-Trichlorobenzene	ND	0.0011	EPA 8260D	11-18-20	11-18-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*100*	*74-131*				
Toluene-d8	*98*	*78-128*				
4-Bromofluorobenzene	*92*	*71-130*				

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QUALITY CONTROL
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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1118S1					
Dichlorodifluoromethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Chloromethane	ND	0.0075	EPA 8260D	11-18-20	11-18-20	
Vinyl Chloride	ND	0.0014	EPA 8260D	11-18-20	11-18-20	
Bromomethane	ND	0.0050	EPA 8260D	11-18-20	11-18-20	
Chloroethane	ND	0.0050	EPA 8260D	11-18-20	11-18-20	
Trichlorofluoromethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Iodomethane	ND	0.0050	EPA 8260D	11-18-20	11-18-20	
Methylene Chloride	ND	0.0064	EPA 8260D	11-18-20	11-18-20	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloroethane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
2,2-Dichloropropane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Bromochloromethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Chloroform	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Carbon Tetrachloride	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,1-Dichloropropene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloroethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Trichloroethene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,2-Dichloropropane	ND	0.0013	EPA 8260D	11-18-20	11-18-20	
Dibromomethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Bromodichloromethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260D	11-18-20	11-18-20	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1118S1					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Tetrachloroethene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,3-Dichloropropane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Dibromochloromethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,2-Dibromoethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Chlorobenzene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Bromoform	ND	0.0050	EPA 8260D	11-18-20	11-18-20	
Bromobenzene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
2-Chlorotoluene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
4-Chlorotoluene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260D	11-18-20	11-18-20	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Hexachlorobutadiene	ND	0.0050	EPA 8260D	11-18-20	11-18-20	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260D	11-18-20	11-18-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*96*	*74-131*				
Toluene-d8	*98*	*78-128*				
4-Bromofluorobenzene	*95*	*71-130*				

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1120S1					
Dichlorodifluoromethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Chloromethane	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
Vinyl Chloride	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Bromomethane	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
Chloroethane	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
Trichlorofluoromethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,1-Dichloroethene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Iodomethane	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
Methylene Chloride	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,1-Dichloroethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
2,2-Dichloropropane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Bromochloromethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Chloroform	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Carbon Tetrachloride	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,1-Dichloropropene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,2-Dichloroethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Trichloroethene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,2-Dichloropropane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Dibromomethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Bromodichloromethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
2-Chloroethyl Vinyl Ether	ND	0.0073	EPA 8260D	11-20-20	11-20-20	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1120S1					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Tetrachloroethene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,3-Dichloropropane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Dibromochloromethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,2-Dibromoethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Chlorobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Bromoform	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
Bromobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
2-Chlorotoluene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
4-Chlorotoluene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Hexachlorobutadiene	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*102*	*74-131*				
Toluene-d8	*100*	*78-128*				
4-Bromofluorobenzene	*100*	*71-130*				

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VOLATILE ORGANICS EPA 8260D
QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1118S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0446**	**0.0446**	0.0500	0.0500	89	89	55-126	0	17	
Benzene	**0.0400**	**0.0409**	0.0500	0.0500	80	82	65-121	2	16	
Trichloroethene	**0.0467**	**0.0475**	0.0500	0.0500	93	95	74-126	2	16	
Toluene	**0.0420**	**0.0426**	0.0500	0.0500	84	85	71-121	1	16	
Chlorobenzene	**0.0430**	**0.0445**	0.0500	0.0500	86	89	72-123	3	16	
Surrogate:										
Dibromofluoromethane					*96*	*98*	*74-131*			
Toluene-d8					*98*	*96*	*78-128*			
4-Bromofluorobenzene					*96*	*96*	*71-130*			
Laboratory ID:	SB1120S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0533**	**0.0513**	0.0500	0.0500	107	103	55-126	4	17	
Benzene	**0.0521**	**0.0503**	0.0500	0.0500	104	101	65-121	4	16	
Trichloroethene	**0.0535**	**0.0513**	0.0500	0.0500	107	103	74-126	4	16	
Toluene	**0.0525**	**0.0510**	0.0500	0.0500	105	102	71-121	3	16	
Chlorobenzene	**0.0549**	**0.0541**	0.0500	0.0500	110	108	72-123	1	16	
Surrogate:										
Dibromofluoromethane					*100*	*102*	*74-131*			
Toluene-d8					*98*	*101*	*78-128*			
4-Bromofluorobenzene					*99*	*99*	*71-130*			

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PCBs EPA 8082A

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B7-7**					
Laboratory ID:	11-115-01					
Aroclor 1016	**ND**	0.095	EPA 8082A	11-23-20	11-23-20	
Aroclor 1221	**ND**	0.095	EPA 8082A	11-23-20	11-23-20	
Aroclor 1232	**ND**	0.095	EPA 8082A	11-23-20	11-23-20	
Aroclor 1242	**ND**	0.095	EPA 8082A	11-23-20	11-23-20	
Aroclor 1248	**ND**	0.095	EPA 8082A	11-23-20	11-23-20	
Aroclor 1254	**ND**	0.095	EPA 8082A	11-23-20	11-23-20	
Aroclor 1260	**ND**	0.095	EPA 8082A	11-23-20	11-23-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*94*	*46-125*				
Client ID:	**B2-7**					
Laboratory ID:	11-115-05					
Aroclor 1016	**ND**	0.057	EPA 8082A	11-23-20	11-23-20	
Aroclor 1221	**ND**	0.057	EPA 8082A	11-23-20	11-23-20	
Aroclor 1232	**ND**	0.057	EPA 8082A	11-23-20	11-23-20	
Aroclor 1242	**ND**	0.057	EPA 8082A	11-23-20	11-23-20	
Aroclor 1248	**ND**	0.057	EPA 8082A	11-23-20	11-23-20	
Aroclor 1254	**ND**	0.057	EPA 8082A	11-23-20	11-23-20	
Aroclor 1260	**ND**	0.057	EPA 8082A	11-23-20	11-23-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*111*	*46-125*				
Client ID:	**B2-7a**					
Laboratory ID:	11-115-06					
Aroclor 1016	**ND**	0.056	EPA 8082A	11-23-20	11-23-20	
Aroclor 1221	**ND**	0.056	EPA 8082A	11-23-20	11-23-20	
Aroclor 1232	**ND**	0.056	EPA 8082A	11-23-20	11-23-20	
Aroclor 1242	**ND**	0.056	EPA 8082A	11-23-20	11-23-20	
Aroclor 1248	**ND**	0.056	EPA 8082A	11-23-20	11-23-20	
Aroclor 1254	**ND**	0.056	EPA 8082A	11-23-20	11-23-20	
Aroclor 1260	**ND**	0.056	EPA 8082A	11-23-20	11-23-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*95*	*46-125*				

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PCBs EPA 8082A
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1123S1					
Aroclor 1016	**ND**	0.050	EPA 8082A	11-23-20	11-23-20	
Aroclor 1221	**ND**	0.050	EPA 8082A	11-23-20	11-23-20	
Aroclor 1232	**ND**	0.050	EPA 8082A	11-23-20	11-23-20	
Aroclor 1242	**ND**	0.050	EPA 8082A	11-23-20	11-23-20	
Aroclor 1248	**ND**	0.050	EPA 8082A	11-23-20	11-23-20	
Aroclor 1254	**ND**	0.050	EPA 8082A	11-23-20	11-23-20	
Aroclor 1260	**ND**	0.050	EPA 8082A	11-23-20	11-23-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*114*	*46-125*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	11-099-12										
	MS	MSD	MS	MSD		MS	MSD				
Aroclor 1260	**0.512**	**0.519**	0.500	0.500	ND	**102**	**104**	43-125	1	15	
Surrogate:											
DCB						*116*	*126*	*46-125*			

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SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B7-7**					
Laboratory ID:	11-115-01					
Hexavalent Chromium	**ND**	1.9	EPA 7196A mod.	11-25-20	11-25-20	
Client ID:	**B7-15**					
Laboratory ID:	11-115-02					
Hexavalent Chromium	**ND**	1.2	EPA 7196A mod.	11-25-20	11-25-20	
Client ID:	**B6-7**					
Laboratory ID:	11-115-03					
Hexavalent Chromium	**ND**	1.2	EPA 7196A mod.	11-25-20	11-25-20	
Client ID:	**B2-7**					
Laboratory ID:	11-115-05					
Hexavalent Chromium	**ND**	1.1	EPA 7196A mod.	11-25-20	11-25-20	
Client ID:	**B2-7a**					
Laboratory ID:	11-115-06					
Hexavalent Chromium	**ND**	1.1	EPA 7196A mod.	11-25-20	11-25-20	

Date of Report: December 1, 2020
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SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1125S1					
Hexavalent Chromium	**ND**	1.0	EPA 7196A mod.	11-25-20	11-25-20	

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-099-12										
	ORIG	DUP									
Hexavalent Chromium	**ND**	**ND**	NA		NA	NA		NA	NA	20	
MATRIX SPIKES											
Laboratory ID:	11-099-12										
	MS	MSD	MS	MSD		MS	MSD				
Hexavalent Chromium	**3.18**	**3.39**	5.00	5.00	ND	64	68	75-125	6	20	V
SPIKE BLANK											
Laboratory ID:	SB1125S1										
	SB		SB			SB					
Hexavalent Chromium	**4.56**		5.00		NA	91		75-125	NA	NA	

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% MOISTURE

Client ID	Lab ID	% Moisture	Date Analyzed
B7-7	11-115-01	**47**	11-12-20
B7-15	11-115-02	**15**	11-12-20
B6-7	11-115-03	**15**	11-12-20
B6-15	11-115-04	**11**	11-12-20
B2-7	11-115-05	**12**	11-12-20
B2-7a	11-115-06	**10**	11-12-20
B2-15	11-115-07	**14**	11-12-20
B2-15a	11-115-08	**17**	11-12-20
B5-7	11-115-09	**7**	11-12-20
B5-15	11-115-10	**21**	11-12-20

OnSite Environmental Inc.

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 methods 8260 & 8270, 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

Chain of Custody

Page 1 of 1

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

Company: ENPRO Environmental
Project Number: 1903-00129-RI
Project Name: Green Cove Park Development
Project Manager: Kim Kim
Sampled by: Kenton Beal

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
☐ _____ (other)

Laboratory Number: 11-115

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	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)~~ KB 11.11.20	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~~ Hex chrome J	TCLP Metals	HEM (oil and grease) 1664A	EDC	M+BE	Polychlorinated biphenyls	% Moisture
1	B7-7	11.10.20	9:50	Soil	6		X		X		●	H		X	●				X	⊗	H		H	●	H	
2	B7-15		9:50																	⊗						
3	B6-7		12:00																	⊗						
4	B6-15		12:00																							
5	B2-7		12:45								●				●					⊗				●		
6	B2-7a		12:45								●				●					⊗				●		
7	B2-15		12:45																							
8	B2-15a		12:45																							
9	B5-7		1:30																							
10	~~B~~5-15		1:30																							

	Signature	Company	Date	Time
Relinquished	[signature]	ENPRO Environmental	11.11.20	11:10
Received	[signature]	ALPHA	11-11-20	11:10
Relinquished	[signature]	ALPHA	11-12-20	1445
Received	[signature]	ONE	11/11/20	1445
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

x = analyze
H = Hold pending further instruction
● Added 11/17/2020 - DB (STA)
⊗ Added 11/20/2020. DB (STA)

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

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

December 4, 2020

Kim Kim
EnPro Environmental
151 Hekili Street, Suite 210
Kailua, HI 96734

Re: Analytical Data for Project 1903-00129-RI
Laboratory Reference No. 2011-131

Dear Kim:

Enclosed are the analytical results and associated quality control data for samples submitted on November 13, 2020.

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,

David Baumeister
Project Manager

Enclosures

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

Case Narrative

Samples were collected on November 11, 2020 and received by the laboratory on November 13, 2020. 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/BTEX Analysis

The Method 5035A VOA vials provided for samples SS1, SS2, SS2-A, SS3, SS4, SS5, SS6, SS7, and SS8 were filled completely and therefore unusable. The samples were consequently extracted from 8-ounce jars for analysis. Some loss of volatiles may have occurred.

Volatiles EPA 8260D Analysis

The Method 5035A VOA vials provided for samples SS1, SS3, SS4, SS5, SS6 and SS7were filled completely and therefore unusable. Consequently, 5 grams of each sample was transferred from the overfilled VOA vial to a separate VOA vial containing a stir bar prior to analysis. Some loss of volatiles may have occurred.

The last internal standard for sample SS7 did not meet acceptance criteria due to sample matrix effects. Reanalysis of the sample took place after the holding time had expired which affects the compounds from Bromobenzene onward.

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: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS1**					
Laboratory ID:	11-131-01					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-17-20	
Toluene	**ND**	0.068	EPA 8021B	11-16-20	11-17-20	
Ethyl Benzene	**ND**	0.068	EPA 8021B	11-16-20	11-17-20	
m,p-Xylene	**ND**	0.068	EPA 8021B	11-16-20	11-17-20	
o-Xylene	**ND**	0.068	EPA 8021B	11-16-20	11-17-20	
Gasoline	**ND**	6.8	NWTPH-Gx	11-16-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*58-129*				
Client ID:	**SS2**					
Laboratory ID:	11-131-02					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-17-20	
Toluene	**ND**	0.051	EPA 8021B	11-16-20	11-17-20	
Ethyl Benzene	**ND**	0.051	EPA 8021B	11-16-20	11-17-20	
m,p-Xylene	**ND**	0.051	EPA 8021B	11-16-20	11-17-20	
o-Xylene	**ND**	0.051	EPA 8021B	11-16-20	11-17-20	
Gasoline	**ND**	5.1	NWTPH-Gx	11-16-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*99*	*58-129*				
Client ID:	**SS2-A**					
Laboratory ID:	11-131-03					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-17-20	
Toluene	**ND**	0.045	EPA 8021B	11-16-20	11-17-20	
Ethyl Benzene	**ND**	0.045	EPA 8021B	11-16-20	11-17-20	
m,p-Xylene	**ND**	0.045	EPA 8021B	11-16-20	11-17-20	
o-Xylene	**ND**	0.045	EPA 8021B	11-16-20	11-17-20	
Gasoline	**ND**	4.5	NWTPH-Gx	11-16-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*96*	*58-129*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS3**					
Laboratory ID:	11-131-04					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-17-20	
Toluene	**ND**	0.055	EPA 8021B	11-16-20	11-17-20	
Ethyl Benzene	**ND**	0.055	EPA 8021B	11-16-20	11-17-20	
m,p-Xylene	**ND**	0.055	EPA 8021B	11-16-20	11-17-20	
o-Xylene	**ND**	0.055	EPA 8021B	11-16-20	11-17-20	
Gasoline	**ND**	5.5	NWTPH-Gx	11-16-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*101*	*58-129*				
Client ID:	**SS4**					
Laboratory ID:	11-131-05					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-17-20	
Toluene	**ND**	0.039	EPA 8021B	11-16-20	11-17-20	
Ethyl Benzene	**ND**	0.039	EPA 8021B	11-16-20	11-17-20	
m,p-Xylene	**ND**	0.039	EPA 8021B	11-16-20	11-17-20	
o-Xylene	**ND**	0.039	EPA 8021B	11-16-20	11-17-20	
Gasoline	**ND**	3.9	NWTPH-Gx	11-16-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*58-129*				
Client ID:	**SS5**					
Laboratory ID:	11-131-06					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-17-20	
Toluene	**ND**	0.044	EPA 8021B	11-16-20	11-17-20	
Ethyl Benzene	**ND**	0.044	EPA 8021B	11-16-20	11-17-20	
m,p-Xylene	**ND**	0.044	EPA 8021B	11-16-20	11-17-20	
o-Xylene	**ND**	0.044	EPA 8021B	11-16-20	11-17-20	
Gasoline	**ND**	4.4	NWTPH-Gx	11-16-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*58-129*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS6**					
Laboratory ID:	11-131-07					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-17-20	
Toluene	**ND**	0.046	EPA 8021B	11-16-20	11-17-20	
Ethyl Benzene	**ND**	0.046	EPA 8021B	11-16-20	11-17-20	
m,p-Xylene	**ND**	0.046	EPA 8021B	11-16-20	11-17-20	
o-Xylene	**ND**	0.046	EPA 8021B	11-16-20	11-17-20	
Gasoline	**ND**	4.6	NWTPH-Gx	11-16-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*107*	*58-129*				
Client ID:	**SS7**					
Laboratory ID:	11-131-08					
Benzene	**ND**	0.024	EPA 8021B	11-16-20	11-17-20	
Toluene	**ND**	0.12	EPA 8021B	11-16-20	11-17-20	
Ethyl Benzene	**ND**	0.12	EPA 8021B	11-16-20	11-17-20	
m,p-Xylene	**ND**	0.12	EPA 8021B	11-16-20	11-17-20	
o-Xylene	**ND**	0.12	EPA 8021B	11-16-20	11-17-20	
Gasoline	**ND**	12	NWTPH-Gx	11-16-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*58-129*				
Client ID:	**SS8**					
Laboratory ID:	11-131-09					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-17-20	
Toluene	**ND**	0.061	EPA 8021B	11-16-20	11-17-20	
Ethyl Benzene	**ND**	0.061	EPA 8021B	11-16-20	11-17-20	
m,p-Xylene	**ND**	0.061	EPA 8021B	11-16-20	11-17-20	
o-Xylene	**ND**	0.061	EPA 8021B	11-16-20	11-17-20	
Gasoline	**ND**	6.1	NWTPH-Gx	11-16-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*107*	*58-129*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS9**					
Laboratory ID:	11-131-10					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-17-20	
Toluene	**ND**	0.040	EPA 8021B	11-16-20	11-17-20	
Ethyl Benzene	**ND**	0.040	EPA 8021B	11-16-20	11-17-20	
m,p-Xylene	**ND**	0.040	EPA 8021B	11-16-20	11-17-20	
o-Xylene	**ND**	0.040	EPA 8021B	11-16-20	11-17-20	
Gasoline	**ND**	4.0	NWTPH-Gx	11-16-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*102*	*58-129*				
Client ID:	**SS10**					
Laboratory ID:	11-131-11					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-17-20	
Toluene	**ND**	0.078	EPA 8021B	11-16-20	11-17-20	
Ethyl Benzene	**ND**	0.078	EPA 8021B	11-16-20	11-17-20	
m,p-Xylene	**ND**	0.078	EPA 8021B	11-16-20	11-17-20	
o-Xylene	**ND**	0.078	EPA 8021B	11-16-20	11-17-20	
Gasoline	**ND**	7.8	NWTPH-Gx	11-16-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*85*	*58-129*				
Client ID:	**SS11**					
Laboratory ID:	11-131-12					
Benzene	**ND**	0.024	EPA 8021B	11-16-20	11-17-20	
Toluene	**ND**	0.12	EPA 8021B	11-16-20	11-17-20	
Ethyl Benzene	**ND**	0.12	EPA 8021B	11-16-20	11-17-20	
m,p-Xylene	**ND**	0.12	EPA 8021B	11-16-20	11-17-20	
o-Xylene	**ND**	0.12	EPA 8021B	11-16-20	11-17-20	
Gasoline	**ND**	12	NWTPH-Gx	11-16-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*80*	*58-129*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS12**					
Laboratory ID:	11-131-13					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-17-20	
Toluene	**ND**	0.099	EPA 8021B	11-16-20	11-17-20	
Ethyl Benzene	**ND**	0.099	EPA 8021B	11-16-20	11-17-20	
m,p-Xylene	**ND**	0.099	EPA 8021B	11-16-20	11-17-20	
o-Xylene	**ND**	0.099	EPA 8021B	11-16-20	11-17-20	
Gasoline	**ND**	9.9	NWTPH-Gx	11-16-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*104*	*58-129*				
Client ID:	**SS13**					
Laboratory ID:	11-131-14					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-17-20	
Toluene	**ND**	0.049	EPA 8021B	11-16-20	11-17-20	
Ethyl Benzene	**ND**	0.049	EPA 8021B	11-16-20	11-17-20	
m,p-Xylene	**ND**	0.049	EPA 8021B	11-16-20	11-17-20	
o-Xylene	**ND**	0.049	EPA 8021B	11-16-20	11-17-20	
Gasoline	**ND**	4.9	NWTPH-Gx	11-16-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*99*	*58-129*				
Client ID:	**SS14**					
Laboratory ID:	11-131-15					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-17-20	
Toluene	**ND**	0.060	EPA 8021B	11-16-20	11-17-20	
Ethyl Benzene	**ND**	0.060	EPA 8021B	11-16-20	11-17-20	
m,p-Xylene	**ND**	0.060	EPA 8021B	11-16-20	11-17-20	
o-Xylene	**ND**	0.060	EPA 8021B	11-16-20	11-17-20	
Gasoline	**ND**	6.0	NWTPH-Gx	11-16-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*58-129*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS15**					
Laboratory ID:	11-131-16					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-17-20	
Toluene	**ND**	0.081	EPA 8021B	11-16-20	11-17-20	
Ethyl Benzene	**ND**	0.081	EPA 8021B	11-16-20	11-17-20	
m,p-Xylene	**ND**	0.081	EPA 8021B	11-16-20	11-17-20	
o-Xylene	**ND**	0.081	EPA 8021B	11-16-20	11-17-20	
Gasoline	**ND**	8.1	NWTPH-Gx	11-16-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*58-129*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1116S1					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-16-20	
Toluene	**ND**	0.050	EPA 8021B	11-16-20	11-16-20	
Ethyl Benzene	**ND**	0.050	EPA 8021B	11-16-20	11-16-20	
m,p-Xylene	**ND**	0.050	EPA 8021B	11-16-20	11-16-20	
o-Xylene	**ND**	0.050	EPA 8021B	11-16-20	11-16-20	
Gasoline	**ND**	5.0	NWTPH-Gx	11-16-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*58-129*				
Laboratory ID:	MB1116S2					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-16-20	
Toluene	**ND**	0.050	EPA 8021B	11-16-20	11-16-20	
Ethyl Benzene	**ND**	0.050	EPA 8021B	11-16-20	11-16-20	
m,p-Xylene	**ND**	0.050	EPA 8021B	11-16-20	11-16-20	
o-Xylene	**ND**	0.050	EPA 8021B	11-16-20	11-16-20	
Gasoline	**ND**	5.0	NWTPH-Gx	11-16-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*58-129*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-132-01										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*97*	*97*	*58-129*			
Laboratory ID:	11-132-02										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*94*	*94*	*58-129*			
SPIKE BLANKS											
Laboratory ID:	SB1116S2										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.942**	**0.945**	1.00	1.00		**94**	**95**	68-112	0	10	
Toluene	**0.964**	**0.967**	1.00	1.00		**96**	**97**	70-114	0	10	
Ethyl Benzene	**0.952**	**0.956**	1.00	1.00		**95**	**96**	70-115	0	10	
m,p-Xylene	**0.951**	**0.953**	1.00	1.00		**95**	**95**	69-117	0	11	
o-Xylene	**0.970**	**0.968**	1.00	1.00		**97**	**97**	71-115	0	11	
Surrogate:											
Fluorobenzene						*90*	*91*	*58-129*			

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS1**					
Laboratory ID:	11-131-01					
Diesel Range Organics	**150**	150	NWTPH-Dx	11-19-20	11-21-20	N
Lube Oil	**1800**	300	NWTPH-Dx	11-19-20	11-21-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*90*	*50-150*				
Client ID:	**SS2**					
Laboratory ID:	11-131-02					
Diesel Range Organics	**ND**	31	NWTPH-Dx	11-19-20	11-19-20	
Lube Oil Range Organics	**ND**	63	NWTPH-Dx	11-19-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*83*	*50-150*				
Client ID:	**SS2-A**					
Laboratory ID:	11-131-03					
Diesel Range Organics	**ND**	29	NWTPH-Dx	11-19-20	11-19-20	
Lube Oil Range Organics	**ND**	57	NWTPH-Dx	11-19-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*82*	*50-150*				
Client ID:	**SS3**					
Laboratory ID:	11-131-04					
Diesel Range Organics	**ND**	30	NWTPH-Dx	11-19-20	11-21-20	
Lube Oil Range Organics	**130**	59	NWTPH-Dx	11-19-20	11-21-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				
Client ID:	**SS4**					
Laboratory ID:	11-131-05					
Diesel Range Organics	**ND**	28	NWTPH-Dx	11-19-20	11-20-20	
Lube Oil Range Organics	**77**	56	NWTPH-Dx	11-19-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*93*	*50-150*				
Client ID:	**SS5**					
Laboratory ID:	11-131-06					
Diesel Range Organics	**ND**	28	NWTPH-Dx	11-19-20	11-19-20	
Lube Oil Range Organics	**80**	56	NWTPH-Dx	11-19-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*90*	*50-150*				

Date of Report: December 4, 2020
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DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS6**					
Laboratory ID:	11-131-07					
Diesel Range Organics	**ND**	31	NWTPH-Dx	11-19-20	11-19-20	
Lube Oil Range Organics	**73**	61	NWTPH-Dx	11-19-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				
Client ID:	**SS7**					
Laboratory ID:	11-131-08					
Diesel Range Organics	**ND**	43	NWTPH-Dx	11-19-20	11-19-20	
Lube Oil Range Organics	**190**	85	NWTPH-Dx	11-19-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*70*	*50-150*				
Client ID:	**SS8**					
Laboratory ID:	11-131-09					
Diesel Range Organics	**ND**	34	NWTPH-Dx	11-19-20	11-19-20	
Lube Oil Range Organics	**ND**	69	NWTPH-Dx	11-19-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*76*	*50-150*				
Client ID:	**SS9**					
Laboratory ID:	11-131-10					
Diesel Range Organics	**ND**	28	NWTPH-Dx	11-19-20	11-19-20	
Lube Oil Range Organics	**ND**	57	NWTPH-Dx	11-19-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*91*	*50-150*				
Client ID:	**SS10**					
Laboratory ID:	11-131-11					
Diesel Range Organics	**ND**	36	NWTPH-Dx	11-19-20	11-20-20	
Lube Oil Range Organics	**170**	72	NWTPH-Dx	11-19-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				
Client ID:	**SS11**					
Laboratory ID:	11-131-12					
Diesel Range Organics	**65**	45	NWTPH-Dx	11-19-20	11-21-20	N
Lube Oil Range Organics	**650**	90	NWTPH-Dx	11-19-20	11-21-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*83*	*50-150*				

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DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS12**					
Laboratory ID:	11-131-13					
Diesel Range Organics	**ND**	38	NWTPH-Dx	11-19-20	11-20-20	
Lube Oil Range Organics	**130**	75	NWTPH-Dx	11-19-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*89*	*50-150*				
Client ID:	**SS13**					
Laboratory ID:	11-131-14					
Diesel Range Organics	**ND**	31	NWTPH-Dx	11-19-20	11-19-20	
Lube Oil Range Organics	**ND**	61	NWTPH-Dx	11-19-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*90*	*50-150*				
Client ID:	**SS14**					
Laboratory ID:	11-131-15					
Diesel Range Organics	**ND**	30	NWTPH-Dx	11-19-20	11-19-20	
Lube Oil Range Organics	**69**	61	NWTPH-Dx	11-19-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*91*	*50-150*				
Client ID:	**SS15**					
Laboratory ID:	11-131-16					
Diesel Range Organics	**ND**	32	NWTPH-Dx	11-19-20	11-19-20	
Lube Oil Range Organics	**95**	64	NWTPH-Dx	11-19-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*79*	*50-150*				

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DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1119S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	11-19-20	11-19-20	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	11-19-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*92*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	11-131-02									
	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* *85*	*50-150*			
Laboratory ID:	SB1119S2									
	ORIG	DUP								
Diesel Fuel #2	**90.8**	**82.6**	NA	NA		NA	NA	9	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*94* *91*	*50-150*			

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PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS9**					
Laboratory ID:	11-131-10					
Naphthalene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
2-Methylnaphthalene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
1-Methylnaphthalene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthylene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Fluorene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Phenanthrene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Anthracene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Fluoranthene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Pyrene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]anthracene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Chrysene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[b]fluoranthene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo(j,k)fluoranthene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]pyrene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Dibenz[a,h]anthracene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[g,h,i]perylene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*102*	*46 - 113*				
Pyrene-d10	*108*	*45 - 114*				
Terphenyl-d14	*109*	*49 - 121*				

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Laboratory Reference: 2011-131
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS10**					
Laboratory ID:	11-131-11					
Naphthalene	**ND**	0.0096	EPA 8270E/SIM	11-19-20	11-20-20	
2-Methylnaphthalene	**ND**	0.0096	EPA 8270E/SIM	11-19-20	11-20-20	
1-Methylnaphthalene	**ND**	0.0096	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthylene	**0.024**	0.0096	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthene	**ND**	0.0096	EPA 8270E/SIM	11-19-20	11-20-20	
Fluorene	**ND**	0.0096	EPA 8270E/SIM	11-19-20	11-20-20	
Phenanthrene	**0.016**	0.0096	EPA 8270E/SIM	11-19-20	11-20-20	
Anthracene	**0.026**	0.0096	EPA 8270E/SIM	11-19-20	11-20-20	
Fluoranthene	**0.050**	0.0096	EPA 8270E/SIM	11-19-20	11-20-20	
Pyrene	**0.042**	0.0096	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]anthracene	**0.058**	0.0096	EPA 8270E/SIM	11-19-20	11-20-20	
Chrysene	**0.088**	0.0096	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[b]fluoranthene	**0.15**	0.0096	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo(j,k)fluoranthene	**0.031**	0.0096	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]pyrene	**0.056**	0.0096	EPA 8270E/SIM	11-19-20	11-20-20	
Indeno(1,2,3-c,d)pyrene	**0.066**	0.0096	EPA 8270E/SIM	11-19-20	11-20-20	
Dibenz[a,h]anthracene	**0.016**	0.0096	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[g,h,i]perylene	**0.055**	0.0096	EPA 8270E/SIM	11-19-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*76*	*46 - 113*				
Pyrene-d10	*90*	*45 - 114*				
Terphenyl-d14	*88*	*49 - 121*				

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PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS11**					
Laboratory ID:	11-131-12					
Naphthalene	**0.12**	0.012	EPA 8270E/SIM	11-19-20	11-20-20	
2-Methylnaphthalene	**0.078**	0.012	EPA 8270E/SIM	11-19-20	11-20-20	
1-Methylnaphthalene	**0.037**	0.012	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthylene	**0.089**	0.012	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthene	**0.027**	0.012	EPA 8270E/SIM	11-19-20	11-20-20	
Fluorene	**0.042**	0.012	EPA 8270E/SIM	11-19-20	11-20-20	
Phenanthrene	**0.40**	0.012	EPA 8270E/SIM	11-19-20	11-20-20	
Anthracene	**0.22**	0.012	EPA 8270E/SIM	11-19-20	11-20-20	
Fluoranthene	**0.52**	0.012	EPA 8270E/SIM	11-19-20	11-20-20	
Pyrene	**0.39**	0.012	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]anthracene	**0.61**	0.012	EPA 8270E/SIM	11-19-20	11-20-20	
Chrysene	**0.99**	0.012	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[b]fluoranthene	**0.89**	0.012	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo(j,k)fluoranthene	**0.26**	0.012	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]pyrene	**0.33**	0.012	EPA 8270E/SIM	11-19-20	11-20-20	
Indeno(1,2,3-c,d)pyrene	**0.15**	0.012	EPA 8270E/SIM	11-19-20	11-20-20	
Dibenz[a,h]anthracene	**0.060**	0.012	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[g,h,i]perylene	**0.19**	0.012	EPA 8270E/SIM	11-19-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*71*	*46 - 113*				
Pyrene-d10	*85*	*45 - 114*				
Terphenyl-d14	*87*	*49 - 121*				

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PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS12**					
Laboratory ID:	11-131-13					
Naphthalene	**0.014**	0.010	EPA 8270E/SIM	11-19-20	11-20-20	
2-Methylnaphthalene	**0.017**	0.010	EPA 8270E/SIM	11-19-20	11-20-20	
1-Methylnaphthalene	**0.026**	0.010	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthylene	**ND**	0.010	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthene	**ND**	0.010	EPA 8270E/SIM	11-19-20	11-20-20	
Fluorene	**ND**	0.010	EPA 8270E/SIM	11-19-20	11-20-20	
Phenanthrene	**0.054**	0.010	EPA 8270E/SIM	11-19-20	11-20-20	
Anthracene	**ND**	0.010	EPA 8270E/SIM	11-19-20	11-20-20	
Fluoranthene	**0.015**	0.010	EPA 8270E/SIM	11-19-20	11-20-20	
Pyrene	**0.022**	0.010	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]anthracene	**ND**	0.010	EPA 8270E/SIM	11-19-20	11-20-20	
Chrysene	**0.011**	0.010	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]pyrene	**ND**	0.010	EPA 8270E/SIM	11-19-20	11-20-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.010	EPA 8270E/SIM	11-19-20	11-20-20	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270E/SIM	11-19-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*79*	*46 - 113*				
Pyrene-d10	*94*	*45 - 114*				
Terphenyl-d14	*94*	*49 - 121*				

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PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS13**					
Laboratory ID:	11-131-14					
Naphthalene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
2-Methylnaphthalene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
1-Methylnaphthalene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthylene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Fluorene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Phenanthrene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Anthracene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Fluoranthene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Pyrene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]anthracene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Chrysene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[b]fluoranthene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo(j,k)fluoranthene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]pyrene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Dibenz[a,h]anthracene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[g,h,i]perylene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*89*	*46 - 113*				
Pyrene-d10	*107*	*45 - 114*				
Terphenyl-d14	*104*	*49 - 121*				

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Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS14**					
Laboratory ID:	11-131-15					
Naphthalene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
2-Methylnaphthalene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
1-Methylnaphthalene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthylene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Fluorene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Phenanthrene	**0.012**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Anthracene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Fluoranthene	**0.012**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Pyrene	**0.013**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]anthracene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Chrysene	**0.0085**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[b]fluoranthene	**0.011**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo(j,k)fluoranthene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]pyrene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Dibenz[a,h]anthracene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[g,h,i]perylene	**ND**	0.0081	EPA 8270E/SIM	11-19-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*89*	*46 - 113*				
Pyrene-d10	*100*	*45 - 114*				
Terphenyl-d14	*92*	*49 - 121*				

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PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS15**					
Laboratory ID:	11-131-16					
Naphthalene	**ND**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
2-Methylnaphthalene	**ND**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
1-Methylnaphthalene	**ND**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthylene	**ND**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthene	**ND**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Fluorene	**ND**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Phenanthrene	**0.036**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Anthracene	**ND**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Fluoranthene	**0.060**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Pyrene	**0.066**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]anthracene	**0.032**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Chrysene	**0.040**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[b]fluoranthene	**0.048**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo(j,k)fluoranthene	**0.015**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]pyrene	**0.039**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Indeno(1,2,3-c,d)pyrene	**0.024**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Dibenz[a,h]anthracene	**ND**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[g,h,i]perylene	**0.024**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*87*	*46 - 113*				
Pyrene-d10	*97*	*45 - 114*				
Terphenyl-d14	*89*	*49 - 121*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

PAHs EPA 8270E/SIM
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1119S1					
Naphthalene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Acenaphthylene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Acenaphthene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Fluorene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Phenanthrene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Anthracene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Pyrene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Chrysene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*102*	*46 - 113*				
Pyrene-d10	*94*	*45 - 114*				
Terphenyl-d14	*99*	*49 - 121*				

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PAHs EPA 8270E/SIM
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1119S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0771**	**0.0711**	0.0833	0.0833	93	85	60 - 116	8	16	
Acenaphthylene	**0.0887**	**0.0826**	0.0833	0.0833	106	99	60 - 125	7	15	
Acenaphthene	**0.0920**	**0.0869**	0.0833	0.0833	110	104	60 - 121	6	15	
Fluorene	**0.0884**	**0.0846**	0.0833	0.0833	106	102	65 - 126	4	15	
Phenanthrene	**0.0882**	**0.0831**	0.0833	0.0833	106	100	65 - 120	6	15	
Anthracene	**0.0908**	**0.0860**	0.0833	0.0833	109	103	67 - 125	5	15	
Fluoranthene	**0.0919**	**0.0903**	0.0833	0.0833	110	108	66 - 125	2	15	
Pyrene	**0.0910**	**0.0827**	0.0833	0.0833	109	99	62 - 125	10	15	
Benzo[a]anthracene	**0.0920**	**0.0900**	0.0833	0.0833	110	108	72 - 129	2	15	
Chrysene	**0.0910**	**0.0889**	0.0833	0.0833	109	107	66 - 123	2	15	
Benzo[b]fluoranthene	**0.0857**	**0.0869**	0.0833	0.0833	103	104	68 - 128	1	15	
Benzo(j,k)fluoranthene	**0.0940**	**0.0880**	0.0833	0.0833	113	106	63 - 128	7	16	
Benzo[a]pyrene	**0.0874**	**0.0835**	0.0833	0.0833	105	100	66 - 130	5	15	
Indeno(1,2,3-c,d)pyrene	**0.0856**	**0.0860**	0.0833	0.0833	103	103	63 - 135	0	15	
Dibenz[a,h]anthracene	**0.0898**	**0.0881**	0.0833	0.0833	108	106	65 - 130	2	15	
Benzo[g,h,i]perylene	**0.0892**	**0.0866**	0.0833	0.0833	107	104	66 - 127	3	15	
Surrogate:										
2-Fluorobiphenyl					*99*	*93*	*46 - 113*			
Pyrene-d10					*105*	*100*	*45 - 114*			
Terphenyl-d14					*101*	*99*	*49 - 121*			

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

TOTAL METALS
EPA 6010D/7471B

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS3**					
Laboratory ID:	11-131-04					
Arsenic	**15**	12	EPA 6010D	11-20-20	11-20-20	
Barium	**84**	3.0	EPA 6010D	11-20-20	11-20-20	
Cadmium	**0.62**	0.59	EPA 6010D	11-20-20	11-20-20	
Chromium	**31**	0.59	EPA 6010D	11-20-20	11-20-20	
Lead	**130**	5.9	EPA 6010D	11-20-20	11-20-20	
Mercury	**ND**	0.30	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	12	EPA 6010D	11-20-20	11-20-20	
Silver	**ND**	1.2	EPA 6010D	11-20-20	11-20-20	
Client ID:	**SS4**					
Laboratory ID:	11-131-05					
Arsenic	**ND**	11	EPA 6010D	11-20-20	11-20-20	
Barium	**60**	2.8	EPA 6010D	11-20-20	11-20-20	
Cadmium	**ND**	0.56	EPA 6010D	11-20-20	11-20-20	
Chromium	**21**	0.56	EPA 6010D	11-20-20	11-20-20	
Lead	**18**	5.6	EPA 6010D	11-20-20	11-20-20	
Mercury	**ND**	0.28	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	11	EPA 6010D	11-20-20	11-20-20	
Silver	**ND**	1.1	EPA 6010D	11-20-20	11-20-20	
Client ID:	**SS5**					
Laboratory ID:	11-131-06					
Arsenic	**ND**	11	EPA 6010D	11-20-20	11-20-20	
Barium	**44**	2.8	EPA 6010D	11-20-20	11-20-20	
Cadmium	**ND**	0.56	EPA 6010D	11-20-20	11-20-20	
Chromium	**16**	0.56	EPA 6010D	11-20-20	11-20-20	
Lead	**ND**	5.6	EPA 6010D	11-20-20	11-20-20	
Mercury	**ND**	0.28	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	11	EPA 6010D	11-20-20	11-20-20	
Silver	**ND**	1.1	EPA 6010D	11-20-20	11-20-20	

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Samples Submitted: November 13, 2020
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Project: 1903-00129-RI

TOTAL METALS
EPA 6010D/7471B

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS6**					
Laboratory ID:	11-131-07					
Arsenic	**ND**	12	EPA 6010D	11-20-20	11-20-20	
Barium	**63**	3.1	EPA 6010D	11-20-20	11-20-20	
Cadmium	**0.84**	0.61	EPA 6010D	11-20-20	11-20-20	
Chromium	**21**	0.61	EPA 6010D	11-20-20	11-20-20	
Lead	**16**	6.1	EPA 6010D	11-20-20	11-20-20	
Mercury	**ND**	0.31	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	12	EPA 6010D	11-20-20	11-20-20	
Silver	**ND**	1.2	EPA 6010D	11-20-20	11-20-20	
Client ID:	**SS7**					
Laboratory ID:	11-131-08					
Arsenic	**ND**	17	EPA 6010D	11-20-20	11-20-20	
Barium	**110**	4.2	EPA 6010D	11-20-20	11-20-20	
Cadmium	**ND**	0.85	EPA 6010D	11-20-20	11-20-20	
Chromium	**34**	0.85	EPA 6010D	11-20-20	11-20-20	
Lead	**15**	8.5	EPA 6010D	11-20-20	11-20-20	
Mercury	**ND**	0.42	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	17	EPA 6010D	11-20-20	11-20-20	
Silver	**ND**	1.7	EPA 6010D	11-20-20	11-20-20	
Client ID:	**SS8**					
Laboratory ID:	11-131-09					
Arsenic	**ND**	14	EPA 6010D	11-20-20	11-20-20	
Barium	**85**	3.4	EPA 6010D	11-20-20	11-20-20	
Cadmium	**ND**	0.69	EPA 6010D	11-20-20	11-20-20	
Chromium	**24**	0.69	EPA 6010D	11-20-20	11-20-20	
Lead	**9.0**	6.9	EPA 6010D	11-20-20	11-20-20	
Mercury	**ND**	0.34	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	14	EPA 6010D	11-20-20	11-20-20	
Silver	**ND**	1.4	EPA 6010D	11-20-20	11-20-20	

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Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

TOTAL METALS
EPA 6010D/7471B

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS9**					
Laboratory ID:	11-131-10					
Arsenic	**ND**	11	EPA 6010D	11-20-20	11-20-20	
Barium	**40**	2.8	EPA 6010D	11-20-20	11-20-20	
Cadmium	**ND**	0.57	EPA 6010D	11-20-20	11-20-20	
Chromium	**16**	0.57	EPA 6010D	11-20-20	11-20-20	
Lead	**ND**	5.7	EPA 6010D	11-20-20	11-20-20	
Mercury	**ND**	0.28	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	11	EPA 6010D	11-20-20	11-20-20	
Silver	**ND**	1.1	EPA 6010D	11-20-20	11-20-20	

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Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

TOTAL METALS
EPA 6010D/7471B

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS10**					
Laboratory ID:	11-131-11					
Arsenic	**ND**	14	EPA 6010D	11-20-20	11-20-20	
Barium	**180**	3.6	EPA 6010D	11-20-20	11-20-20	
Cadmium	**ND**	0.72	EPA 6010D	11-20-20	11-20-20	
Chromium	**39**	0.72	EPA 6010D	11-20-20	11-20-20	
Lead	**17**	7.2	EPA 6010D	11-20-20	11-20-20	
Mercury	**ND**	0.36	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	14	EPA 6010D	11-20-20	11-20-20	
Silver	**ND**	1.4	EPA 6010D	11-20-20	11-20-20	
Client ID:	**SS11**					
Laboratory ID:	11-131-12					
Arsenic	**ND**	18	EPA 6010D	11-20-20	11-20-20	
Barium	**89**	4.5	EPA 6010D	11-20-20	11-20-20	
Cadmium	**ND**	0.90	EPA 6010D	11-20-20	11-20-20	
Chromium	**21**	0.90	EPA 6010D	11-20-20	11-20-20	
Lead	**11**	9.0	EPA 6010D	11-20-20	11-20-20	
Mercury	**ND**	0.45	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	18	EPA 6010D	11-20-20	11-20-20	
Silver	**ND**	1.8	EPA 6010D	11-20-20	11-20-20	
Client ID:	**SS12**					
Laboratory ID:	11-131-13					
Arsenic	**ND**	15	EPA 6010D	11-20-20	11-20-20	
Barium	**70**	3.8	EPA 6010D	11-20-20	11-20-20	
Cadmium	**ND**	0.75	EPA 6010D	11-20-20	11-20-20	
Chromium	**20**	0.75	EPA 6010D	11-20-20	11-20-20	
Lead	**8.5**	7.5	EPA 6010D	11-20-20	11-20-20	
Mercury	**ND**	0.38	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	15	EPA 6010D	11-20-20	11-20-20	
Silver	**ND**	1.5	EPA 6010D	11-20-20	11-20-20	

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TOTAL METALS
EPA 6010D/7471B

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS13**					
Laboratory ID:	11-131-14					
Arsenic	**ND**	12	EPA 6010D	11-20-20	11-20-20	
Barium	**28**	3.1	EPA 6010D	11-20-20	11-20-20	
Cadmium	**ND**	0.61	EPA 6010D	11-20-20	11-20-20	
Chromium	**16**	0.61	EPA 6010D	11-20-20	11-20-20	
Lead	**ND**	6.1	EPA 6010D	11-20-20	11-20-20	
Mercury	**ND**	0.31	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	12	EPA 6010D	11-20-20	11-20-20	
Silver	**ND**	1.2	EPA 6010D	11-20-20	11-20-20	
Client ID:	**SS14**					
Laboratory ID:	11-131-15					
Arsenic	**ND**	12	EPA 6010D	11-20-20	11-20-20	
Barium	**55**	3.0	EPA 6010D	11-20-20	11-20-20	
Cadmium	**ND**	0.61	EPA 6010D	11-20-20	11-20-20	
Chromium	**23**	0.61	EPA 6010D	11-20-20	11-20-20	
Lead	**8.1**	6.1	EPA 6010D	11-20-20	11-20-20	
Mercury	**ND**	0.30	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	12	EPA 6010D	11-20-20	11-20-20	
Silver	**ND**	1.2	EPA 6010D	11-20-20	11-20-20	
Client ID:	**SS15**					
Laboratory ID:	11-131-16					
Arsenic	**ND**	13	EPA 6010D	11-20-20	11-20-20	
Barium	**64**	3.2	EPA 6010D	11-20-20	11-20-20	
Cadmium	**ND**	0.64	EPA 6010D	11-20-20	11-20-20	
Chromium	**25**	0.64	EPA 6010D	11-20-20	11-20-20	
Lead	**11**	6.4	EPA 6010D	11-20-20	11-20-20	
Mercury	**ND**	0.32	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	13	EPA 6010D	11-20-20	11-20-20	
Silver	**ND**	1.3	EPA 6010D	11-20-20	11-20-20	

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TOTAL METALS
EPA 6010D/7471B
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1120SM2					
Arsenic	**ND**	10	EPA 6010D	11-20-20	11-20-20	
Barium	**ND**	2.5	EPA 6010D	11-20-20	11-20-20	
Cadmium	**ND**	0.50	EPA 6010D	11-20-20	11-20-20	
Chromium	**ND**	0.50	EPA 6010D	11-20-20	11-20-20	
Lead	**ND**	5.0	EPA 6010D	11-20-20	11-20-20	
Selenium	**ND**	10	EPA 6010D	11-20-20	11-20-20	
Silver	**ND**	1.0	EPA 6010D	11-20-20	11-20-20	
Laboratory ID:	MB1123S2					
Mercury	**ND**	0.25	EPA 7471B	11-23-20	11-23-20	

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	11-131-05									
	ORIG	DUP								
Arsenic	**ND**	**ND**	NA	NA		NA	NA	NA	20	
Barium	**53.2**	**47.7**	NA	NA		NA	NA	11	20	
Cadmium	**ND**	**ND**	NA	NA		NA	NA	NA	20	
Chromium	**18.4**	**17.8**	NA	NA		NA	NA	4	20	
Lead	**16.0**	**14.3**	NA	NA		NA	NA	11	20	
Selenium	**ND**	**ND**	NA	NA		NA	NA	NA	20	
Silver	**ND**	**ND**	NA	NA		NA	NA	NA	20	
Laboratory ID:	11-131-05									
Mercury	**ND**	**ND**	NA	NA		NA	NA	NA	20	
MATRIX SPIKES										
Laboratory ID:	11-131-05									
	MS	MSD	MS	MSD		MS	MSD			
Arsenic	**99.4**	**95.7**	100	100	ND	**99**	**96**	75-125	4	20
Barium	**144**	**137**	100	100	53.2	**91**	**83**	75-125	5	20
Cadmium	**45.2**	**44.1**	50.0	50.0	ND	**90**	**88**	75-125	2	20
Chromium	**114**	**109**	100	100	18.4	**96**	**91**	75-125	4	20
Lead	**256**	**249**	250	250	16.0	**96**	**93**	75-125	3	20
Selenium	**98.2**	**93.9**	100	100	ND	**98**	**94**	75-125	5	20
Silver	**23.0**	**22.5**	25.0	25.0	ND	**92**	**90**	75-125	2	20
Laboratory ID:	11-131-05									
Mercury	**0.579**	**0.585**	0.500	0.500	0.0412	**108**	**109**	80-120	1	20

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS1**					
Laboratory ID:	11-131-01					
Dichlorodifluoromethane	ND	0.0024	EPA 8260D	11-25-20	11-25-20	
Chloromethane	ND	0.010	EPA 8260D	11-25-20	11-25-20	
Vinyl Chloride	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
Bromomethane	ND	0.0067	EPA 8260D	11-25-20	11-25-20	
Chloroethane	ND	0.0067	EPA 8260D	11-25-20	11-25-20	
Trichlorofluoromethane	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethene	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
Iodomethane	ND	0.0067	EPA 8260D	11-25-20	11-25-20	
Methylene Chloride	ND	0.0067	EPA 8260D	11-25-20	11-25-20	
(trans) 1,2-Dichloroethene	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
Methyl t-Butyl Ether	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethane	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
2,2-Dichloropropane	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
(cis) 1,2-Dichloroethene	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
Bromochloromethane	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
Chloroform	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
1,1,1-Trichloroethane	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
Carbon Tetrachloride	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloropropene	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloroethane	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
Trichloroethene	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloropropane	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
Dibromomethane	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
Bromodichloromethane	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
2-Chloroethyl Vinyl Ether	ND	0.0067	EPA 8260D	11-25-20	11-25-20	
(cis) 1,3-Dichloropropene	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
(trans) 1,3-Dichloropropene	ND	0.0013	EPA 8260D	11-25-20	11-25-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS1**					
Laboratory ID:	11-131-01					
1,1,2-Trichloroethane	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
Tetrachloroethene	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
1,3-Dichloropropane	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
Dibromochloromethane	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromoethane	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
Chlorobenzene	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
1,1,1,2-Tetrachloroethane	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
Bromoform	ND	0.0067	EPA 8260D	11-25-20	11-25-20	
Bromobenzene	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
1,1,2,2-Tetrachloroethane	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichloropropane	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
2-Chlorotoluene	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
4-Chlorotoluene	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
1,3-Dichlorobenzene	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
1,4-Dichlorobenzene	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
1,2-Dichlorobenzene	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromo-3-chloropropane	ND	0.0067	EPA 8260D	11-25-20	11-25-20	
1,2,4-Trichlorobenzene	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
Hexachlorobutadiene	ND	0.0067	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichlorobenzene	ND	0.0013	EPA 8260D	11-25-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*118*	*74-131*				
Toluene-d8	*110*	*78-128*				
4-Bromofluorobenzene	*91*	*71-130*				

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS3**					
Laboratory ID:	11-131-04					
Dichlorodifluoromethane	ND	0.0019	EPA 8260D	11-25-20	11-25-20	
Chloromethane	ND	0.0081	EPA 8260D	11-25-20	11-25-20	
Vinyl Chloride	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Bromomethane	ND	0.0052	EPA 8260D	11-25-20	11-25-20	
Chloroethane	ND	0.0052	EPA 8260D	11-25-20	11-25-20	
Trichlorofluoromethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Iodomethane	ND	0.0052	EPA 8260D	11-25-20	11-25-20	
Methylene Chloride	ND	0.0052	EPA 8260D	11-25-20	11-25-20	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
2,2-Dichloropropane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Bromochloromethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Chloroform	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Carbon Tetrachloride	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloropropene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloroethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Trichloroethene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloropropane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Dibromomethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Bromodichloromethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
2-Chloroethyl Vinyl Ether	ND	0.0052	EPA 8260D	11-25-20	11-25-20	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS3**					
Laboratory ID:	11-131-04					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Tetrachloroethene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,3-Dichloropropane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Dibromochloromethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromoethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Chlorobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Bromoform	ND	0.0052	EPA 8260D	11-25-20	11-25-20	
Bromobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
2-Chlorotoluene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
4-Chlorotoluene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromo-3-chloropropane	ND	0.0052	EPA 8260D	11-25-20	11-25-20	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Hexachlorobutadiene	ND	0.0052	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*117*	*74-131*				
Toluene-d8	*111*	*78-128*				
4-Bromofluorobenzene	*86*	*71-130*				

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS4**					
Laboratory ID:	11-131-05					
Dichlorodifluoromethane	ND	0.0021	EPA 8260D	11-25-20	11-25-20	
Chloromethane	ND	0.0089	EPA 8260D	11-25-20	11-25-20	
Vinyl Chloride	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Bromomethane	ND	0.0058	EPA 8260D	11-25-20	11-25-20	
Chloroethane	ND	0.0058	EPA 8260D	11-25-20	11-25-20	
Trichlorofluoromethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Iodomethane	ND	0.0058	EPA 8260D	11-25-20	11-25-20	
Methylene Chloride	ND	0.0058	EPA 8260D	11-25-20	11-25-20	
(trans) 1,2-Dichloroethene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Methyl t-Butyl Ether	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
2,2-Dichloropropane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
(cis) 1,2-Dichloroethene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Bromochloromethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Chloroform	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,1,1-Trichloroethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Carbon Tetrachloride	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloropropene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloroethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Trichloroethene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloropropane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Dibromomethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Bromodichloromethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
2-Chloroethyl Vinyl Ether	ND	0.0058	EPA 8260D	11-25-20	11-25-20	
(cis) 1,3-Dichloropropene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
(trans) 1,3-Dichloropropene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS4**					
Laboratory ID:	11-131-05					
1,1,2-Trichloroethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Tetrachloroethene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,3-Dichloropropane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Dibromochloromethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromoethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Chlorobenzene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,1,1,2-Tetrachloroethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Bromoform	ND	0.0058	EPA 8260D	11-25-20	11-25-20	
Bromobenzene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,1,2,2-Tetrachloroethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichloropropane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
2-Chlorotoluene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
4-Chlorotoluene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,3-Dichlorobenzene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,4-Dichlorobenzene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,2-Dichlorobenzene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromo-3-chloropropane	ND	0.0058	EPA 8260D	11-25-20	11-25-20	
1,2,4-Trichlorobenzene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Hexachlorobutadiene	ND	0.0058	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichlorobenzene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*114*	*74-131*				
Toluene-d8	*109*	*78-128*				
4-Bromofluorobenzene	*89*	*71-130*				

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS5**					
Laboratory ID:	11-131-06					
Dichlorodifluoromethane	ND	0.0018	EPA 8260D	11-25-20	11-25-20	
Chloromethane	ND	0.0078	EPA 8260D	11-25-20	11-25-20	
Vinyl Chloride	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Bromomethane	ND	0.0051	EPA 8260D	11-25-20	11-25-20	
Chloroethane	ND	0.0051	EPA 8260D	11-25-20	11-25-20	
Trichlorofluoromethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Iodomethane	ND	0.0051	EPA 8260D	11-25-20	11-25-20	
Methylene Chloride	ND	0.0051	EPA 8260D	11-25-20	11-25-20	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
2,2-Dichloropropane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Bromochloromethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Chloroform	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Carbon Tetrachloride	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloropropene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloroethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Trichloroethene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloropropane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Dibromomethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Bromodichloromethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
2-Chloroethyl Vinyl Ether	ND	0.0051	EPA 8260D	11-25-20	11-25-20	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS5**					
Laboratory ID:	11-131-06					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Tetrachloroethene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,3-Dichloropropane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Dibromochloromethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromoethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Chlorobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Bromoform	ND	0.0051	EPA 8260D	11-25-20	11-25-20	
Bromobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
2-Chlorotoluene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
4-Chlorotoluene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromo-3-chloropropane	ND	0.0051	EPA 8260D	11-25-20	11-25-20	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Hexachlorobutadiene	ND	0.0051	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*115*	*74-131*				
Toluene-d8	*107*	*78-128*				
4-Bromofluorobenzene	*87*	*71-130*				

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS6**					
Laboratory ID:	11-131-07					
Dichlorodifluoromethane	ND	0.0022	EPA 8260D	11-25-20	11-25-20	
Chloromethane	ND	0.0095	EPA 8260D	11-25-20	11-25-20	
Vinyl Chloride	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Bromomethane	ND	0.0062	EPA 8260D	11-25-20	11-25-20	
Chloroethane	ND	0.0062	EPA 8260D	11-25-20	11-25-20	
Trichlorofluoromethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Iodomethane	ND	0.0062	EPA 8260D	11-25-20	11-25-20	
Methylene Chloride	ND	0.0062	EPA 8260D	11-25-20	11-25-20	
(trans) 1,2-Dichloroethene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Methyl t-Butyl Ether	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
2,2-Dichloropropane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
(cis) 1,2-Dichloroethene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Bromochloromethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Chloroform	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,1,1-Trichloroethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Carbon Tetrachloride	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloropropene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloroethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Trichloroethene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloropropane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Dibromomethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Bromodichloromethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
2-Chloroethyl Vinyl Ether	ND	0.0062	EPA 8260D	11-25-20	11-25-20	
(cis) 1,3-Dichloropropene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
(trans) 1,3-Dichloropropene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS6**					
Laboratory ID:	11-131-07					
1,1,2-Trichloroethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Tetrachloroethene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,3-Dichloropropane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Dibromochloromethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromoethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Chlorobenzene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,1,1,2-Tetrachloroethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Bromoform	ND	0.0062	EPA 8260D	11-25-20	11-25-20	
Bromobenzene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,1,2,2-Tetrachloroethane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichloropropane	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
2-Chlorotoluene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
4-Chlorotoluene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,3-Dichlorobenzene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,4-Dichlorobenzene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,2-Dichlorobenzene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromo-3-chloropropane	ND	0.0062	EPA 8260D	11-25-20	11-25-20	
1,2,4-Trichlorobenzene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Hexachlorobutadiene	ND	0.0062	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichlorobenzene	ND	0.0012	EPA 8260D	11-25-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*119*	*74-131*				
Toluene-d8	*111*	*78-128*				
4-Bromofluorobenzene	*97*	*71-130*				

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS7**					
Laboratory ID:	11-131-08					
Dichlorodifluoromethane	ND	0.0028	EPA 8260D	11-25-20	11-25-20	
Chloromethane	ND	0.012	EPA 8260D	11-25-20	11-25-20	
Vinyl Chloride	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
Bromomethane	ND	0.0079	EPA 8260D	11-25-20	11-25-20	
Chloroethane	ND	0.0079	EPA 8260D	11-25-20	11-25-20	
Trichlorofluoromethane	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethene	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
Iodomethane	ND	0.0079	EPA 8260D	11-25-20	11-25-20	
Methylene Chloride	ND	0.0079	EPA 8260D	11-25-20	11-25-20	
(trans) 1,2-Dichloroethene	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
Methyl t-Butyl Ether	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethane	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
2,2-Dichloropropane	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
(cis) 1,2-Dichloroethene	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
Bromochloromethane	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
Chloroform	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
1,1,1-Trichloroethane	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
Carbon Tetrachloride	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloropropene	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloroethane	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
Trichloroethene	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloropropane	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
Dibromomethane	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
Bromodichloromethane	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
2-Chloroethyl Vinyl Ether	ND	0.0079	EPA 8260D	11-25-20	11-25-20	
(cis) 1,3-Dichloropropene	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
(trans) 1,3-Dichloropropene	ND	0.0016	EPA 8260D	11-25-20	11-25-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS7**					
Laboratory ID:	11-131-08					
1,1,2-Trichloroethane	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
Tetrachloroethene	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
1,3-Dichloropropane	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
Dibromochloromethane	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromoethane	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
Chlorobenzene	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
1,1,1,2-Tetrachloroethane	ND	0.0016	EPA 8260D	11-25-20	11-25-20	
Bromoform	ND	0.0079	EPA 8260D	11-25-20	11-25-20	
Bromobenzene	ND	0.12	EPA 8260D	11-30-20	11-30-20	
1,1,2,2-Tetrachloroethane	ND	0.12	EPA 8260D	11-30-20	11-30-20	
1,2,3-Trichloropropane	ND	0.12	EPA 8260D	11-30-20	11-30-20	
2-Chlorotoluene	ND	0.12	EPA 8260D	11-30-20	11-30-20	
4-Chlorotoluene	ND	0.12	EPA 8260D	11-30-20	11-30-20	
1,3-Dichlorobenzene	ND	0.12	EPA 8260D	11-30-20	11-30-20	
1,4-Dichlorobenzene	ND	0.12	EPA 8260D	11-30-20	11-30-20	
1,2-Dichlorobenzene	ND	0.12	EPA 8260D	11-30-20	11-30-20	
1,2-Dibromo-3-chloropropane	ND	0.60	EPA 8260D	11-30-20	11-30-20	
1,2,4-Trichlorobenzene	ND	0.12	EPA 8260D	11-30-20	11-30-20	
Hexachlorobutadiene	ND	0.60	EPA 8260D	11-30-20	11-30-20	
1,2,3-Trichlorobenzene	ND	0.12	EPA 8260D	11-30-20	11-30-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*120*	*74-131*				
Toluene-d8	*110*	*78-128*				
4-Bromofluorobenzene	*78*	*71-130*				

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS10**					
Laboratory ID:	11-131-11					
Dichlorodifluoromethane	ND	0.0019	EPA 8260D	11-25-20	11-25-20	
Chloromethane	ND	0.0083	EPA 8260D	11-25-20	11-25-20	
Vinyl Chloride	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
Bromomethane	ND	0.0054	EPA 8260D	11-25-20	11-25-20	
Chloroethane	ND	0.0054	EPA 8260D	11-25-20	11-25-20	
Trichlorofluoromethane	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethene	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
Iodomethane	ND	0.0054	EPA 8260D	11-25-20	11-25-20	
Methylene Chloride	ND	0.0054	EPA 8260D	11-25-20	11-25-20	
(trans) 1,2-Dichloroethene	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
Methyl t-Butyl Ether	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethane	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
2,2-Dichloropropane	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
(cis) 1,2-Dichloroethene	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
Bromochloromethane	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
Chloroform	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
1,1,1-Trichloroethane	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
Carbon Tetrachloride	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloropropene	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloroethane	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
Trichloroethene	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloropropane	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
Dibromomethane	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
Bromodichloromethane	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
2-Chloroethyl Vinyl Ether	ND	0.0054	EPA 8260D	11-25-20	11-25-20	
(cis) 1,3-Dichloropropene	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
(trans) 1,3-Dichloropropene	ND	0.0011	EPA 8260D	11-25-20	11-25-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS10**					
Laboratory ID:	11-131-11					
1,1,2-Trichloroethane	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
Tetrachloroethene	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
1,3-Dichloropropane	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
Dibromochloromethane	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromoethane	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
Chlorobenzene	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
1,1,1,2-Tetrachloroethane	ND	0.0011	EPA 8260D	11-25-20	11-25-20	
Bromoform	ND	0.0054	EPA 8260D	11-25-20	11-25-20	
Bromobenzene	ND	0.078	EPA 8260D	11-25-20	11-25-20	
1,1,2,2-Tetrachloroethane	ND	0.078	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichloropropane	ND	0.078	EPA 8260D	11-25-20	11-25-20	
2-Chlorotoluene	ND	0.078	EPA 8260D	11-25-20	11-25-20	
4-Chlorotoluene	ND	0.078	EPA 8260D	11-25-20	11-25-20	
1,3-Dichlorobenzene	ND	0.078	EPA 8260D	11-25-20	11-25-20	
1,4-Dichlorobenzene	ND	0.078	EPA 8260D	11-25-20	11-25-20	
1,2-Dichlorobenzene	ND	0.078	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromo-3-chloropropane	ND	0.39	EPA 8260D	11-25-20	11-25-20	
1,2,4-Trichlorobenzene	ND	0.078	EPA 8260D	11-25-20	11-25-20	
Hexachlorobutadiene	ND	0.39	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichlorobenzene	ND	0.078	EPA 8260D	11-25-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*114*	*74-131*				
Toluene-d8	*99*	*78-128*				
4-Bromofluorobenzene	*73*	*71-130*				

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS11**					
Laboratory ID:	11-131-12					
Dichlorodifluoromethane	ND	0.0031	EPA 8260D	11-25-20	11-25-20	
Chloromethane	ND	0.013	EPA 8260D	11-25-20	11-25-20	
Vinyl Chloride	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
Bromomethane	ND	0.0085	EPA 8260D	11-25-20	11-25-20	
Chloroethane	ND	0.0085	EPA 8260D	11-25-20	11-25-20	
Trichlorofluoromethane	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethene	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
Iodomethane	ND	0.0085	EPA 8260D	11-25-20	11-25-20	
Methylene Chloride	ND	0.0085	EPA 8260D	11-25-20	11-25-20	
(trans) 1,2-Dichloroethene	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
Methyl t-Butyl Ether	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethane	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
2,2-Dichloropropane	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
(cis) 1,2-Dichloroethene	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
Bromochloromethane	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
Chloroform	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
1,1,1-Trichloroethane	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
Carbon Tetrachloride	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloropropene	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloroethane	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
Trichloroethene	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloropropane	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
Dibromomethane	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
Bromodichloromethane	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
2-Chloroethyl Vinyl Ether	ND	0.0085	EPA 8260D	11-25-20	11-25-20	
(cis) 1,3-Dichloropropene	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
(trans) 1,3-Dichloropropene	ND	0.0017	EPA 8260D	11-25-20	11-25-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS11**					
Laboratory ID:	11-131-12					
1,1,2-Trichloroethane	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
Tetrachloroethene	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
1,3-Dichloropropane	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
Dibromochloromethane	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromoethane	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
Chlorobenzene	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
1,1,1,2-Tetrachloroethane	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
Bromoform	ND	0.0085	EPA 8260D	11-25-20	11-25-20	
Bromobenzene	ND	0.12	EPA 8260D	11-25-20	11-25-20	
1,1,2,2-Tetrachloroethane	ND	0.12	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichloropropane	ND	0.12	EPA 8260D	11-25-20	11-25-20	
2-Chlorotoluene	ND	0.12	EPA 8260D	11-25-20	11-25-20	
4-Chlorotoluene	ND	0.12	EPA 8260D	11-25-20	11-25-20	
1,3-Dichlorobenzene	ND	0.12	EPA 8260D	11-25-20	11-25-20	
1,4-Dichlorobenzene	ND	0.12	EPA 8260D	11-25-20	11-25-20	
1,2-Dichlorobenzene	ND	0.12	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromo-3-chloropropane	ND	0.59	EPA 8260D	11-25-20	11-25-20	
1,2,4-Trichlorobenzene	ND	0.12	EPA 8260D	11-25-20	11-25-20	
Hexachlorobutadiene	ND	0.59	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichlorobenzene	ND	0.12	EPA 8260D	11-25-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*121*	*74-131*				
Toluene-d8	*108*	*78-128*				
4-Bromofluorobenzene	*76*	*71-130*				

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS12**					
Laboratory ID:	11-131-13					
Dichlorodifluoromethane	ND	0.0017	EPA 8260D	11-25-20	11-25-20	
Chloromethane	ND	0.0072	EPA 8260D	11-25-20	11-25-20	
Vinyl Chloride	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
Bromomethane	ND	0.0047	EPA 8260D	11-25-20	11-25-20	
Chloroethane	ND	0.0047	EPA 8260D	11-25-20	11-25-20	
Trichlorofluoromethane	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethene	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
Iodomethane	ND	0.0047	EPA 8260D	11-25-20	11-25-20	
Methylene Chloride	ND	0.0047	EPA 8260D	11-25-20	11-25-20	
(trans) 1,2-Dichloroethene	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
Methyl t-Butyl Ether	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethane	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
2,2-Dichloropropane	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
(cis) 1,2-Dichloroethene	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
Bromochloromethane	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
Chloroform	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
1,1,1-Trichloroethane	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
Carbon Tetrachloride	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloropropene	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloroethane	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
Trichloroethene	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloropropane	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
Dibromomethane	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
Bromodichloromethane	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
2-Chloroethyl Vinyl Ether	ND	0.0047	EPA 8260D	11-25-20	11-25-20	
(cis) 1,3-Dichloropropene	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
(trans) 1,3-Dichloropropene	ND	0.00094	EPA 8260D	11-25-20	11-25-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS12**					
Laboratory ID:	11-131-13					
1,1,2-Trichloroethane	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
Tetrachloroethene	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
1,3-Dichloropropane	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
Dibromochloromethane	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromoethane	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
Chlorobenzene	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
1,1,1,2-Tetrachloroethane	ND	0.00094	EPA 8260D	11-25-20	11-25-20	
Bromoform	ND	0.0047	EPA 8260D	11-25-20	11-25-20	
Bromobenzene	ND	0.062	EPA 8260D	11-25-20	11-25-20	
1,1,2,2-Tetrachloroethane	ND	0.062	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichloropropane	ND	0.062	EPA 8260D	11-25-20	11-25-20	
2-Chlorotoluene	ND	0.062	EPA 8260D	11-25-20	11-25-20	
4-Chlorotoluene	ND	0.062	EPA 8260D	11-25-20	11-25-20	
1,3-Dichlorobenzene	ND	0.062	EPA 8260D	11-25-20	11-25-20	
1,4-Dichlorobenzene	ND	0.062	EPA 8260D	11-25-20	11-25-20	
1,2-Dichlorobenzene	ND	0.062	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromo-3-chloropropane	ND	0.31	EPA 8260D	11-25-20	11-25-20	
1,2,4-Trichlorobenzene	ND	0.062	EPA 8260D	11-25-20	11-25-20	
Hexachlorobutadiene	ND	0.31	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichlorobenzene	ND	0.062	EPA 8260D	11-25-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*119*	*74-131*				
Toluene-d8	*107*	*78-128*				
4-Bromofluorobenzene	*83*	*71-130*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS14**					
Laboratory ID:	11-131-15					
Dichlorodifluoromethane	ND	0.00091	EPA 8260D	11-25-20	11-25-20	
Chloromethane	ND	0.0039	EPA 8260D	11-25-20	11-25-20	
Vinyl Chloride	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
Bromomethane	ND	0.0025	EPA 8260D	11-25-20	11-25-20	
Chloroethane	ND	0.0025	EPA 8260D	11-25-20	11-25-20	
Trichlorofluoromethane	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethene	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
Iodomethane	ND	0.0025	EPA 8260D	11-25-20	11-25-20	
Methylene Chloride	ND	0.0025	EPA 8260D	11-25-20	11-25-20	
(trans) 1,2-Dichloroethene	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
Methyl t-Butyl Ether	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethane	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
2,2-Dichloropropane	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
(cis) 1,2-Dichloroethene	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
Bromochloromethane	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
Chloroform	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
1,1,1-Trichloroethane	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
Carbon Tetrachloride	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloropropene	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloroethane	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
Trichloroethene	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloropropane	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
Dibromomethane	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
Bromodichloromethane	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
2-Chloroethyl Vinyl Ether	ND	0.0025	EPA 8260D	11-25-20	11-25-20	
(cis) 1,3-Dichloropropene	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
(trans) 1,3-Dichloropropene	ND	0.00051	EPA 8260D	11-25-20	11-25-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS14**					
Laboratory ID:	11-131-15					
1,1,2-Trichloroethane	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
Tetrachloroethene	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
1,3-Dichloropropane	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
Dibromochloromethane	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromoethane	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
Chlorobenzene	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
1,1,1,2-Tetrachloroethane	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
Bromoform	ND	0.0025	EPA 8260D	11-25-20	11-25-20	
Bromobenzene	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
1,1,2,2-Tetrachloroethane	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichloropropane	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
2-Chlorotoluene	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
4-Chlorotoluene	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
1,3-Dichlorobenzene	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
1,4-Dichlorobenzene	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
1,2-Dichlorobenzene	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromo-3-chloropropane	ND	0.0025	EPA 8260D	11-25-20	11-25-20	
1,2,4-Trichlorobenzene	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
Hexachlorobutadiene	ND	0.0025	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichlorobenzene	ND	0.00051	EPA 8260D	11-25-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*114*	*74-131*				
Toluene-d8	*106*	*78-128*				
4-Bromofluorobenzene	*86*	*71-130*				

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1125S1					
Dichlorodifluoromethane	ND	0.0018	EPA 8260D	11-25-20	11-25-20	
Chloromethane	ND	0.0077	EPA 8260D	11-25-20	11-25-20	
Vinyl Chloride	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Bromomethane	ND	0.0050	EPA 8260D	11-25-20	11-25-20	
Chloroethane	ND	0.0050	EPA 8260D	11-25-20	11-25-20	
Trichlorofluoromethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Iodomethane	ND	0.0050	EPA 8260D	11-25-20	11-25-20	
Methylene Chloride	ND	0.0050	EPA 8260D	11-25-20	11-25-20	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
2,2-Dichloropropane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Bromochloromethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Chloroform	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Carbon Tetrachloride	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloropropene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloroethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Trichloroethene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloropropane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Dibromomethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Bromodichloromethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260D	11-25-20	11-25-20	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1125S1					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Tetrachloroethene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,3-Dichloropropane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Dibromochloromethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromoethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Chlorobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Bromoform	ND	0.0050	EPA 8260D	11-25-20	11-25-20	
Bromobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
2-Chlorotoluene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
4-Chlorotoluene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260D	11-25-20	11-25-20	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Hexachlorobutadiene	ND	0.0050	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260D	11-25-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*117*	*74-131*				
Toluene-d8	*107*	*78-128*				
4-Bromofluorobenzene	*96*	*71-130*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1130S2					
Dichlorodifluoromethane	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
Chloromethane	ND	0.0050	EPA 8260D	11-30-20	11-30-20	
Vinyl Chloride	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
Bromomethane	ND	0.0050	EPA 8260D	11-30-20	11-30-20	
Chloroethane	ND	0.0050	EPA 8260D	11-30-20	11-30-20	
Trichlorofluoromethane	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
1,1-Dichloroethene	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
Iodomethane	ND	0.0050	EPA 8260D	11-30-20	11-30-20	
Methylene Chloride	ND	0.0050	EPA 8260D	11-30-20	11-30-20	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
1,1-Dichloroethane	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
2,2-Dichloropropane	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
Bromochloromethane	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
Chloroform	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
Carbon Tetrachloride	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
1,1-Dichloropropene	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
1,2-Dichloroethane	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
Trichloroethene	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
1,2-Dichloropropane	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
Dibromomethane	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
Bromodichloromethane	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260D	11-30-20	11-30-20	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	11-30-20	11-30-20	

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Samples Submitted: November 13, 2020
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Project: 1903-00129-RI

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1130S2					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
Tetrachloroethene	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
1,3-Dichloropropane	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
Dibromochloromethane	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
1,2-Dibromoethane	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
Chlorobenzene	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
Bromoform	ND	0.0050	EPA 8260D	11-30-20	11-30-20	
Bromobenzene	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
2-Chlorotoluene	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
4-Chlorotoluene	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260D	11-30-20	11-30-20	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
Hexachlorobutadiene	ND	0.0050	EPA 8260D	11-30-20	11-30-20	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260D	11-30-20	11-30-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*107*	*74-131*				
Toluene-d8	*98*	*78-128*				
4-Bromofluorobenzene	*96*	*71-130*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

VOLATILE ORGANICS EPA 8260D
QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1125S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0458**	**0.0477**	0.0500	0.0500	92	95	55-126	4	17	
Benzene	**0.0486**	**0.0500**	0.0500	0.0500	97	100	65-121	3	16	
Trichloroethene	**0.0527**	**0.0595**	0.0500	0.0500	105	119	74-126	12	16	
Toluene	**0.0453**	**0.0497**	0.0500	0.0500	91	99	71-121	9	16	
Chlorobenzene	**0.0510**	**0.0536**	0.0500	0.0500	102	107	72-123	5	16	
Surrogate:										
Dibromofluoromethane					*111*	*109*	*74-131*			
Toluene-d8					*106*	*106*	*78-128*			
4-Bromofluorobenzene					*97*	*96*	*71-130*			
Laboratory ID:	SB1130S2									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0514**	**0.0510**	0.0500	0.0500	103	102	55-126	1	17	
Benzene	**0.0537**	**0.0529**	0.0500	0.0500	107	106	65-121	2	16	
Trichloroethene	**0.0601**	**0.0591**	0.0500	0.0500	120	118	74-126	2	16	
Toluene	**0.0505**	**0.0492**	0.0500	0.0500	101	98	71-121	3	16	
Chlorobenzene	**0.0562**	**0.0552**	0.0500	0.0500	112	110	72-123	2	16	
Surrogate:										
Dibromofluoromethane					*100*	*99*	*74-131*			
Toluene-d8					*100*	*93*	*78-128*			
4-Bromofluorobenzene					*100*	*95*	*71-130*			

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS1**					
Laboratory ID:	11-131-01					
Naphthalene	**0.010**	0.0080	EPA 8270E/SIM	11-25-20	11-30-20	
2-Methylnaphthalene	**ND**	0.0080	EPA 8270E/SIM	11-25-20	11-30-20	
1-Methylnaphthalene	**ND**	0.0080	EPA 8270E/SIM	11-25-20	11-30-20	
Acenaphthylene	**ND**	0.0080	EPA 8270E/SIM	11-25-20	11-30-20	
Acenaphthene	**ND**	0.0080	EPA 8270E/SIM	11-25-20	11-30-20	
Fluorene	**ND**	0.0080	EPA 8270E/SIM	11-25-20	11-30-20	
Phenanthrene	**0.013**	0.0080	EPA 8270E/SIM	11-25-20	11-30-20	
Anthracene	**ND**	0.0080	EPA 8270E/SIM	11-25-20	11-30-20	
Fluoranthene	**0.014**	0.0080	EPA 8270E/SIM	11-25-20	11-30-20	
Pyrene	**0.015**	0.0080	EPA 8270E/SIM	11-25-20	11-30-20	
Benzo[a]anthracene	**ND**	0.0080	EPA 8270E/SIM	11-25-20	11-30-20	
Chrysene	**0.015**	0.0080	EPA 8270E/SIM	11-25-20	11-30-20	
Benzo[b]fluoranthene	**0.014**	0.0080	EPA 8270E/SIM	11-25-20	11-30-20	
Benzo(j,k)fluoranthene	**ND**	0.0080	EPA 8270E/SIM	11-25-20	11-30-20	
Benzo[a]pyrene	**0.0093**	0.0080	EPA 8270E/SIM	11-25-20	11-30-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0080	EPA 8270E/SIM	11-25-20	11-30-20	
Dibenz[a,h]anthracene	**ND**	0.0080	EPA 8270E/SIM	11-25-20	11-30-20	
Benzo[g,h,i]perylene	**ND**	0.0080	EPA 8270E/SIM	11-25-20	11-30-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*74*	*46 - 113*				
Pyrene-d10	*77*	*45 - 114*				
Terphenyl-d14	*80*	*49 - 121*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS3**					
Laboratory ID:	11-131-04					
Naphthalene	**0.081**	0.016	EPA 8270E/SIM	11-25-20	11-25-20	
2-Methylnaphthalene	**0.044**	0.016	EPA 8270E/SIM	11-25-20	11-25-20	
1-Methylnaphthalene	**ND**	0.016	EPA 8270E/SIM	11-25-20	11-25-20	
Acenaphthylene	**0.045**	0.016	EPA 8270E/SIM	11-25-20	11-25-20	
Acenaphthene	**ND**	0.016	EPA 8270E/SIM	11-25-20	11-25-20	
Fluorene	**ND**	0.016	EPA 8270E/SIM	11-25-20	11-25-20	
Phenanthrene	**0.10**	0.016	EPA 8270E/SIM	11-25-20	11-25-20	
Anthracene	**0.056**	0.016	EPA 8270E/SIM	11-25-20	11-25-20	
Fluoranthene	**0.17**	0.016	EPA 8270E/SIM	11-25-20	11-25-20	
Pyrene	**0.17**	0.016	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[a]anthracene	**0.074**	0.016	EPA 8270E/SIM	11-25-20	11-25-20	
Chrysene	**0.081**	0.016	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[b]fluoranthene	**0.10**	0.016	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo(j,k)fluoranthene	**0.031**	0.016	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[a]pyrene	**0.089**	0.016	EPA 8270E/SIM	11-25-20	11-25-20	
Indeno(1,2,3-c,d)pyrene	**0.067**	0.016	EPA 8270E/SIM	11-25-20	11-25-20	
Dibenz[a,h]anthracene	**ND**	0.016	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[g,h,i]perylene	**0.074**	0.016	EPA 8270E/SIM	11-25-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*75*	*46 - 113*				
Pyrene-d10	*87*	*45 - 114*				
Terphenyl-d14	*82*	*49 - 121*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS4**					
Laboratory ID:	11-131-05					
Naphthalene	**ND**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
2-Methylnaphthalene	**ND**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
1-Methylnaphthalene	**ND**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Acenaphthylene	**0.017**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Acenaphthene	**ND**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Fluorene	**ND**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Phenanthrene	**0.037**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Anthracene	**0.014**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Fluoranthene	**0.066**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Pyrene	**0.090**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[a]anthracene	**0.037**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Chrysene	**0.044**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[b]fluoranthene	**0.044**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo(j,k)fluoranthene	**0.016**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[a]pyrene	**0.046**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Indeno(1,2,3-c,d)pyrene	**0.028**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Dibenz[a,h]anthracene	**ND**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[g,h,i]perylene	**0.028**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*88*	*46 - 113*				
Pyrene-d10	*97*	*45 - 114*				
Terphenyl-d14	*93*	*49 - 121*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS5**					
Laboratory ID:	11-131-06					
Naphthalene	**ND**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
2-Methylnaphthalene	**ND**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
1-Methylnaphthalene	**ND**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Acenaphthylene	**ND**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Acenaphthene	**ND**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Fluorene	**ND**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Phenanthrene	**0.011**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Anthracene	**ND**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Fluoranthene	**0.012**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Pyrene	**0.014**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[a]anthracene	**ND**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Chrysene	**0.0083**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[b]fluoranthene	**0.012**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo(j,k)fluoranthene	**ND**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[a]pyrene	**0.0084**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Dibenz[a,h]anthracene	**ND**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[g,h,i]perylene	**ND**	0.0075	EPA 8270E/SIM	11-25-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*84*	*46 - 113*				
Pyrene-d10	*104*	*45 - 114*				
Terphenyl-d14	*91*	*49 - 121*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS6**					
Laboratory ID:	11-131-07					
Naphthalene	**0.015**	0.0082	EPA 8270E/SIM	11-25-20	11-25-20	
2-Methylnaphthalene	**ND**	0.0082	EPA 8270E/SIM	11-25-20	11-25-20	
1-Methylnaphthalene	**ND**	0.0082	EPA 8270E/SIM	11-25-20	11-25-20	
Acenaphthylene	**ND**	0.0082	EPA 8270E/SIM	11-25-20	11-25-20	
Acenaphthene	**ND**	0.0082	EPA 8270E/SIM	11-25-20	11-25-20	
Fluorene	**ND**	0.0082	EPA 8270E/SIM	11-25-20	11-25-20	
Phenanthrene	**0.053**	0.0082	EPA 8270E/SIM	11-25-20	11-25-20	
Anthracene	**0.011**	0.0082	EPA 8270E/SIM	11-25-20	11-25-20	
Fluoranthene	**0.077**	0.0082	EPA 8270E/SIM	11-25-20	11-25-20	
Pyrene	**0.081**	0.0082	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[a]anthracene	**0.044**	0.0082	EPA 8270E/SIM	11-25-20	11-25-20	
Chrysene	**0.049**	0.0082	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[b]fluoranthene	**0.071**	0.0082	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo(j,k)fluoranthene	**0.019**	0.0082	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[a]pyrene	**0.050**	0.0082	EPA 8270E/SIM	11-25-20	11-25-20	
Indeno(1,2,3-c,d)pyrene	**0.038**	0.0082	EPA 8270E/SIM	11-25-20	11-25-20	
Dibenz[a,h]anthracene	**ND**	0.0082	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[g,h,i]perylene	**0.037**	0.0082	EPA 8270E/SIM	11-25-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*80*	*46 - 113*				
Pyrene-d10	*100*	*45 - 114*				
Terphenyl-d14	*93*	*49 - 121*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS7**					
Laboratory ID:	11-131-08					
Naphthalene	**ND**	0.011	EPA 8270E/SIM	11-25-20	11-25-20	
2-Methylnaphthalene	**ND**	0.011	EPA 8270E/SIM	11-25-20	11-25-20	
1-Methylnaphthalene	**ND**	0.011	EPA 8270E/SIM	11-25-20	11-25-20	
Acenaphthylene	**ND**	0.011	EPA 8270E/SIM	11-25-20	11-25-20	
Acenaphthene	**ND**	0.011	EPA 8270E/SIM	11-25-20	11-25-20	
Fluorene	**ND**	0.011	EPA 8270E/SIM	11-25-20	11-25-20	
Phenanthrene	**0.016**	0.011	EPA 8270E/SIM	11-25-20	11-25-20	
Anthracene	**0.013**	0.011	EPA 8270E/SIM	11-25-20	11-25-20	
Fluoranthene	**0.043**	0.011	EPA 8270E/SIM	11-25-20	11-25-20	
Pyrene	**0.042**	0.011	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[a]anthracene	**0.019**	0.011	EPA 8270E/SIM	11-25-20	11-25-20	
Chrysene	**0.042**	0.011	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[b]fluoranthene	**0.033**	0.011	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo(j,k)fluoranthene	**ND**	0.011	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[a]pyrene	**0.016**	0.011	EPA 8270E/SIM	11-25-20	11-25-20	
Indeno(1,2,3-c,d)pyrene	**0.013**	0.011	EPA 8270E/SIM	11-25-20	11-25-20	
Dibenz[a,h]anthracene	**ND**	0.011	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[g,h,i]perylene	**ND**	0.011	EPA 8270E/SIM	11-25-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*71*	*46 - 113*				
Pyrene-d10	*88*	*45 - 114*				
Terphenyl-d14	*78*	*49 - 121*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

PAHs EPA 8270E/SIM
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1125S1					
Naphthalene	**ND**	0.0067	EPA 8270E/SIM	11-25-20	11-25-20	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270E/SIM	11-25-20	11-25-20	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270E/SIM	11-25-20	11-25-20	
Acenaphthylene	**ND**	0.0067	EPA 8270E/SIM	11-25-20	11-25-20	
Acenaphthene	**ND**	0.0067	EPA 8270E/SIM	11-25-20	11-25-20	
Fluorene	**ND**	0.0067	EPA 8270E/SIM	11-25-20	11-25-20	
Phenanthrene	**ND**	0.0067	EPA 8270E/SIM	11-25-20	11-25-20	
Anthracene	**ND**	0.0067	EPA 8270E/SIM	11-25-20	11-25-20	
Fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-25-20	11-25-20	
Pyrene	**ND**	0.0067	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270E/SIM	11-25-20	11-25-20	
Chrysene	**ND**	0.0067	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270E/SIM	11-25-20	11-25-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270E/SIM	11-25-20	11-25-20	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270E/SIM	11-25-20	11-25-20	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270E/SIM	11-25-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*97*	*46 - 113*				
Pyrene-d10	*104*	*45 - 114*				
Terphenyl-d14	*94*	*49 - 121*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

PAHs EPA 8270E/SIM
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:	11-131-07										
	MS	MSD	MS	MSD		MS	MSD				
Naphthalene	**0.0695**	**0.0701**	0.0833	0.0833	0.0123	69	69	51 - 115	1	26	
Acenaphthylene	**0.0788**	**0.0763**	0.0833	0.0833	ND	95	92	53 - 121	3	24	
Acenaphthene	**0.0728**	**0.0787**	0.0833	0.0833	ND	87	94	52 - 121	8	25	
Fluorene	**0.0823**	**0.0855**	0.0833	0.0833	ND	99	103	58 - 127	4	23	
Phenanthrene	**0.103**	**0.0999**	0.0833	0.0833	0.0431	72	68	46 - 129	3	28	
Anthracene	**0.0847**	**0.0844**	0.0833	0.0833	0.00856	91	91	57 - 124	0	21	
Fluoranthene	**0.135**	**0.121**	0.0833	0.0833	0.0629	87	70	46 - 136	11	29	
Pyrene	**0.130**	**0.113**	0.0833	0.0833	0.0660	77	56	41 - 136	14	32	
Benzo[a]anthracene	**0.110**	**0.100**	0.0833	0.0833	0.0360	89	77	56 - 136	10	25	
Chrysene	**0.108**	**0.104**	0.0833	0.0833	0.0398	82	77	49 - 130	4	22	
Benzo[b]fluoranthene	**0.122**	**0.119**	0.0833	0.0833	0.0578	77	73	51 - 135	2	26	
Benzo(j,k)fluoranthene	**0.0995**	**0.0892**	0.0833	0.0833	0.0153	101	89	56 - 124	11	23	
Benzo[a]pyrene	**0.120**	**0.112**	0.0833	0.0833	0.0404	96	86	54 - 133	7	26	
Indeno(1,2,3-c,d)pyrene	**0.107**	**0.107**	0.0833	0.0833	0.0307	92	92	52 - 134	0	20	
Dibenz[a,h]anthracene	**0.0927**	**0.0915**	0.0833	0.0833	ND	111	110	58 - 127	1	17	
Benzo[g,h,i]perylene	**0.104**	**0.100**	0.0833	0.0833	0.0300	89	84	54 - 129	4	21	
Surrogate:											
2-Fluorobiphenyl						*80*	*80*	*46 - 113*			
Pyrene-d10						*93*	*91*	*45 - 114*			
Terphenyl-d14						*89*	*87*	*49 - 121*			

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

PCBs EPA 8082A

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS1**					
Laboratory ID:	11-131-01					
Aroclor 1016	**ND**	0.060	EPA 8082A	11-19-20	11-25-20	
Aroclor 1221	**ND**	0.060	EPA 8082A	11-19-20	11-25-20	
Aroclor 1232	**ND**	0.060	EPA 8082A	11-19-20	11-25-20	
Aroclor 1242	**ND**	0.060	EPA 8082A	11-19-20	11-25-20	
Aroclor 1248	**ND**	0.060	EPA 8082A	11-19-20	11-25-20	
Aroclor 1254	**ND**	0.060	EPA 8082A	11-19-20	11-25-20	
Aroclor 1260	**ND**	0.060	EPA 8082A	11-19-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*81*	*46-125*				
Client ID:	**SS3**					
Laboratory ID:	11-131-04					
Aroclor 1016	**ND**	0.059	EPA 8082A	11-19-20	11-25-20	
Aroclor 1221	**ND**	0.059	EPA 8082A	11-19-20	11-25-20	
Aroclor 1232	**ND**	0.059	EPA 8082A	11-19-20	11-25-20	
Aroclor 1242	**ND**	0.059	EPA 8082A	11-19-20	11-25-20	
Aroclor 1248	**ND**	0.059	EPA 8082A	11-19-20	11-25-20	
Aroclor 1254	**ND**	0.059	EPA 8082A	11-19-20	11-25-20	
Aroclor 1260	**ND**	0.059	EPA 8082A	11-19-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*104*	*46-125*				
Client ID:	**SS4**					
Laboratory ID:	11-131-05					
Aroclor 1016	**ND**	0.056	EPA 8082A	11-19-20	11-25-20	
Aroclor 1221	**ND**	0.056	EPA 8082A	11-19-20	11-25-20	
Aroclor 1232	**ND**	0.056	EPA 8082A	11-19-20	11-25-20	
Aroclor 1242	**ND**	0.056	EPA 8082A	11-19-20	11-25-20	
Aroclor 1248	**ND**	0.056	EPA 8082A	11-19-20	11-25-20	
Aroclor 1254	**ND**	0.056	EPA 8082A	11-19-20	11-25-20	
Aroclor 1260	**ND**	0.056	EPA 8082A	11-19-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*111*	*46-125*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

PCBs EPA 8082A

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS5**					
Laboratory ID:	11-131-06					
Aroclor 1016	**ND**	0.056	EPA 8082A	11-19-20	11-25-20	
Aroclor 1221	**ND**	0.056	EPA 8082A	11-19-20	11-25-20	
Aroclor 1232	**ND**	0.056	EPA 8082A	11-19-20	11-25-20	
Aroclor 1242	**ND**	0.056	EPA 8082A	11-19-20	11-25-20	
Aroclor 1248	**ND**	0.056	EPA 8082A	11-19-20	11-25-20	
Aroclor 1254	**ND**	0.056	EPA 8082A	11-19-20	11-25-20	
Aroclor 1260	**ND**	0.056	EPA 8082A	11-19-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*103*	*46-125*				
Client ID:	**SS6**					
Laboratory ID:	11-131-07					
Aroclor 1016	**ND**	0.061	EPA 8082A	11-19-20	11-25-20	
Aroclor 1221	**ND**	0.061	EPA 8082A	11-19-20	11-25-20	
Aroclor 1232	**ND**	0.061	EPA 8082A	11-19-20	11-25-20	
Aroclor 1242	**ND**	0.061	EPA 8082A	11-19-20	11-25-20	
Aroclor 1248	**ND**	0.061	EPA 8082A	11-19-20	11-25-20	
Aroclor 1254	**ND**	0.061	EPA 8082A	11-19-20	11-25-20	
Aroclor 1260	**ND**	0.061	EPA 8082A	11-19-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*98*	*46-125*				
Client ID:	**SS7**					
Laboratory ID:	11-131-08					
Aroclor 1016	**ND**	0.085	EPA 8082A	11-19-20	11-25-20	
Aroclor 1221	**ND**	0.085	EPA 8082A	11-19-20	11-25-20	
Aroclor 1232	**ND**	0.085	EPA 8082A	11-19-20	11-25-20	
Aroclor 1242	**ND**	0.085	EPA 8082A	11-19-20	11-25-20	
Aroclor 1248	**ND**	0.085	EPA 8082A	11-19-20	11-25-20	
Aroclor 1254	**ND**	0.085	EPA 8082A	11-19-20	11-25-20	
Aroclor 1260	**ND**	0.085	EPA 8082A	11-19-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*72*	*46-125*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

PCBs EPA 8082A

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS10**					
Laboratory ID:	11-131-11					
Aroclor 1016	**ND**	0.072	EPA 8082A	11-19-20	11-25-20	
Aroclor 1221	**ND**	0.072	EPA 8082A	11-19-20	11-25-20	
Aroclor 1232	**ND**	0.072	EPA 8082A	11-19-20	11-25-20	
Aroclor 1242	**ND**	0.072	EPA 8082A	11-19-20	11-25-20	
Aroclor 1248	**ND**	0.072	EPA 8082A	11-19-20	11-25-20	
Aroclor 1254	**ND**	0.072	EPA 8082A	11-19-20	11-25-20	
Aroclor 1260	**ND**	0.072	EPA 8082A	11-19-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*114*	*46-125*				
Client ID:	**SS11**					
Laboratory ID:	11-131-12					
Aroclor 1016	**ND**	0.090	EPA 8082A	11-19-20	11-25-20	
Aroclor 1221	**ND**	0.090	EPA 8082A	11-19-20	11-25-20	
Aroclor 1232	**ND**	0.090	EPA 8082A	11-19-20	11-25-20	
Aroclor 1242	**ND**	0.090	EPA 8082A	11-19-20	11-25-20	
Aroclor 1248	**ND**	0.090	EPA 8082A	11-19-20	11-25-20	
Aroclor 1254	**ND**	0.090	EPA 8082A	11-19-20	11-25-20	
Aroclor 1260	**ND**	0.090	EPA 8082A	11-19-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*107*	*46-125*				
Client ID:	**SS12**					
Laboratory ID:	11-131-13					
Aroclor 1016	**ND**	0.075	EPA 8082A	11-19-20	11-25-20	
Aroclor 1221	**ND**	0.075	EPA 8082A	11-19-20	11-25-20	
Aroclor 1232	**ND**	0.075	EPA 8082A	11-19-20	11-25-20	
Aroclor 1242	**ND**	0.075	EPA 8082A	11-19-20	11-25-20	
Aroclor 1248	**ND**	0.075	EPA 8082A	11-19-20	11-25-20	
Aroclor 1254	**ND**	0.075	EPA 8082A	11-19-20	11-25-20	
Aroclor 1260	**ND**	0.075	EPA 8082A	11-19-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*112*	*46-125*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

PCBs EPA 8082A

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS14**					
Laboratory ID:	11-131-15					
Aroclor 1016	**ND**	0.061	EPA 8082A	11-19-20	11-25-20	
Aroclor 1221	**ND**	0.061	EPA 8082A	11-19-20	11-25-20	
Aroclor 1232	**ND**	0.061	EPA 8082A	11-19-20	11-25-20	
Aroclor 1242	**ND**	0.061	EPA 8082A	11-19-20	11-25-20	
Aroclor 1248	**ND**	0.061	EPA 8082A	11-19-20	11-25-20	
Aroclor 1254	**ND**	0.061	EPA 8082A	11-19-20	11-25-20	
Aroclor 1260	**ND**	0.061	EPA 8082A	11-19-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*106*	*46-125*				

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

PCBs EPA 8082A
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1119S2					
Aroclor 1016	**ND**	0.050	EPA 8082A	11-19-20	11-25-20	
Aroclor 1221	**ND**	0.050	EPA 8082A	11-19-20	11-25-20	
Aroclor 1232	**ND**	0.050	EPA 8082A	11-19-20	11-25-20	
Aroclor 1242	**ND**	0.050	EPA 8082A	11-19-20	11-25-20	
Aroclor 1248	**ND**	0.050	EPA 8082A	11-19-20	11-25-20	
Aroclor 1254	**ND**	0.050	EPA 8082A	11-19-20	11-25-20	
Aroclor 1260	**ND**	0.050	EPA 8082A	11-19-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*115*	*46-125*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB1119S2										
	SB	SBD	SB	SBD		SB	SBD				
Aroclor 1260	**0.600**	**0.581**	0.500	0.500	N/A	**120**	**116**	50-134	3	18	
Surrogate:											
DCB						*118*	*121*	*46-125*			

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

TOTAL LEAD
EPA 6010D

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS1**					
Laboratory ID:	11-131-01					
Lead	**17**	6.0	EPA 6010D	12-2-20	12-2-20	

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

TOTAL LEAD
EPA 6010D
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1202SM1					
Lead	**ND**	5.0	EPA 6010D	12-2-20	12-2-20	

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-131-01										
	ORIG	DUP									
Lead	**14.5**	**12.7**	NA	NA		NA		NA	14	20	
MATRIX SPIKES											
Laboratory ID:	11-131-01										
	MS	MSD	MS	MSD		MS	MSD				
Lead	**250**	**240**	250	250	14.5	**94**	**90**	75-125	4	20	

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

TCLP LEAD
EPA 1311/6010D

Matrix: TCLP Extract
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS3**					
Laboratory ID:	11-131-04					
Lead	**ND**	0.20	EPA 6010D	12-2-20	12-2-20	

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

TCLP LEAD
EPA 1311/6010D
QUALITY CONTROL

Matrix: TCLP Extract
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1202TM1					
Lead	**ND**	0.20	EPA 6010D	12-2-20	12-2-20	

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-079-07										
	ORIG	DUP									
Lead	**0.290**	**0.262**	NA	NA		NA		NA	10	20	
MATRIX SPIKES											
Laboratory ID:	11-079-07										
	MS	MSD	MS	MSD		MS	MSD				
Lead	**9.86**	**9.87**	10.0	10.0	0.290	**96**	**96**	75-125	0	20	

Date of Report: December 4, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-131
Project: 1903-00129-RI

% MOISTURE

Client ID	Lab ID	% Moisture	Date Analyzed
SS1	11-131-01	**16**	11-18-20
SS2	11-131-02	**20**	11-18-20
SS2-A	11-131-03	**13**	11-18-20
SS3	11-131-04	**16**	11-18-20
SS4	11-131-05	**11**	11-18-20
SS5	11-131-06	**11**	11-18-20
SS6	11-131-07	**19**	11-18-20
SS7	11-131-08	**41**	11-18-20
SS8	11-131-09	**27**	11-18-20
SS9	11-131-10	**12**	11-18-20
SS10	11-131-11	**30**	11-18-20
SS11	11-131-12	**44**	11-18-20
SS12	11-131-13	**34**	11-18-20
SS13	11-131-14	**18**	11-18-20
SS14	11-131-15	**17**	11-18-20
SS15	11-131-16	**22**	11-18-20

OnSite Environmental Inc.

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 methods 8260 & 8270, 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

Laboratory Number: 11-131

Company: ENPRO ENVIRONMENTAL
Project Number: 1903-00129-R1
Project Name: GREEN COVE PARK
Project Manager: KIM KIM
Sampled by: HOANG ROSARIO

Turnaround Request (in working days) (Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
☐ ______ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	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)~~ KE 11/12/2020	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 LEAD	TCLP Metals LEAD	~~HEM (oil and grease) 1664A~~ TOTAL Cu	EDC	MTBE	DIOXINS/FURANS	TOTAL Pb	% Moisture
1	SS1	11/4/2020	800	SOIL	6		X		X		●	H		●	●					●			H	●		H	X
2	SS2	|	815	|	|		|		|		|	|		|	|								|	|		|	|
3	SS2-A	|	830	|	|		|		|		|	|		|	|								|	|		|	|
4	SS3	|	900	|	|		X		X		●	H		●	●				X		●		H	●			|
5	SS4	|	915	|	|		|		|		●	|		●	●				|	~~●~~	~~●~~ NO		|	●			|
6	SS5	|	930	|	|		X		X		●	H		●	●				X	~~●~~ NO	H		H	●			|
7	SS6	|	945	|	|		|		|		●	|		●	●				|	~~●~~ NO	|		|	●			|
8	SS7	|	1000	|	|		X		X		●	H		●	●				X		H		H	●			|
9	SS8	|	1015	|	|		|		|		|	|		|	|				|		|		|	|			|
10	SS9	|	1030	|	|		X		X		H	H		X	H				X		H		H	H			|

	Signature	Company	Date	Time
Relinquished	[signature]	ENPRO Environmental	11/13/2020	820
Received	[signature]	AIRLAN	11/13	825
Relinquished	[signature]	11	11/13	10:06
Received	[signature]	OSE	11/13/20	1000
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

X = TO BE ANALYZED
H = HOLD PENDING FURTHER INSTRUCTION
● Added 11/25/2020. DB (STA)

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

Chain of Custody

Page 2 of 2

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

Laboratory Number: 11-131

Company: ENPRO ENVIRONMENTAL
Project Number: 1903-00129-R1
Project Name: GREEN COVE PARK
Project Manager: KIM KIM
Sampled by: HOANO ROSARIO

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	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)~~ 11/12/2020	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	EDC	MTBE	DIOXINS/FURANS	TOTAL PB	% Moisture
11	SS10	11/11/2020	1045	SOIL	6		X		X		H	H		⊗	H				X		H		H	H			X
12	SS11		1100								H				H									H			
13	SS12		1115								H				H									H			
14	SS13		1230				X		X		H	H		X	H				X		H		H	H			
15	SS14		1245								H				H									H			
16	SS15		1300								H				H									H			
	LAST ENTRY																										

	Signature	Company	Date	Time
Relinquished		ENPRO ENVIRONMENTAL	11/13/2020	820
Received				
Relinquished				
Received		CORE	11/13/20	1000
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

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

November 25, 2020

Kim Kim
EnPro Environmental
151 Hekili Street, Suite 210
Kailua, HI 96734

Re: Analytical Data for Project 1903-00129-RI
Laboratory Reference No. 2011-132

Dear Kim:

Enclosed are the analytical results and associated quality control data for samples submitted on November 13, 2020.

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,

David Baumeister
Project Manager

Enclosures

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

Case Narrative

Samples were collected on November 11, 2020 and received by the laboratory on November 13, 2020. 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: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS16**					
Laboratory ID:	11-132-01					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-16-20	
Toluene	**ND**	0.071	EPA 8021B	11-16-20	11-16-20	
Ethyl Benzene	**ND**	0.071	EPA 8021B	11-16-20	11-16-20	
m,p-Xylene	**ND**	0.071	EPA 8021B	11-16-20	11-16-20	
o-Xylene	**ND**	0.071	EPA 8021B	11-16-20	11-16-20	
Gasoline	**ND**	7.1	NWTPH-Gx	11-16-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*58-129*				
Client ID:	**SS17**					
Laboratory ID:	11-132-02					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-16-20	
Toluene	**ND**	0.050	EPA 8021B	11-16-20	11-16-20	
Ethyl Benzene	**ND**	0.050	EPA 8021B	11-16-20	11-16-20	
m,p-Xylene	**ND**	0.050	EPA 8021B	11-16-20	11-16-20	
o-Xylene	**ND**	0.050	EPA 8021B	11-16-20	11-16-20	
Gasoline	**ND**	5.0	NWTPH-Gx	11-16-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*58-129*				
Client ID:	**SS18**					
Laboratory ID:	11-132-03					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-16-20	
Toluene	**ND**	0.042	EPA 8021B	11-16-20	11-16-20	
Ethyl Benzene	**ND**	0.042	EPA 8021B	11-16-20	11-16-20	
m,p-Xylene	**ND**	0.042	EPA 8021B	11-16-20	11-16-20	
o-Xylene	**ND**	0.042	EPA 8021B	11-16-20	11-16-20	
Gasoline	**ND**	4.2	NWTPH-Gx	11-16-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*58-129*				

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS19**					
Laboratory ID:	11-132-04					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-16-20	
Toluene	**ND**	0.038	EPA 8021B	11-16-20	11-16-20	
Ethyl Benzene	**ND**	0.038	EPA 8021B	11-16-20	11-16-20	
m,p-Xylene	**ND**	0.038	EPA 8021B	11-16-20	11-16-20	
o-Xylene	**ND**	0.038	EPA 8021B	11-16-20	11-16-20	
Gasoline	**ND**	3.8	NWTPH-Gx	11-16-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*88*	*58-129*				
Client ID:	**SS20**					
Laboratory ID:	11-132-05					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-16-20	
Toluene	**ND**	0.047	EPA 8021B	11-16-20	11-16-20	
Ethyl Benzene	**ND**	0.047	EPA 8021B	11-16-20	11-16-20	
m,p-Xylene	**ND**	0.047	EPA 8021B	11-16-20	11-16-20	
o-Xylene	**ND**	0.047	EPA 8021B	11-16-20	11-16-20	
Gasoline	**ND**	4.7	NWTPH-Gx	11-16-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*58-129*				
Client ID:	**SS20-A**					
Laboratory ID:	11-132-06					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-16-20	
Toluene	**ND**	0.060	EPA 8021B	11-16-20	11-16-20	
Ethyl Benzene	**ND**	0.060	EPA 8021B	11-16-20	11-16-20	
m,p-Xylene	**ND**	0.060	EPA 8021B	11-16-20	11-16-20	
o-Xylene	**ND**	0.060	EPA 8021B	11-16-20	11-16-20	
Gasoline	**ND**	6.0	NWTPH-Gx	11-16-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*58-129*				

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS21**					
Laboratory ID:	11-132-07					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-16-20	
Toluene	**ND**	0.035	EPA 8021B	11-16-20	11-16-20	
Ethyl Benzene	**ND**	0.035	EPA 8021B	11-16-20	11-16-20	
m,p-Xylene	**ND**	0.035	EPA 8021B	11-16-20	11-16-20	
o-Xylene	**ND**	0.035	EPA 8021B	11-16-20	11-16-20	
Gasoline	**ND**	3.5	NWTPH-Gx	11-16-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*88*	*58-129*				
Client ID:	**SS22**					
Laboratory ID:	11-132-08					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-16-20	
Toluene	**ND**	0.045	EPA 8021B	11-16-20	11-16-20	
Ethyl Benzene	**ND**	0.045	EPA 8021B	11-16-20	11-16-20	
m,p-Xylene	**ND**	0.045	EPA 8021B	11-16-20	11-16-20	
o-Xylene	**ND**	0.045	EPA 8021B	11-16-20	11-16-20	
Gasoline	**ND**	4.5	NWTPH-Gx	11-16-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*58-129*				
Client ID:	**SS23**					
Laboratory ID:	11-132-09					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-16-20	
Toluene	**ND**	0.064	EPA 8021B	11-16-20	11-16-20	
Ethyl Benzene	**ND**	0.064	EPA 8021B	11-16-20	11-16-20	
m,p-Xylene	**ND**	0.064	EPA 8021B	11-16-20	11-16-20	
o-Xylene	**ND**	0.064	EPA 8021B	11-16-20	11-16-20	
Gasoline	**ND**	6.4	NWTPH-Gx	11-16-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*105*	*58-129*				

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS24**					
Laboratory ID:	11-132-10					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-16-20	
Toluene	**ND**	0.045	EPA 8021B	11-16-20	11-16-20	
Ethyl Benzene	**ND**	0.045	EPA 8021B	11-16-20	11-16-20	
m,p-Xylene	**ND**	0.045	EPA 8021B	11-16-20	11-16-20	
o-Xylene	**ND**	0.045	EPA 8021B	11-16-20	11-16-20	
Gasoline	**ND**	4.5	NWTPH-Gx	11-16-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*106*	*58-129*				
Client ID:	**SS25**					
Laboratory ID:	11-132-11					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-16-20	
Toluene	**ND**	0.055	EPA 8021B	11-16-20	11-16-20	
Ethyl Benzene	**ND**	0.055	EPA 8021B	11-16-20	11-16-20	
m,p-Xylene	**ND**	0.055	EPA 8021B	11-16-20	11-16-20	
o-Xylene	**ND**	0.055	EPA 8021B	11-16-20	11-16-20	
Gasoline	**ND**	5.5	NWTPH-Gx	11-16-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*58-129*				

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1116S2					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-16-20	
Toluene	**ND**	0.050	EPA 8021B	11-16-20	11-16-20	
Ethyl Benzene	**ND**	0.050	EPA 8021B	11-16-20	11-16-20	
m,p-Xylene	**ND**	0.050	EPA 8021B	11-16-20	11-16-20	
o-Xylene	**ND**	0.050	EPA 8021B	11-16-20	11-16-20	
Gasoline	**ND**	5.0	NWTPH-Gx	11-16-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*58-129*				
Laboratory ID:	MB1116S3					
Benzene	**ND**	0.020	EPA 8021B	11-16-20	11-16-20	
Toluene	**ND**	0.050	EPA 8021B	11-16-20	11-16-20	
Ethyl Benzene	**ND**	0.050	EPA 8021B	11-16-20	11-16-20	
m,p-Xylene	**ND**	0.050	EPA 8021B	11-16-20	11-16-20	
o-Xylene	**ND**	0.050	EPA 8021B	11-16-20	11-16-20	
Gasoline	**ND**	5.0	NWTPH-Gx	11-16-20	11-16-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*58-129*				

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-136-01										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*87*	*87*	*58-129*			
Laboratory ID:	11-132-01										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*97*	*97*	*58-129*			
SPIKE BLANKS											
Laboratory ID:	SB1116S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.950**	**0.930**	1.00	1.00		**95**	**93**	68-112	2	10	
Toluene	**0.976**	**0.953**	1.00	1.00		**98**	**95**	70-114	2	10	
Ethyl Benzene	**0.966**	**0.947**	1.00	1.00		**97**	**95**	70-115	2	10	
m,p-Xylene	**0.966**	**0.952**	1.00	1.00		**97**	**95**	69-117	1	11	
o-Xylene	**0.979**	**0.958**	1.00	1.00		**98**	**96**	71-115	2	11	
Surrogate:											
Fluorobenzene						*94*	*91*	*58-129*			

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS16**					
Laboratory ID:	11-132-01					
Diesel Range Organics	**ND**	30	NWTPH-Dx	11-17-20	11-17-20	
Lube Oil Range Organics	**ND**	60	NWTPH-Dx	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*81*	*50-150*				
Client ID:	**SS17**					
Laboratory ID:	11-132-02					
Diesel Range Organics	**ND**	29	NWTPH-Dx	11-17-20	11-17-20	
Lube Oil Range Organics	**ND**	57	NWTPH-Dx	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*82*	*50-150*				
Client ID:	**SS18**					
Laboratory ID:	11-132-03					
Diesel Range Organics	**ND**	28	NWTPH-Dx	11-17-20	11-17-20	
Lube Oil Range Organics	**ND**	57	NWTPH-Dx	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*90*	*50-150*				
Client ID:	**SS19**					
Laboratory ID:	11-132-04					
Diesel Range Organics	**ND**	27	NWTPH-Dx	11-17-20	11-17-20	
Lube Oil Range Organics	**ND**	53	NWTPH-Dx	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*71*	*50-150*				
Client ID:	**SS20**					
Laboratory ID:	11-132-05					
Diesel Range Organics	**ND**	31	NWTPH-Dx	11-17-20	11-17-20	
Lube Oil Range Organics	**ND**	62	NWTPH-Dx	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*85*	*50-150*				
Client ID:	**SS20-A**					
Laboratory ID:	11-132-06					
Diesel Range Organics	**ND**	31	NWTPH-Dx	11-17-20	11-17-20	
Lube Oil Range Organics	**ND**	62	NWTPH-Dx	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*82*	*50-150*				

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS21**					
Laboratory ID:	11-132-07					
Diesel Range Organics	**ND**	27	NWTPH-Dx	11-17-20	11-17-20	
Lube Oil Range Organics	**ND**	54	NWTPH-Dx	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*101*	*50-150*				
Client ID:	**SS22**					
Laboratory ID:	11-132-08					
Diesel Range Organics	**ND**	29	NWTPH-Dx	11-17-20	11-17-20	
Lube Oil Range Organics	**ND**	59	NWTPH-Dx	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				
Client ID:	**SS23**					
Laboratory ID:	11-132-09					
Diesel Range Organics	**ND**	35	NWTPH-Dx	11-17-20	11-17-20	
Lube Oil Range Organics	**ND**	70	NWTPH-Dx	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				
Client ID:	**SS24**					
Laboratory ID:	11-132-10					
Diesel Range Organics	**ND**	32	NWTPH-Dx	11-17-20	11-17-20	
Lube Oil	**280**	65	NWTPH-Dx	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*80*	*50-150*				
Client ID:	**SS25**					
Laboratory ID:	11-132-11					
Diesel Range Organics	**ND**	32	NWTPH-Dx	11-17-20	11-17-20	
Lube Oil	**160**	64	NWTPH-Dx	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*85*	*50-150*				

Date of Report: November 25, 2020
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DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1117S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	11-17-20	11-17-20	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*82*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	SB1117S1										
	ORIG	DUP									
Diesel Fuel #2	**98.9**	**90.0**	NA	NA		NA		NA	9	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*103*	*97*	*50-150*			
Laboratory ID:	11-169-02										
	ORIG	DUP									
Diesel Fuel #2	**35500**	**34000**	NA	NA		NA		NA	4	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	U1
Surrogate:											
o-Terphenyl						---	---	*50-150*			S,S

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PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS16**					
Laboratory ID:	11-132-01					
Naphthalene	**ND**	0.0080	EPA 8270E/SIM	11-19-20	11-20-20	
2-Methylnaphthalene	**ND**	0.0080	EPA 8270E/SIM	11-19-20	11-20-20	
1-Methylnaphthalene	**ND**	0.0080	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthylene	**ND**	0.0080	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthene	**ND**	0.0080	EPA 8270E/SIM	11-19-20	11-20-20	
Fluorene	**ND**	0.0080	EPA 8270E/SIM	11-19-20	11-20-20	
Phenanthrene	**ND**	0.0080	EPA 8270E/SIM	11-19-20	11-20-20	
Anthracene	**ND**	0.0080	EPA 8270E/SIM	11-19-20	11-20-20	
Fluoranthene	**ND**	0.0080	EPA 8270E/SIM	11-19-20	11-20-20	
Pyrene	**ND**	0.0080	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]anthracene	**ND**	0.0080	EPA 8270E/SIM	11-19-20	11-20-20	
Chrysene	**ND**	0.0080	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[b]fluoranthene	**ND**	0.0080	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo(j,k)fluoranthene	**ND**	0.0080	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]pyrene	**ND**	0.0080	EPA 8270E/SIM	11-19-20	11-20-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0080	EPA 8270E/SIM	11-19-20	11-20-20	
Dibenz[a,h]anthracene	**ND**	0.0080	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[g,h,i]perylene	**ND**	0.0080	EPA 8270E/SIM	11-19-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*87*	*46 - 113*				
Pyrene-d10	*101*	*45 - 114*				
Terphenyl-d14	*98*	*49 - 121*				

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
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Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS17**					
Laboratory ID:	11-132-02					
Naphthalene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
2-Methylnaphthalene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
1-Methylnaphthalene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthylene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Fluorene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Phenanthrene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Anthracene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Fluoranthene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Pyrene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]anthracene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Chrysene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[b]fluoranthene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo(j,k)fluoranthene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]pyrene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Dibenz[a,h]anthracene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[g,h,i]perylene	**ND**	0.0076	EPA 8270E/SIM	11-19-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*88*	*46 - 113*				
Pyrene-d10	*97*	*45 - 114*				
Terphenyl-d14	*94*	*49 - 121*				

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PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS24**					
Laboratory ID:	11-132-10					
Naphthalene	**0.078**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
2-Methylnaphthalene	**0.090**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
1-Methylnaphthalene	**0.13**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthylene	**0.040**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthene	**0.036**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Fluorene	**0.046**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Phenanthrene	**0.25**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Anthracene	**0.033**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Fluoranthene	**0.062**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Pyrene	**0.11**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]anthracene	**0.032**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Chrysene	**0.048**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[b]fluoranthene	**0.031**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo(j,k)fluoranthene	**ND**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]pyrene	**0.029**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Indeno(1,2,3-c,d)pyrene	**0.014**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Dibenz[a,h]anthracene	**ND**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[g,h,i]perylene	**0.023**	0.0086	EPA 8270E/SIM	11-19-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*91*	*46 - 113*				
Pyrene-d10	*103*	*45 - 114*				
Terphenyl-d14	*96*	*49 - 121*				

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Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS25**					
Laboratory ID:	11-132-11					
Naphthalene	**ND**	0.0085	EPA 8270E/SIM	11-19-20	11-20-20	
2-Methylnaphthalene	**ND**	0.0085	EPA 8270E/SIM	11-19-20	11-20-20	
1-Methylnaphthalene	**ND**	0.0085	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthylene	**ND**	0.0085	EPA 8270E/SIM	11-19-20	11-20-20	
Acenaphthene	**ND**	0.0085	EPA 8270E/SIM	11-19-20	11-20-20	
Fluorene	**ND**	0.0085	EPA 8270E/SIM	11-19-20	11-20-20	
Phenanthrene	**ND**	0.0085	EPA 8270E/SIM	11-19-20	11-20-20	
Anthracene	**ND**	0.0085	EPA 8270E/SIM	11-19-20	11-20-20	
Fluoranthene	**ND**	0.0085	EPA 8270E/SIM	11-19-20	11-20-20	
Pyrene	**ND**	0.0085	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]anthracene	**ND**	0.0085	EPA 8270E/SIM	11-19-20	11-20-20	
Chrysene	**0.012**	0.0085	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[b]fluoranthene	**ND**	0.0085	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo(j,k)fluoranthene	**ND**	0.0085	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[a]pyrene	**ND**	0.0085	EPA 8270E/SIM	11-19-20	11-20-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0085	EPA 8270E/SIM	11-19-20	11-20-20	
Dibenz[a,h]anthracene	**ND**	0.0085	EPA 8270E/SIM	11-19-20	11-20-20	
Benzo[g,h,i]perylene	**ND**	0.0085	EPA 8270E/SIM	11-19-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*94*	*46 - 113*				
Pyrene-d10	*98*	*45 - 114*				
Terphenyl-d14	*100*	*49 - 121*				

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

PAHs EPA 8270E/SIM
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1119S2					
Naphthalene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Acenaphthylene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Acenaphthene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Fluorene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Phenanthrene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Anthracene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Pyrene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Chrysene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270E/SIM	11-19-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*100*	*46 - 113*				
Pyrene-d10	*102*	*45 - 114*				
Terphenyl-d14	*105*	*49 - 121*				

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

PAHs EPA 8270E/SIM
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:	11-201-05										
	MS	MSD	MS	MSD		MS	MSD				
Naphthalene	**0.0700**	**0.0710**	0.0833	0.0833	ND	84	85	51 - 115	1	26	
Acenaphthylene	**0.0738**	**0.0769**	0.0833	0.0833	ND	89	92	53 - 121	4	24	
Acenaphthene	**0.0762**	**0.0808**	0.0833	0.0833	ND	91	97	52 - 121	6	25	
Fluorene	**0.0763**	**0.0786**	0.0833	0.0833	ND	92	94	58 - 127	3	23	
Phenanthrene	**0.0733**	**0.0738**	0.0833	0.0833	ND	88	89	46 - 129	1	28	
Anthracene	**0.0770**	**0.0758**	0.0833	0.0833	ND	92	91	57 - 124	2	21	
Fluoranthene	**0.0755**	**0.0728**	0.0833	0.0833	ND	91	87	46 - 136	4	29	
Pyrene	**0.0728**	**0.0763**	0.0833	0.0833	ND	87	92	41 - 136	5	32	
Benzo[a]anthracene	**0.0778**	**0.0784**	0.0833	0.0833	ND	93	94	56 - 136	1	25	
Chrysene	**0.0758**	**0.0754**	0.0833	0.0833	ND	91	91	49 - 130	1	22	
Benzo[b]fluoranthene	**0.0716**	**0.0738**	0.0833	0.0833	ND	86	89	51 - 135	3	26	
Benzo(j,k)fluoranthene	**0.0783**	**0.0781**	0.0833	0.0833	ND	94	94	56 - 124	0	23	
Benzo[a]pyrene	**0.0714**	**0.0728**	0.0833	0.0833	ND	86	87	54 - 133	2	26	
Indeno(1,2,3-c,d)pyrene	**0.0726**	**0.0759**	0.0833	0.0833	ND	87	91	52 - 134	4	20	
Dibenz[a,h]anthracene	**0.0730**	**0.0739**	0.0833	0.0833	ND	88	89	58 - 127	1	17	
Benzo[g,h,i]perylene	**0.0721**	**0.0729**	0.0833	0.0833	ND	87	88	54 - 129	1	21	
Surrogate:											
2-Fluorobiphenyl						*84*	*88*	*46 - 113*			
Pyrene-d10						*86*	*85*	*45 - 114*			
Terphenyl-d14						*85*	*86*	*49 - 121*			

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS18**					
Laboratory ID:	11-132-03					
Naphthalene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-20-20	
2-Methylnaphthalene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-20-20	
1-Methylnaphthalene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-20-20	
Acenaphthylene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-20-20	
Acenaphthene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-20-20	
Fluorene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-20-20	
Pentachlorophenol	**ND**	0.19	EPA 8270E	11-17-20	11-21-20	
Phenanthrene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-20-20	
Anthracene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-20-20	
Fluoranthene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-20-20	
Pyrene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[a]anthracene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-20-20	
Chrysene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[b]fluoranthene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo(j,k)fluoranthene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[a]pyrene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-20-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-20-20	
Dibenz[a,h]anthracene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[g,h,i]perylene	**ND**	0.0076	EPA 8270E/SIM	11-17-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*50*	*22 - 109*				
Phenol-d6	*58*	*36 - 110*				
Nitrobenzene-d5	*55*	*31 - 109*				
2-Fluorobiphenyl	*65*	*45 - 107*				
2,4,6-Tribromophenol	*78*	*43 - 124*				
Terphenyl-d14	*71*	*52 - 118*				

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS19**					
Laboratory ID:	11-132-04					
Naphthalene	**ND**	0.0071	EPA 8270E/SIM	11-17-20	11-20-20	
2-Methylnaphthalene	**ND**	0.0071	EPA 8270E/SIM	11-17-20	11-20-20	
1-Methylnaphthalene	**ND**	0.0071	EPA 8270E/SIM	11-17-20	11-20-20	
Acenaphthylene	**ND**	0.0071	EPA 8270E/SIM	11-17-20	11-20-20	
Acenaphthene	**ND**	0.0071	EPA 8270E/SIM	11-17-20	11-20-20	
Fluorene	**ND**	0.0071	EPA 8270E/SIM	11-17-20	11-20-20	
Pentachlorophenol	**ND**	0.18	EPA 8270E	11-17-20	11-21-20	
Phenanthrene	**ND**	0.0071	EPA 8270E/SIM	11-17-20	11-20-20	
Anthracene	**ND**	0.0071	EPA 8270E/SIM	11-17-20	11-20-20	
Fluoranthene	**ND**	0.0071	EPA 8270E/SIM	11-17-20	11-20-20	
Pyrene	**ND**	0.0071	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[a]anthracene	**ND**	0.0071	EPA 8270E/SIM	11-17-20	11-20-20	
Chrysene	**ND**	0.0071	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[b]fluoranthene	**ND**	0.0071	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo(j,k)fluoranthene	**ND**	0.0071	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[a]pyrene	**ND**	0.0071	EPA 8270E/SIM	11-17-20	11-20-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.0071	EPA 8270E/SIM	11-17-20	11-20-20	
Dibenz[a,h]anthracene	**ND**	0.0071	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[g,h,i]perylene	**ND**	0.0071	EPA 8270E/SIM	11-17-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*63*	*22 - 109*				
Phenol-d6	*65*	*36 - 110*				
Nitrobenzene-d5	*66*	*31 - 109*				
2-Fluorobiphenyl	*71*	*45 - 107*				
2,4,6-Tribromophenol	*80*	*43 - 124*				
Terphenyl-d14	*73*	*52 - 118*				

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS20**					
Laboratory ID:	11-132-05					
Naphthalene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
2-Methylnaphthalene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
1-Methylnaphthalene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Acenaphthylene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Acenaphthene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Fluorene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Pentachlorophenol	**ND**	0.21	EPA 8270E	11-17-20	11-21-20	
Phenanthrene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Anthracene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Fluoranthene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Pyrene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[a]anthracene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Chrysene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[b]fluoranthene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo(j,k)fluoranthene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[a]pyrene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Dibenz[a,h]anthracene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[g,h,i]perylene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*56*	*22 - 109*				
Phenol-d6	*62*	*36 - 110*				
Nitrobenzene-d5	*61*	*31 - 109*				
2-Fluorobiphenyl	*72*	*45 - 107*				
2,4,6-Tribromophenol	*81*	*43 - 124*				
Terphenyl-d14	*72*	*52 - 118*				

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS20-A**					
Laboratory ID:	11-132-06					
Naphthalene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
2-Methylnaphthalene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
1-Methylnaphthalene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Acenaphthylene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Acenaphthene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Fluorene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Pentachlorophenol	**ND**	0.21	EPA 8270E	11-17-20	11-21-20	
Phenanthrene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Anthracene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Fluoranthene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Pyrene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[a]anthracene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Chrysene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[b]fluoranthene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo(j,k)fluoranthene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[a]pyrene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Dibenz[a,h]anthracene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[g,h,i]perylene	**ND**	0.0083	EPA 8270E/SIM	11-17-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*53*	*22 - 109*				
Phenol-d6	*59*	*36 - 110*				
Nitrobenzene-d5	*58*	*31 - 109*				
2-Fluorobiphenyl	*70*	*45 - 107*				
2,4,6-Tribromophenol	*77*	*43 - 124*				
Terphenyl-d14	*68*	*52 - 118*				

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS21**					
Laboratory ID:	11-132-07					
Naphthalene	**ND**	0.0072	EPA 8270E/SIM	11-17-20	11-20-20	
2-Methylnaphthalene	**ND**	0.0072	EPA 8270E/SIM	11-17-20	11-20-20	
1-Methylnaphthalene	**ND**	0.0072	EPA 8270E/SIM	11-17-20	11-20-20	
Acenaphthylene	**ND**	0.0072	EPA 8270E/SIM	11-17-20	11-20-20	
Acenaphthene	**ND**	0.0072	EPA 8270E/SIM	11-17-20	11-20-20	
Fluorene	**ND**	0.0072	EPA 8270E/SIM	11-17-20	11-20-20	
Pentachlorophenol	**ND**	0.18	EPA 8270E	11-17-20	11-21-20	
Phenanthrene	**ND**	0.0072	EPA 8270E/SIM	11-17-20	11-20-20	
Anthracene	**ND**	0.0072	EPA 8270E/SIM	11-17-20	11-20-20	
Fluoranthene	**ND**	0.0072	EPA 8270E/SIM	11-17-20	11-20-20	
Pyrene	**ND**	0.0072	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[a]anthracene	**ND**	0.0072	EPA 8270E/SIM	11-17-20	11-20-20	
Chrysene	**ND**	0.0072	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[b]fluoranthene	**ND**	0.0072	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo(j,k)fluoranthene	**ND**	0.0072	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[a]pyrene	**ND**	0.0072	EPA 8270E/SIM	11-17-20	11-20-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.0072	EPA 8270E/SIM	11-17-20	11-20-20	
Dibenz[a,h]anthracene	**ND**	0.0072	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[g,h,i]perylene	**ND**	0.0072	EPA 8270E/SIM	11-17-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*48*	*22 - 109*				
Phenol-d6	*48*	*36 - 110*				
Nitrobenzene-d5	*49*	*31 - 109*				
2-Fluorobiphenyl	*50*	*45 - 107*				
2,4,6-Tribromophenol	*58*	*43 - 124*				
Terphenyl-d14	*55*	*52 - 118*				

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS22**					
Laboratory ID:	11-132-08					
Naphthalene	**ND**	0.0078	EPA 8270E/SIM	11-17-20	11-20-20	
2-Methylnaphthalene	**ND**	0.0078	EPA 8270E/SIM	11-17-20	11-20-20	
1-Methylnaphthalene	**ND**	0.0078	EPA 8270E/SIM	11-17-20	11-20-20	
Acenaphthylene	**ND**	0.0078	EPA 8270E/SIM	11-17-20	11-20-20	
Acenaphthene	**ND**	0.0078	EPA 8270E/SIM	11-17-20	11-20-20	
Fluorene	**ND**	0.0078	EPA 8270E/SIM	11-17-20	11-20-20	
Pentachlorophenol	**ND**	0.19	EPA 8270E	11-17-20	11-21-20	
Phenanthrene	**0.11**	0.039	EPA 8270E	11-17-20	11-21-20	
Anthracene	**0.014**	0.0078	EPA 8270E/SIM	11-17-20	11-20-20	
Fluoranthene	**0.17**	0.039	EPA 8270E	11-17-20	11-21-20	
Pyrene	**0.15**	0.039	EPA 8270E	11-17-20	11-21-20	
Benzo[a]anthracene	**0.051**	0.039	EPA 8270E	11-17-20	11-21-20	
Chrysene	**0.067**	0.039	EPA 8270E	11-17-20	11-21-20	
Benzo[b]fluoranthene	**0.081**	0.039	EPA 8270E	11-17-20	11-21-20	
Benzo(j,k)fluoranthene	**0.031**	0.0078	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[a]pyrene	**0.062**	0.039	EPA 8270E	11-17-20	11-21-20	
Indeno[1,2,3-cd]pyrene	**0.041**	0.039	EPA 8270E	11-17-20	11-21-20	
Dibenz[a,h]anthracene	**0.010**	0.0078	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[g,h,i]perylene	**0.042**	0.039	EPA 8270E	11-17-20	11-21-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*58*	*22 - 109*				
Phenol-d6	*64*	*36 - 110*				
Nitrobenzene-d5	*63*	*31 - 109*				
2-Fluorobiphenyl	*73*	*45 - 107*				
2,4,6-Tribromophenol	*83*	*43 - 124*				
Terphenyl-d14	*71*	*52 - 118*				

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS23**					
Laboratory ID:	11-132-09					
Naphthalene	**0.016**	0.0093	EPA 8270E/SIM	11-17-20	11-20-20	
2-Methylnaphthalene	**ND**	0.0093	EPA 8270E/SIM	11-17-20	11-20-20	
1-Methylnaphthalene	**ND**	0.0093	EPA 8270E/SIM	11-17-20	11-20-20	
Acenaphthylene	**ND**	0.0093	EPA 8270E/SIM	11-17-20	11-20-20	
Acenaphthene	**ND**	0.0093	EPA 8270E/SIM	11-17-20	11-20-20	
Fluorene	**ND**	0.0093	EPA 8270E/SIM	11-17-20	11-20-20	
Pentachlorophenol	**ND**	0.23	EPA 8270E	11-17-20	11-21-20	
Phenanthrene	**ND**	0.0093	EPA 8270E/SIM	11-17-20	11-20-20	
Anthracene	**ND**	0.0093	EPA 8270E/SIM	11-17-20	11-20-20	
Fluoranthene	**ND**	0.0093	EPA 8270E/SIM	11-17-20	11-20-20	
Pyrene	**ND**	0.0093	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[a]anthracene	**ND**	0.0093	EPA 8270E/SIM	11-17-20	11-20-20	
Chrysene	**ND**	0.0093	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[b]fluoranthene	**ND**	0.0093	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo(j,k)fluoranthene	**ND**	0.0093	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[a]pyrene	**ND**	0.0093	EPA 8270E/SIM	11-17-20	11-20-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.0093	EPA 8270E/SIM	11-17-20	11-20-20	
Dibenz[a,h]anthracene	**ND**	0.0093	EPA 8270E/SIM	11-17-20	11-20-20	
Benzo[g,h,i]perylene	**ND**	0.0093	EPA 8270E/SIM	11-17-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*58*	*22 - 109*				
Phenol-d6	*61*	*36 - 110*				
Nitrobenzene-d5	*59*	*31 - 109*				
2-Fluorobiphenyl	*63*	*45 - 107*				
2,4,6-Tribromophenol	*71*	*43 - 124*				
Terphenyl-d14	*63*	*52 - 118*				

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1117S1					
Naphthalene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthylene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Fluorene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Pentachlorophenol	**ND**	0.17	EPA 8270E	11-17-20	11-18-20	
Phenanthrene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Anthracene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Pyrene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Chrysene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270E/SIM	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*67*	*22 - 109*				
Phenol-d6	*71*	*36 - 110*				
Nitrobenzene-d5	*63*	*31 - 109*				
2-Fluorobiphenyl	*71*	*45 - 107*				
2,4,6-Tribromophenol	*81*	*43 - 124*				
Terphenyl-d14	*77*	*52 - 118*				

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1117S1									
	SB	SBD	SB	SBD	SB	SBD				
Phenol	**1.04**	**0.950**	1.33	1.33	78	71	47 - 104	9	30	
2-Chlorophenol	**1.15**	**1.04**	1.33	1.33	86	78	45 - 108	10	31	
1,4-Dichlorobenzene	**0.532**	**0.472**	0.667	0.667	80	71	41 - 105	12	32	
n-Nitroso-di-n-propylamine	**0.540**	**0.493**	0.667	0.667	81	74	47 - 103	9	28	
1,2,4-Trichlorobenzene	**0.576**	**0.521**	0.667	0.667	86	78	42 - 111	10	32	
4-Chloro-3-methylphenol	**1.22**	**1.15**	1.33	1.33	92	86	61 - 108	6	25	
Acenaphthene	**0.539**	**0.507**	0.667	0.667	81	76	54 - 102	6	23	
4-Nitrophenol	**1.20**	**1.11**	1.33	1.33	90	83	53 - 122	8	24	
2,4-Dinitrotoluene	**0.582**	**0.520**	0.667	0.667	87	78	57 - 107	11	22	
Pentachlorophenol	**1.01**	**1.01**	1.33	1.33	76	76	44 - 132	0	23	
Pyrene	**0.583**	**0.556**	0.667	0.667	87	83	58 - 111	5	21	
Surrogate:										
2-Fluorophenol					*83*	*72*	*22 - 109*			
Phenol-d6					*81*	*74*	*36 - 110*			
Nitrobenzene-d5					*77*	*71*	*31 - 109*			
2-Fluorobiphenyl					*81*	*74*	*45 - 107*			
2,4,6-Tribromophenol					*87*	*85*	*43 - 124*			
Terphenyl-d14					*78*	*76*	*52 - 118*			

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

TOTAL METALS
EPA 6010D/7471B

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS16**					
Laboratory ID:	11-132-01					
Arsenic	**ND**	12	EPA 6010D	11-23-20	11-23-20	
Barium	**30**	3.0	EPA 6010D	11-23-20	11-23-20	
Cadmium	**ND**	0.60	EPA 6010D	11-23-20	11-23-20	
Chromium	**31**	0.60	EPA 6010D	11-23-20	11-23-20	
Lead	**ND**	6.0	EPA 6010D	11-23-20	11-23-20	
Mercury	**ND**	0.30	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	12	EPA 6010D	11-23-20	11-23-20	
Silver	**ND**	1.2	EPA 6010D	11-23-20	11-23-20	
Client ID:	**SS17**					
Laboratory ID:	11-132-02					
Arsenic	**ND**	11	EPA 6010D	11-23-20	11-23-20	
Barium	**48**	2.8	EPA 6010D	11-23-20	11-23-20	
Cadmium	**ND**	0.57	EPA 6010D	11-23-20	11-23-20	
Chromium	**20**	0.57	EPA 6010D	11-23-20	11-23-20	
Lead	**ND**	5.7	EPA 6010D	11-23-20	11-23-20	
Mercury	**ND**	0.28	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	11	EPA 6010D	11-23-20	11-23-20	
Silver	**ND**	1.1	EPA 6010D	11-23-20	11-23-20	
Client ID:	**SS18**					
Laboratory ID:	11-132-03					
Arsenic	**ND**	11	EPA 6010D	11-23-20	11-23-20	
Barium	**37**	2.8	EPA 6010D	11-23-20	11-23-20	
Cadmium	**ND**	0.57	EPA 6010D	11-23-20	11-23-20	
Chromium	**21**	0.57	EPA 6010D	11-23-20	11-23-20	
Copper	**11**	1.1	EPA 6010D	11-23-20	11-23-20	
Lead	**ND**	5.7	EPA 6010D	11-23-20	11-23-20	
Mercury	**ND**	0.28	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	11	EPA 6010D	11-23-20	11-23-20	
Silver	**ND**	1.1	EPA 6010D	11-23-20	11-23-20	

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

TOTAL METALS
EPA 6010D/7471B

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS19**					
Laboratory ID:	11-132-04					
Arsenic	**ND**	11	EPA 6010D	11-23-20	11-23-20	
Barium	**46**	2.7	EPA 6010D	11-23-20	11-23-20	
Cadmium	**ND**	0.53	EPA 6010D	11-23-20	11-23-20	
Chromium	**17**	0.53	EPA 6010D	11-23-20	11-23-20	
Copper	**12**	1.1	EPA 6010D	11-23-20	11-23-20	
Lead	**ND**	5.3	EPA 6010D	11-23-20	11-23-20	
Mercury	**ND**	0.27	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	11	EPA 6010D	11-23-20	11-23-20	
Silver	**ND**	1.1	EPA 6010D	11-23-20	11-23-20	
Client ID:	**SS20**					
Laboratory ID:	11-132-05					
Arsenic	**ND**	12	EPA 6010D	11-23-20	11-23-20	
Barium	**66**	3.1	EPA 6010D	11-23-20	11-23-20	
Cadmium	**ND**	0.62	EPA 6010D	11-23-20	11-23-20	
Chromium	**29**	0.62	EPA 6010D	11-23-20	11-23-20	
Copper	**17**	1.2	EPA 6010D	11-23-20	11-23-20	
Lead	**ND**	6.2	EPA 6010D	11-23-20	11-23-20	
Mercury	**ND**	0.31	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	12	EPA 6010D	11-23-20	11-23-20	
Silver	**ND**	1.2	EPA 6010D	11-23-20	11-23-20	
Client ID:	**SS20-A**					
Laboratory ID:	11-132-06					
Arsenic	**ND**	12	EPA 6010D	11-23-20	11-23-20	
Barium	**71**	3.1	EPA 6010D	11-23-20	11-23-20	
Cadmium	**ND**	0.62	EPA 6010D	11-23-20	11-23-20	
Chromium	**29**	0.62	EPA 6010D	11-23-20	11-23-20	
Copper	**17**	1.2	EPA 6010D	11-23-20	11-23-20	
Lead	**ND**	6.2	EPA 6010D	11-23-20	11-23-20	
Mercury	**ND**	0.31	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	12	EPA 6010D	11-23-20	11-23-20	
Silver	**ND**	1.2	EPA 6010D	11-23-20	11-23-20	

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

TOTAL METALS
EPA 6010D/7471B

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS21**					
Laboratory ID:	11-132-07					
Arsenic	**ND**	11	EPA 6010D	11-23-20	11-23-20	
Barium	**28**	2.7	EPA 6010D	11-23-20	11-23-20	
Cadmium	**ND**	0.54	EPA 6010D	11-23-20	11-23-20	
Chromium	**18**	0.54	EPA 6010D	11-23-20	11-23-20	
Copper	**7.5**	1.1	EPA 6010D	11-23-20	11-23-20	
Lead	**ND**	5.4	EPA 6010D	11-23-20	11-23-20	
Mercury	**ND**	0.27	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	11	EPA 6010D	11-23-20	11-23-20	
Silver	**ND**	1.1	EPA 6010D	11-23-20	11-23-20	
Client ID:	**SS22**					
Laboratory ID:	11-132-08					
Arsenic	**ND**	12	EPA 6010D	11-23-20	11-23-20	
Barium	**57**	2.9	EPA 6010D	11-23-20	11-23-20	
Cadmium	**ND**	0.58	EPA 6010D	11-23-20	11-23-20	
Chromium	**26**	0.58	EPA 6010D	11-23-20	11-23-20	
Copper	**19**	1.2	EPA 6010D	11-23-20	11-23-20	
Lead	**ND**	5.8	EPA 6010D	11-23-20	11-23-20	
Mercury	**ND**	0.29	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	12	EPA 6010D	11-23-20	11-23-20	
Silver	**ND**	1.2	EPA 6010D	11-23-20	11-23-20	
Client ID:	**SS23**					
Laboratory ID:	11-132-09					
Arsenic	**ND**	14	EPA 6010D	11-23-20	11-23-20	
Barium	**56**	3.5	EPA 6010D	11-23-20	11-23-20	
Cadmium	**ND**	0.70	EPA 6010D	11-23-20	11-23-20	
Chromium	**25**	0.70	EPA 6010D	11-23-20	11-23-20	
Copper	**13**	1.4	EPA 6010D	11-23-20	11-23-20	
Lead	**ND**	7.0	EPA 6010D	11-23-20	11-23-20	
Mercury	**ND**	0.35	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	14	EPA 6010D	11-23-20	11-23-20	
Silver	**ND**	1.4	EPA 6010D	11-23-20	11-23-20	

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Project: 1903-00129-RI

TOTAL METALS
EPA 6010D/7471B

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS24**					
Laboratory ID:	11-132-10					
Arsenic	**ND**	13	EPA 6010D	11-23-20	11-23-20	
Barium	**48**	3.2	EPA 6010D	11-23-20	11-23-20	
Cadmium	**ND**	0.65	EPA 6010D	11-23-20	11-23-20	
Chromium	**23**	0.65	EPA 6010D	11-23-20	11-23-20	
Lead	**8.5**	6.5	EPA 6010D	11-23-20	11-23-20	
Mercury	**ND**	0.32	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	13	EPA 6010D	11-23-20	11-23-20	
Silver	**ND**	1.3	EPA 6010D	11-23-20	11-23-20	
Client ID:	**SS25**					
Laboratory ID:	11-132-11					
Arsenic	**ND**	13	EPA 6010D	11-23-20	11-23-20	
Barium	**61**	3.2	EPA 6010D	11-23-20	11-23-20	
Cadmium	**ND**	0.64	EPA 6010D	11-23-20	11-23-20	
Chromium	**23**	0.64	EPA 6010D	11-23-20	11-23-20	
Lead	**35**	6.4	EPA 6010D	11-23-20	11-23-20	
Mercury	**ND**	0.32	EPA 7471B	11-23-20	11-23-20	
Selenium	**ND**	13	EPA 6010D	11-23-20	11-23-20	
Silver	**ND**	1.3	EPA 6010D	11-23-20	11-23-20	

Date of Report: November 25, 2020
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TOTAL METALS
EPA 6010D/7471B
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1123SM2					
Arsenic	**ND**	10	EPA 6010D	11-23-20	11-23-20	
Barium	**ND**	2.5	EPA 6010D	11-23-20	11-23-20	
Cadmium	**ND**	0.50	EPA 6010D	11-23-20	11-23-20	
Chromium	**ND**	0.50	EPA 6010D	11-23-20	11-23-20	
Copper	**ND**	1.0	EPA 6010D	11-23-20	11-23-20	
Lead	**ND**	5.0	EPA 6010D	11-23-20	11-23-20	
Selenium	**ND**	10	EPA 6010D	11-23-20	11-23-20	
Silver	**ND**	1.0	EPA 6010D	11-23-20	11-23-20	
Laboratory ID:	MB1123S3					
Mercury	**ND**	0.25	EPA 7471B	11-23-20	11-23-20	

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Laboratory Reference: 2011-132
Project: 1903-00129-RI

TOTAL METALS
EPA 6010D/7471B
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-132-02										
	ORIG	DUP									
Arsenic	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Barium	**41.8**	**37.8**	NA	NA		NA		NA	10	20	
Cadmium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Chromium	**18.0**	**17.3**	NA	NA		NA		NA	4	20	
Copper	**8.05**	**8.00**	NA	NA		NA		NA	1	20	
Lead	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Selenium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Silver	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Laboratory ID:	11-132-02										
Mercury	**ND**	**ND**	NA	NA		NA		NA	NA	20	
MATRIX SPIKES											
Laboratory ID:	11-132-02										
	MS	MSD	MS	MSD		MS	MSD				
Arsenic	**94.8**	**95.2**	100	100	ND	**95**	**95**	75-125	0	20	
Barium	**134**	**133**	100	100	41.8	**92**	**92**	75-125	0	20	
Cadmium	**46.5**	**46.8**	50.0	50.0	ND	**93**	**94**	75-125	1	20	
Chromium	**111**	**113**	100	100	18.0	**93**	**95**	75-125	2	20	
Copper	**53.6**	**54.4**	50.0	50.0	8.05	**91**	**93**	75-125	1	20	
Lead	**234**	**234**	250	250	ND	**94**	**94**	75-125	0	20	
Selenium	**91.4**	**92.1**	100	100	ND	**91**	**92**	75-125	1	20	
Silver	**21.6**	**21.6**	25.0	25.0	ND	**86**	**86**	75-125	0	20	
Laboratory ID:	11-132-02										
Mercury	**0.561**	**0.557**	0.500	0.500	0.0177	**109**	**108**	80-120	1	20	

Date of Report: November 25, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-132
Project: 1903-00129-RI

VOLATILE ORGANICS EPA 8260D
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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS24**					
Laboratory ID:	11-132-10					
Dichlorodifluoromethane	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
Chloromethane	ND	0.0024	EPA 8260D	11-20-20	11-20-20	
Vinyl Chloride	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
Bromomethane	ND	0.0024	EPA 8260D	11-20-20	11-20-20	
Chloroethane	ND	0.0024	EPA 8260D	11-20-20	11-20-20	
Trichlorofluoromethane	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
1,1-Dichloroethene	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
Iodomethane	ND	0.0024	EPA 8260D	11-20-20	11-20-20	
Methylene Chloride	ND	0.0024	EPA 8260D	11-20-20	11-20-20	
(trans) 1,2-Dichloroethene	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
Methyl t-Butyl Ether	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
1,1-Dichloroethane	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
2,2-Dichloropropane	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
(cis) 1,2-Dichloroethene	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
Bromochloromethane	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
Chloroform	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
1,1,1-Trichloroethane	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
Carbon Tetrachloride	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
1,1-Dichloropropene	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
1,2-Dichloroethane	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
Trichloroethene	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
1,2-Dichloropropane	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
Dibromomethane	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
Bromodichloromethane	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
2-Chloroethyl Vinyl Ether	ND	0.0024	EPA 8260D	11-20-20	11-20-20	
(cis) 1,3-Dichloropropene	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
(trans) 1,3-Dichloropropene	ND	0.00047	EPA 8260D	11-20-20	11-20-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS24**					
Laboratory ID:	11-132-10					
1,1,2-Trichloroethane	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
Tetrachloroethene	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
1,3-Dichloropropane	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
Dibromochloromethane	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
1,2-Dibromoethane	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
Chlorobenzene	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
1,1,1,2-Tetrachloroethane	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
Bromoform	ND	0.0024	EPA 8260D	11-20-20	11-20-20	
Bromobenzene	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
1,1,2,2-Tetrachloroethane	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
1,2,3-Trichloropropane	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
2-Chlorotoluene	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
4-Chlorotoluene	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
1,3-Dichlorobenzene	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
1,4-Dichlorobenzene	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
1,2-Dichlorobenzene	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
1,2-Dibromo-3-chloropropane	ND	0.0024	EPA 8260D	11-20-20	11-20-20	
1,2,4-Trichlorobenzene	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
Hexachlorobutadiene	ND	0.0024	EPA 8260D	11-20-20	11-20-20	
1,2,3-Trichlorobenzene	ND	0.00047	EPA 8260D	11-20-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*113*	*74-131*				
Toluene-d8	*107*	*78-128*				
4-Bromofluorobenzene	*86*	*71-130*				

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS25**					
Laboratory ID:	11-132-11					
Dichlorodifluoromethane	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
Chloromethane	ND	0.0027	EPA 8260D	11-20-20	11-20-20	
Vinyl Chloride	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
Bromomethane	ND	0.0027	EPA 8260D	11-20-20	11-20-20	
Chloroethane	ND	0.0027	EPA 8260D	11-20-20	11-20-20	
Trichlorofluoromethane	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
1,1-Dichloroethene	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
Iodomethane	ND	0.0027	EPA 8260D	11-20-20	11-20-20	
Methylene Chloride	ND	0.0027	EPA 8260D	11-20-20	11-20-20	
(trans) 1,2-Dichloroethene	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
Methyl t-Butyl Ether	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
1,1-Dichloroethane	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
2,2-Dichloropropane	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
(cis) 1,2-Dichloroethene	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
Bromochloromethane	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
Chloroform	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
1,1,1-Trichloroethane	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
Carbon Tetrachloride	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
1,1-Dichloropropene	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
1,2-Dichloroethane	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
Trichloroethene	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
1,2-Dichloropropane	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
Dibromomethane	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
Bromodichloromethane	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
2-Chloroethyl Vinyl Ether	ND	0.0027	EPA 8260D	11-20-20	11-20-20	
(cis) 1,3-Dichloropropene	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
(trans) 1,3-Dichloropropene	ND	0.00055	EPA 8260D	11-20-20	11-20-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS25**					
Laboratory ID:	11-132-11					
1,1,2-Trichloroethane	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
Tetrachloroethene	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
1,3-Dichloropropane	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
Dibromochloromethane	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
1,2-Dibromoethane	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
Chlorobenzene	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
1,1,1,2-Tetrachloroethane	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
Bromoform	ND	0.0027	EPA 8260D	11-20-20	11-20-20	
Bromobenzene	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
1,1,2,2-Tetrachloroethane	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
1,2,3-Trichloropropane	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
2-Chlorotoluene	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
4-Chlorotoluene	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
1,3-Dichlorobenzene	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
1,4-Dichlorobenzene	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
1,2-Dichlorobenzene	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
1,2-Dibromo-3-chloropropane	ND	0.0027	EPA 8260D	11-20-20	11-20-20	
1,2,4-Trichlorobenzene	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
Hexachlorobutadiene	ND	0.0027	EPA 8260D	11-20-20	11-20-20	
1,2,3-Trichlorobenzene	ND	0.00055	EPA 8260D	11-20-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*112*	*74-131*				
Toluene-d8	*108*	*78-128*				
4-Bromofluorobenzene	*91*	*71-130*				

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QUALITY CONTROL
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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1120S2					
Dichlorodifluoromethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Chloromethane	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
Vinyl Chloride	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Bromomethane	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
Chloroethane	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
Trichlorofluoromethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,1-Dichloroethene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Iodomethane	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
Methylene Chloride	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,1-Dichloroethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
2,2-Dichloropropane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Bromochloromethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Chloroform	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Carbon Tetrachloride	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,1-Dichloropropene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,2-Dichloroethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Trichloroethene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,2-Dichloropropane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Dibromomethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Bromodichloromethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1120S2					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Tetrachloroethene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,3-Dichloropropane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Dibromochloromethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,2-Dibromoethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Chlorobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Bromoform	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
Bromobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
2-Chlorotoluene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
4-Chlorotoluene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Hexachlorobutadiene	ND	0.0050	EPA 8260D	11-20-20	11-20-20	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260D	11-20-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*116*	*74-131*				
Toluene-d8	*113*	*78-128*				
4-Bromofluorobenzene	*101*	*71-130*				

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VOLATILE ORGANICS EPA 8260D
QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1120S2									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0549**	**0.0536**	0.0500	0.0500	110	107	55-126	2	17	
Benzene	**0.0542**	**0.0543**	0.0500	0.0500	108	109	65-121	0	16	
Trichloroethene	**0.0583**	**0.0576**	0.0500	0.0500	117	115	74-126	1	16	
Toluene	**0.0500**	**0.0490**	0.0500	0.0500	100	98	71-121	2	16	
Chlorobenzene	**0.0563**	**0.0553**	0.0500	0.0500	113	111	72-123	2	16	
Surrogate:										
Dibromofluoromethane					*108*	*108*	*74-131*			
Toluene-d8					*102*	*104*	*78-128*			
4-Bromofluorobenzene					*100*	*96*	*71-130*			

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Project: 1903-00129-RI

PCBs EPA 8082A

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS24**					
Laboratory ID:	11-132-10					
Aroclor 1016	**ND**	0.065	EPA 8082A	11-17-20	11-23-20	
Aroclor 1221	**ND**	0.065	EPA 8082A	11-17-20	11-23-20	
Aroclor 1232	**ND**	0.065	EPA 8082A	11-17-20	11-23-20	
Aroclor 1242	**ND**	0.065	EPA 8082A	11-17-20	11-23-20	
Aroclor 1248	**ND**	0.065	EPA 8082A	11-17-20	11-23-20	
Aroclor 1254	**ND**	0.065	EPA 8082A	11-17-20	11-23-20	
Aroclor 1260	**ND**	0.065	EPA 8082A	11-17-20	11-23-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*112*	*46-125*				
Client ID:	**SS25**					
Laboratory ID:	11-132-11					
Aroclor 1016	**ND**	0.064	EPA 8082A	11-17-20	11-23-20	
Aroclor 1221	**ND**	0.064	EPA 8082A	11-17-20	11-23-20	
Aroclor 1232	**ND**	0.064	EPA 8082A	11-17-20	11-23-20	
Aroclor 1242	**ND**	0.064	EPA 8082A	11-17-20	11-23-20	
Aroclor 1248	**ND**	0.064	EPA 8082A	11-17-20	11-23-20	
Aroclor 1254	**ND**	0.064	EPA 8082A	11-17-20	11-23-20	
Aroclor 1260	**ND**	0.064	EPA 8082A	11-17-20	11-23-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*107*	*46-125*				

Date of Report: November 25, 2020
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PCBs EPA 8082A
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1117S1					
Aroclor 1016	**ND**	0.050	EPA 8082A	11-17-20	11-23-20	
Aroclor 1221	**ND**	0.050	EPA 8082A	11-17-20	11-23-20	
Aroclor 1232	**ND**	0.050	EPA 8082A	11-17-20	11-23-20	
Aroclor 1242	**ND**	0.050	EPA 8082A	11-17-20	11-23-20	
Aroclor 1248	**ND**	0.050	EPA 8082A	11-17-20	11-23-20	
Aroclor 1254	**ND**	0.050	EPA 8082A	11-17-20	11-23-20	
Aroclor 1260	**ND**	0.050	EPA 8082A	11-17-20	11-23-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*116*	*46-125*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB1117S1										
	SB	SBD	SB	SBD		SB	SBD				
Aroclor 1260	**0.593**	**0.635**	0.500	0.500	N/A	**119**	**127**	50-134	7	18	
Surrogate:											
DCB						*118*	*115*	*46-125*			

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% MOISTURE

Client ID	Lab ID	% Moisture	Date Analyzed
SS16	11-132-01	**16**	11-17-20
SS17	11-132-02	**12**	11-17-20
SS18	11-132-03	**12**	11-17-20
SS19	11-132-04	**6**	11-17-20
SS20	11-132-05	**20**	11-17-20
SS20-A	11-132-06	**20**	11-17-20
SS21	11-132-07	**8**	11-17-20
SS22	11-132-08	**14**	11-17-20
SS23	11-132-09	**28**	11-17-20
SS24	11-132-10	**23**	11-17-20
SS25	11-132-11	**21**	11-17-20

OnSite Environmental Inc.

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 methods 8260 & 8270, 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

Chain of Custody

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OnSite Environmental Inc.
Analytical Laboratory Testing Services
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Laboratory Number: 11-132

Company: ENPRO ENVIRONMENTAL
Project Number: 1903-00129-R1
Project Name: GREEN COVE PARK
Project Manager: KIM KIM
Sampled by: HOANO ROSARIO

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	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)~~ 11/12/2020	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~~ TTLC Metals PENTACHLOROPHENOL	TCLP Metals	~~HEM (oil and grease) 1664~~ TOTAL Cu	EDC	MTBE 8260	DIOXINS/FURANS	TOTAL Pb	% Moisture
1	SS 16	11/4/2020	1330	SOIL	6		X		X		H	H		X	H				X		H		H	H			0
2	SS 17		1400				1		1		1	1		1	1				1		1		1	1			
3	SS 18		1415				X		X		H	H		X	H				X	X	H	X	H	H	H		
4	SS 19		1430																								
5	SS 20		1445																								
6	SS 20-A		1445																								
7	SS 21		1500																								
8	SS 22		1545																								
9	SS 23		1600																								
10	SS 24		1630				X		X		●	H		X	●				X		H		H	●			

	Signature	Company	Date	Time
Relinquished		ENPRO ENVIRONMENTAL	11/12/2020	820
Received		NPLD	11/12	8:23
Relinquished		N	11/13	10:07
Received		OSE	11/13/20	1007
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
X = TO BE ANALYZED
H = HOLD PENDING FURTHER INSTRUCTION
● Added 11/20/2020. DB (STA)

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

Chain of Custody

Page 2 of 2

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

Company: ENPRO ENVIRONMENTAL
Project Number: 1903-00129-R1
Project Name: GREEN COVE PARK
Project Manager: KIM KIM
Sampled by: HOANG ROSARIO

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☐ Standard (7 Days)
☐ _____ (other)

Laboratory Number: 11-132

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	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	EDC	MTBE 8260			% Moisture
11	SS25	11/11/2020	1645	SOIL	6		X		X		●	H		X	●				X		H		H	●			X
	LAST ENTRY																										

	Signature	Company	Date	Time
Relinquished		ENPRO ENVIRONMENTAL	11/13/2020	820
Received		SUPPLY	11/13	8:35
Relinquished				
Received		ORE	11/13/20	1001
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

11/15/2020

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

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

November 24, 2020

Kim Kim
EnPro Environmental
151 Hekili Street, Suite 210
Kailua, HI 96734

Re: Analytical Data for Project 1903-00129-RI
Laboratory Reference No. 2011-133

Dear Kim:

Enclosed are the analytical results and associated quality control data for samples submitted on November 13, 2020.

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,

David Baumeister
Project Manager

Enclosures

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-133
Project: 1903-00129-RI

Case Narrative

Samples were collected on November 12, 2020 and received by the laboratory on November 13, 2020. 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: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-133
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW6-111220**					
Laboratory ID:	11-133-01					
Benzene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Toluene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
o-Xylene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Gasoline	**ND**	100	NWTPH-Gx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*65-120*				
Client ID:	**MW7-111220**					
Laboratory ID:	11-133-02					
Benzene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Toluene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
o-Xylene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Gasoline	**ND**	100	NWTPH-Gx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*99*	*65-120*				

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-133
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1113W2					
Benzene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Toluene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
o-Xylene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Gasoline	**ND**	100	NWTPH-Gx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*65-120*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-109-18										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*99*	*100*	*65-120*			
SPIKE BLANKS											
Laboratory ID:	SB1113W1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**52.2**	**50.1**	50.0	50.0		**104**	**100**	83-117	4	11	
Toluene	**54.1**	**52.1**	50.0	50.0		**108**	**104**	86-115	4	12	
Ethyl Benzene	**53.6**	**51.5**	50.0	50.0		**107**	**103**	86-117	4	12	
m,p-Xylene	**54.5**	**52.3**	50.0	50.0		**109**	**105**	85-118	4	12	
o-Xylene	**52.9**	**51.2**	50.0	50.0		**106**	**102**	86-115	3	11	
Surrogate:											
Fluorobenzene						*81*	*104*	*65-120*			

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-133
Project: 1903-00129-RI

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW6-111220**					
Laboratory ID:	11-133-01					
Diesel Range Organics	**ND**	0.21	NWTPH-Dx	11-18-20	11-19-20	
Lube Oil Range Organics	**0.23**	0.21	NWTPH-Dx	11-18-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*102*	*50-150*				
Client ID:	**MW7-111220**					
Laboratory ID:	11-133-02					
Diesel Range Organics	**0.38**	0.21	NWTPH-Dx	11-18-20	11-19-20	
Lube Oil Range Organics	**0.63**	0.21	NWTPH-Dx	11-18-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-133
Project: 1903-00129-RI

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1118W1					
Diesel Range Organics	**ND**	0.20	NWTPH-Dx	11-18-20	11-19-20	
Lube Oil Range Organics	**ND**	0.20	NWTPH-Dx	11-18-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*97*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-153-01										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range Organics	**0.249**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*97*	*89*	*50-150*			

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-133
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW6-111220**					
Laboratory ID:	11-133-01					
Naphthalene	**ND**	0.097	EPA 8270E/SIM	11-17-20	11-17-20	
2-Methylnaphthalene	**ND**	0.097	EPA 8270E/SIM	11-17-20	11-17-20	
1-Methylnaphthalene	**ND**	0.097	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthylene	**ND**	0.097	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthene	**ND**	0.097	EPA 8270E/SIM	11-17-20	11-17-20	
Fluorene	**ND**	0.097	EPA 8270E/SIM	11-17-20	11-17-20	
Phenanthrene	**ND**	0.097	EPA 8270E/SIM	11-17-20	11-17-20	
Anthracene	**ND**	0.097	EPA 8270E/SIM	11-17-20	11-17-20	
Fluoranthene	**ND**	0.097	EPA 8270E/SIM	11-17-20	11-17-20	
Pyrene	**ND**	0.097	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]anthracene	**ND**	0.0097	EPA 8270E/SIM	11-17-20	11-17-20	
Chrysene	**ND**	0.0097	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[b]fluoranthene	**ND**	0.0097	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo(j,k)fluoranthene	**ND**	0.0097	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]pyrene	**ND**	0.0097	EPA 8270E/SIM	11-17-20	11-17-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.0097	EPA 8270E/SIM	11-17-20	11-17-20	
Dibenz[a,h]anthracene	**ND**	0.0097	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[g,h,i]perylene	**ND**	0.0097	EPA 8270E/SIM	11-17-20	11-17-20	
Benzoic Acid	**ND**	26	EPA 8270E	11-17-20	11-18-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*30*	*10 - 80*				
Phenol-d6	*20*	*10 - 87*				
Nitrobenzene-d5	*56*	*33 - 105*				
2-Fluorobiphenyl	*60*	*41 - 105*				
2,4,6-Tribromophenol	*72*	*25 - 124*				
Terphenyl-d14	*69*	*47 - 116*				

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-133
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW7-111220**					
Laboratory ID:	11-133-02					
Naphthalene	**ND**	0.098	EPA 8270E/SIM	11-17-20	11-17-20	
2-Methylnaphthalene	**ND**	0.098	EPA 8270E/SIM	11-17-20	11-17-20	
1-Methylnaphthalene	**ND**	0.098	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthylene	**ND**	0.098	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthene	**0.11**	0.098	EPA 8270E/SIM	11-17-20	11-17-20	
Fluorene	**ND**	0.098	EPA 8270E/SIM	11-17-20	11-17-20	
Phenanthrene	**ND**	0.098	EPA 8270E/SIM	11-17-20	11-17-20	
Anthracene	**ND**	0.098	EPA 8270E/SIM	11-17-20	11-17-20	
Fluoranthene	**ND**	0.098	EPA 8270E/SIM	11-17-20	11-17-20	
Pyrene	**ND**	0.098	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]anthracene	**ND**	0.0098	EPA 8270E/SIM	11-17-20	11-17-20	
Chrysene	**ND**	0.0098	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[b]fluoranthene	**ND**	0.0098	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo(j,k)fluoranthene	**ND**	0.0098	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]pyrene	**ND**	0.0098	EPA 8270E/SIM	11-17-20	11-17-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.0098	EPA 8270E/SIM	11-17-20	11-17-20	
Dibenz[a,h]anthracene	**ND**	0.0098	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[g,h,i]perylene	**ND**	0.0098	EPA 8270E/SIM	11-17-20	11-17-20	
Benzoic Acid	**ND**	26	EPA 8270E	11-17-20	11-18-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*20*	*10 - 80*				
Phenol-d6	*15*	*10 - 87*				
Nitrobenzene-d5	*36*	*33 - 105*				
2-Fluorobiphenyl	*46*	*41 - 105*				
2,4,6-Tribromophenol	*69*	*25 - 124*				
Terphenyl-d14	*67*	*47 - 116*				

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-133
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1117W1					
Naphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
2-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
1-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthylene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Fluorene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Phenanthrene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Anthracene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Fluoranthene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Pyrene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]anthracene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Chrysene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]pyrene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzoic Acid	**ND**	27	EPA 8270E	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*33*	*10 - 80*				
Phenol-d6	*22*	*10 - 87*				
Nitrobenzene-d5	*62*	*33 - 105*				
2-Fluorobiphenyl	*60*	*41 - 105*				
2,4,6-Tribromophenol	*69*	*25 - 124*				
Terphenyl-d14	*69*	*47 - 116*				

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-133
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1117W1									
	SB	SBD	SB	SBD	SB	SBD				
Phenol	**10.0**	**9.18**	40.0	40.0	25	23	21 - 53	9	25	
2-Chlorophenol	**26.1**	**24.0**	40.0	40.0	65	60	38 - 92	8	29	
1,4-Dichlorobenzene	**11.7**	**10.4**	20.0	20.0	59	52	30 - 88	12	29	
n-Nitroso-di-n-propylamine	**13.2**	**12.7**	20.0	20.0	66	64	40 - 103	4	22	
1,2,4-Trichlorobenzene	**12.8**	**11.5**	20.0	20.0	64	58	37 - 95	11	25	
4-Chloro-3-methylphenol	**30.7**	**29.0**	40.0	40.0	77	73	57 - 101	6	17	
Acenaphthene	**14.1**	**12.7**	20.0	20.0	71	64	51 - 97	10	18	
4-Nitrophenol	**14.5**	**13.1**	40.0	40.0	36	33	23 - 64	10	34	
2,4-Dinitrotoluene	**15.0**	**13.9**	20.0	20.0	75	70	52 - 103	8	17	
Pentachlorophenol	**34.7**	**31.8**	40.0	40.0	87	80	40 - 124	9	35	
Pyrene	**16.2**	**15.2**	20.0	20.0	81	76	52 - 107	6	19	
Surrogate:										
2-Fluorophenol					*38*	*33*	*10 - 80*			
Phenol-d6					*25*	*23*	*10 - 87*			
Nitrobenzene-d5					*63*	*57*	*33 - 105*			
2-Fluorobiphenyl					*65*	*62*	*41 - 105*			
2,4,6-Tribromophenol					*77*	*73*	*25 - 124*			
Terphenyl-d14					*73*	*69*	*47 - 116*			

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-133
Project: 1903-00129-RI

TOTAL METALS
EPA 200.8/6010D/7470A

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW6-111220**					
Laboratory ID:	11-133-01					
Arsenic	**18**	3.3	EPA 200.8	11-18-20	11-19-20	
Barium	**33**	28	EPA 200.8	11-18-20	11-19-20	
Cadmium	**ND**	4.4	EPA 200.8	11-18-20	11-19-20	
Chromium	**ND**	11	EPA 200.8	11-18-20	11-19-20	
Iron	**18000**	280	EPA 6010D	11-18-20	11-23-20	
Lead	**ND**	1.1	EPA 200.8	11-18-20	11-19-20	
Manganese	**4500**	56	EPA 6010D	11-18-20	11-23-20	
Mercury	**ND**	0.50	EPA 7470A	11-20-20	11-20-20	
Selenium	**ND**	5.6	EPA 200.8	11-18-20	11-19-20	
Silver	**ND**	11	EPA 200.8	11-18-20	11-19-20	
Client ID:	**MW7-111220**					
Laboratory ID:	11-133-02					
Arsenic	**36**	3.3	EPA 200.8	11-18-20	11-19-20	
Barium	**62**	28	EPA 200.8	11-18-20	11-19-20	
Cadmium	**ND**	4.4	EPA 200.8	11-18-20	11-19-20	
Chromium	**ND**	11	EPA 200.8	11-18-20	11-19-20	
Iron	**47000**	280	EPA 6010D	11-18-20	11-20-20	
Lead	**ND**	1.1	EPA 200.8	11-18-20	11-19-20	
Manganese	**7100**	56	EPA 6010D	11-18-20	11-20-20	
Mercury	**ND**	0.50	EPA 7470A	11-20-20	11-20-20	
Selenium	**ND**	5.6	EPA 200.8	11-18-20	11-19-20	
Silver	**ND**	11	EPA 200.8	11-18-20	11-19-20	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-133
Project: 1903-00129-RI

TOTAL METALS
EPA 200.8/6010D/7470A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1118WM1					
Arsenic	**ND**	3.3	EPA 200.8	11-18-20	11-18-20	
Barium	**ND**	28	EPA 200.8	11-18-20	11-18-20	
Cadmium	**ND**	4.4	EPA 200.8	11-18-20	11-18-20	
Chromium	**ND**	11	EPA 200.8	11-18-20	11-18-20	
Lead	**ND**	1.1	EPA 200.8	11-18-20	11-19-20	
Selenium	**ND**	5.6	EPA 200.8	11-18-20	11-18-20	
Silver	**ND**	11	EPA 200.8	11-18-20	11-18-20	
Laboratory ID:	MB1118WM1					
Iron	**ND**	56	EPA 6010D	11-18-20	11-20-20	
Manganese	**ND**	11	EPA 6010D	11-18-20	11-20-20	
Laboratory ID:	MB1120W1					
Mercury	**ND**	0.50	EPA 7470A	11-20-20	11-20-20	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-133
Project: 1903-00129-RI

TOTAL METALS
EPA 200.8/6010D/7470A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-072-04										
	ORIG	DUP									
Arsenic	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Barium	**35.3**	**36.0**	NA	NA		NA		NA	2	20	
Cadmium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Chromium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Lead	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Selenium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Silver	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Laboratory ID:	11-072-04										
Iron	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Manganese	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Laboratory ID:	11-133-01										
Mercury	**ND**	**ND**	NA	NA		NA		NA	NA	20	
MATRIX SPIKES											
Laboratory ID:	11-072-04										
	MS	MSD	MS	MSD		MS	MSD				
Arsenic	**214**	**211**	222	222	ND	**96**	**95**	75-125	2	20	
Barium	**224**	**224**	222	222	35.3	**85**	**85**	75-125	0	20	
Cadmium	**214**	**212**	222	222	ND	**97**	**96**	75-125	1	20	
Chromium	**183**	**181**	222	222	ND	**82**	**81**	75-125	1	20	
Lead	**198**	**193**	222	222	ND	**89**	**87**	75-125	3	20	
Selenium	**219**	**223**	222	222	ND	**99**	**101**	75-125	2	20	
Silver	**213**	**208**	222	222	ND	**96**	**94**	75-125	2	20	
Laboratory ID:	11-072-04										
Iron	**20700**	**20700**	22200	22200	ND	**93**	**93**	75-125	0	20	
Manganese	**207**	**206**	222	222	ND	**93**	**93**	75-125	1	20	
Laboratory ID:	11-133-01										
Mercury	**11.9**	**11.9**	12.5	12.5	ND	**95**	**95**	75-125	1	20	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-133
Project: 1903-00129-RI

DISSOLVED METALS
EPA 200.8/6010D/7470A

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW6-111220**					
Laboratory ID:	11-133-01					
Arsenic	**15**	3.0	EPA 200.8	11-13-20	11-18-20	
Barium	**ND**	25	EPA 200.8	11-13-20	11-18-20	
Cadmium	**ND**	4.0	EPA 200.8	11-13-20	11-18-20	
Chromium	**ND**	10	EPA 200.8	11-13-20	11-18-20	
Iron	**16000**	500	EPA 6010D	11-13-20	11-18-20	
Lead	**ND**	1.0	EPA 200.8	11-13-20	11-18-20	
Manganese	**4500**	100	EPA 6010D	11-13-20	11-18-20	
Mercury	**ND**	0.50	EPA 7470A	11-13-20	11-20-20	
Selenium	**ND**	5.0	EPA 200.8	11-13-20	11-18-20	
Silver	**ND**	10	EPA 200.8	11-13-20	11-18-20	
Client ID:	**MW7-111220**					
Laboratory ID:	11-133-02					
Arsenic	**21**	3.0	EPA 200.8	11-13-20	11-18-20	
Barium	**40**	25	EPA 200.8	11-13-20	11-18-20	
Cadmium	**ND**	4.0	EPA 200.8	11-13-20	11-18-20	
Chromium	**ND**	10	EPA 200.8	11-13-20	11-18-20	
Iron	**37000**	500	EPA 6010D	11-13-20	11-18-20	
Lead	**ND**	1.0	EPA 200.8	11-13-20	11-18-20	
Manganese	**7600**	100	EPA 6010D	11-13-20	11-18-20	
Mercury	**ND**	0.50	EPA 7470A	11-13-20	11-20-20	
Selenium	**ND**	5.0	EPA 200.8	11-13-20	11-18-20	
Silver	**ND**	10	EPA 200.8	11-13-20	11-18-20	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-133
Project: 1903-00129-RI

DISSOLVED METALS
EPA 200.8/6010D/7470A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1113F1					
Arsenic	**ND**	3.0	EPA 200.8	11-13-20	11-18-20	
Barium	**ND**	25	EPA 200.8	11-13-20	11-18-20	
Cadmium	**ND**	4.0	EPA 200.8	11-13-20	11-18-20	
Chromium	**ND**	10	EPA 200.8	11-13-20	11-18-20	
Lead	**ND**	1.0	EPA 200.8	11-13-20	11-18-20	
Selenium	**ND**	5.0	EPA 200.8	11-13-20	11-18-20	
Silver	**ND**	10	EPA 200.8	11-13-20	11-18-20	
Laboratory ID:	MB1113F1					
Iron	**ND**	56	EPA 6010D	11-13-20	11-18-20	
Manganese	**ND**	11	EPA 6010D	11-13-20	11-18-20	
Laboratory ID:	MB1113F1					
Mercury	**ND**	0.50	EPA 7470A	11-13-20	11-20-20	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-133
Project: 1903-00129-RI

DISSOLVED METALS
EPA 200.8/6010D/7470A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-119-37										
	ORIG	DUP									
Arsenic	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Barium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Cadmium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Chromium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Lead	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Selenium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Silver	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Laboratory ID:	11-134-01										
Iron	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Manganese	**565**	**577**	NA	NA		NA		NA	2	20	
Laboratory ID:	11-134-02										
Mercury	**ND**	**ND**	NA	NA		NA		NA	NA	20	
MATRIX SPIKES											
Laboratory ID:	11-119-37										
	MS	MSD	MS	MSD		MS	MSD				
Arsenic	**74.4**	**76.4**	80.0	80.0	ND	**93**	**96**	75-125	3	20	
Barium	**91.2**	**90.6**	80.0	80.0	20.2	**89**	**88**	75-125	1	20	
Cadmium	**76.4**	**76.4**	80.0	80.0	ND	**96**	**96**	75-125	0	20	
Chromium	**68.2**	**68.4**	80.0	80.0	ND	**85**	**86**	75-125	0	20	
Lead	**75.2**	**67.4**	80.0	80.0	ND	**94**	**84**	75-125	11	20	
Selenium	**77.2**	**78.2**	80.0	80.0	ND	**97**	**98**	75-125	1	20	
Silver	**76.0**	**77.4**	80.0	80.0	ND	**95**	**97**	75-125	2	20	
Laboratory ID:	11-134-01										
Iron	**22500**	**22400**	22200	22200	ND	**102**	**101**	75-125	0	20	
Manganese	**1150**	**1140**	556	556	565	**106**	**104**	75-125	1	20	
Laboratory ID:	11-134-02										
Mercury	**12.0**	**11.8**	12.5	12.5	ND	**96**	**95**	75-125	1	20	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-133
Project: 1903-00129-RI

AMMONIA (as Nitrogen)
SM 4500-NH_3 D

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW6-111220**					
Laboratory ID:	11-133-01					
Ammonia	**1.2**	0.050	SM 4500-NH3 D	11-17-20	11-17-20	
Client ID:	**MW7-111220**					
Laboratory ID:	11-133-02					
Ammonia	**3.8**	0.050	SM 4500-NH3 D	11-17-20	11-17-20	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-133
Project: 1903-00129-RI

AMMONIA (as Nitrogen)
SM 4500-NH_3 D
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1117W1					
Ammonia	**ND**	0.050	SM 4500-NH3 D	11-17-20	11-17-20	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	11-176-01								
	ORIG	DUP							
Ammonia	**0.502**	**0.523**	NA	NA	NA	NA	4	11	
MATRIX SPIKE									
Laboratory ID:	11-176-01								
	MS		MS		MS				
Ammonia	**5.64**		5.00	0.502	103	76-118	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB1117W1								
	SB		SB		SB				
Ammonia	**5.01**		5.00	NA	100	88-110	NA	NA	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-133
Project: 1903-00129-RI

pH
SM 4500-H B

Matrix: Water
Units: pH (@ 25ºC)

Analyte	Result	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW6-111220**				
Laboratory ID:	11-133-01				
pH	**6.5**	SM 4500-H B	11-13-20	11-13-20	
Client ID:	**MW7-111220**				
Laboratory ID:	11-133-02				
pH	**6.5**	SM 4500-H B	11-13-20	11-13-20	

OnSite Environmental Inc.

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 methods 8260 & 8270, 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

Nov 20 2020
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
MW6-111220	Water	20-A018406	Redox
MW7-111220	Water	20-A018407	Redox

Your samples were received on Friday, November 13, 2020. At the time of receipt, the samples were logged in and properly maintained prior to the subsequent analysis.

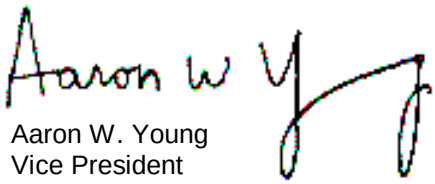
The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

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
Vice President

Project #: 1903-00129-RI
PO Number: 11-133

BACT = Bacteriological
CONV = Conventionals
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 #: 1903-00129-RI
PO Number: 11-133
All results reported on an as received basis.

Date Received: 11/13/20
Date Reported: 11/20/20

AMTEST Identification Number **20-A018406**
Client Identification **MW6-111220**
Sampling Date **11/12/20, 12:20**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Redox Potential	237.	unit		200	ASTM D1498-76	DM	11/13/20

AMTEST Identification Number **20-A018407**
Client Identification **MW7-111220**
Sampling Date **11/12/20, 13:45**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Redox Potential	250.	unit		200	ASTM D1498-76	DM	11/13/20

Aaron W. Young
Vice President

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

Professional Analytical Services

QC Summary for sample numbers: 20-A018406 to 20-A018407

DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	DUP VALUE	RPD
20-A018446	Redox Potential	unit	205.	218.	6.1
20-A018406	Redox Potential	unit	237.	256.	7.7

STANDARD REFERENCE MATERIALS

ANALYTE	UNITS	TRUE VALUE	MEASURED VALUE	RECOVERY
Redox Potential	unit	438.	438.	100. %
Redox Potential	unit	438.	442.	101. %

OnSite Environmental Inc.

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

Laboratory Reference #: 11-133

Laboratory: AmTest Laboratories

Attention: Aaron Young

13600 NE 126th Pl Kirkland, WA 98034

Phone Number: (425) 885-1664

Turnaround Request

1 Day 2 Day 3 Day

Standard

Other: _____

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 1903-00129-~~R1~~ RI A4

Project Name: _____

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont	Requested Analyses
	MW6-111220 18406 07	11/12/20	12:20	W	1	Eh (ORP)
	MW7-111220	11/12/20	13:45	W	1	Eh (ORP)

	Company	Date	Time	Comments/Special Instructions
Relinquished by:	OnSite Env	11/13/20	1330	EDDs
Received by:	AmTest	11/13/20	1330	
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

T=5.5

P.4

Chain of Custody

Page 1 of 1

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

Company: EMPRO ENVIRONMENTAL
Project Number: 1903-00129-RH
Project Name: GREEN COVE PARK
Project Manager: KIM KIM
Sampled by: HOANG ROSARIO

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
☐ _____ (other)

Laboratory Number: 11-133

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	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~~ BENZOIC ACID	~~HEM (oil and grease)~~ 1664A AMMONIA	pH	Fe (ORP)	Mn	Fe	% Moisture
1	MW6-111220	11/12/2020	1220	WATER	17		X		X					X					X		X	X	X	X	X	X	
2	MW7-111220		1345		17																						
	LAST ENTRY																										

11/12/2020

	Signature	Company	Date	Time
Relinquished		EMPRO ENVIRONMENTAL	11/13/2020	820
Received		ALPHA	11/13	8:20
Relinquished			11/13	10:00
Received		CORE	11/13/20	1000
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
- FOR RCRA METALS, PLEASE PERFORM TOTAL AND DISSOLVED ANALYSES, FILTER AS NECESSARY
- HOLD REMAINDER OF SAMPLES PENDING FURTHER INSTRUCTION

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

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

November 24, 2020

Kim Kim
EnPro Environmental
151 Hekili Street, Suite 210
Kailua, HI 96734

Re: Analytical Data for Project 1903-00129-RI
Laboratory Reference No. 2011-134

Dear Kim:

Enclosed are the analytical results and associated quality control data for samples submitted on November 13, 2020.

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,

David Baumeister
Project Manager

Enclosures

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-134
Project: 1903-00129-RI

Case Narrative

Samples were collected on November 12, 2020 and received by the laboratory on November 13, 2020. 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.

Semivolatiles EPA 8270E/SIM Analysis

Sample MW5-111220 had two surrogate recoveries outside of control limits. The results from the re-extracted sample confirmed the original results.

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: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-134
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW1-111220**					
Laboratory ID:	11-134-01					
Benzene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Toluene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
o-Xylene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Gasoline	**ND**	100	NWTPH-Gx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*99*	*65-120*				
Client ID:	**MW5-111220**					
Laboratory ID:	11-134-02					
Benzene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Toluene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
o-Xylene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Gasoline	**ND**	100	NWTPH-Gx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*65-120*				

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-134
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1113W2					
Benzene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Toluene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
o-Xylene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Gasoline	**ND**	100	NWTPH-Gx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*65-120*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-109-18										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*99*	*100*	*65-120*			
SPIKE BLANKS											
Laboratory ID:	SB1113W1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**52.2**	**50.1**	50.0	50.0		**104**	**100**	83-117	4	11	
Toluene	**54.1**	**52.1**	50.0	50.0		**108**	**104**	86-115	4	12	
Ethyl Benzene	**53.6**	**51.5**	50.0	50.0		**107**	**103**	86-117	4	12	
m,p-Xylene	**54.5**	**52.3**	50.0	50.0		**109**	**105**	85-118	4	12	
o-Xylene	**52.9**	**51.2**	50.0	50.0		**106**	**102**	86-115	3	11	
Surrogate:											
Fluorobenzene						*81*	*104*	*65-120*			

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-134
Project: 1903-00129-RI

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW1-111220**					
Laboratory ID:	11-134-01					
Diesel Range Organics	**ND**	0.22	NWTPH-Dx	11-18-20	11-19-20	
Lube Oil Range Organics	**ND**	0.22	NWTPH-Dx	11-18-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*98*	*50-150*				
Client ID:	**MW5-111220**					
Laboratory ID:	11-134-02					
Diesel Range Organics	**ND**	0.21	NWTPH-Dx	11-18-20	11-19-20	
Lube Oil Range Organics	**0.27**	0.21	NWTPH-Dx	11-18-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*81*	*50-150*				

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-134
Project: 1903-00129-RI

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1118W1					
Diesel Range Organics	**ND**	0.20	NWTPH-Dx	11-18-20	11-19-20	
Lube Oil Range Organics	**ND**	0.20	NWTPH-Dx	11-18-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*97*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-153-01										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range Organics	**0.249**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*97*	*89*	*50-150*			

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-134
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW1-111220**					
Laboratory ID:	11-134-01					
Benzoic Acid	**ND**	26	EPA 8270E	11-17-20	11-18-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*35*	*10 - 80*				
Phenol-d6	*23*	*10 - 87*				
Nitrobenzene-d5	*64*	*33 - 105*				
2-Fluorobiphenyl	*67*	*41 - 105*				
2,4,6-Tribromophenol	*74*	*25 - 124*				
Terphenyl-d14	*72*	*47 - 116*				

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-134
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW5-111220**					
Laboratory ID:	11-134-02					
Naphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
2-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
1-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthylene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Fluorene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Phenanthrene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Anthracene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Fluoranthene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Pyrene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]anthracene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Chrysene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]pyrene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzoic Acid	**ND**	27	EPA 8270E	11-17-20	11-18-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*13*	*10 - 80*				
Phenol-d6	*9.7*	*10 - 87*				
Nitrobenzene-d5	*24*	*33 - 105*				Q
2-Fluorobiphenyl	*32*	*41 - 105*				Q
2,4,6-Tribromophenol	*65*	*25 - 124*				
Terphenyl-d14	*65*	*47 - 116*				

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-134
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1117W1					
Naphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
2-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
1-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthylene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Fluorene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Phenanthrene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Anthracene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Fluoranthene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Pyrene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]anthracene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Chrysene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]pyrene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzoic Acid	**ND**	27	EPA 8270E	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*33*	*10 - 80*				
Phenol-d6	*22*	*10 - 87*				
Nitrobenzene-d5	*62*	*33 - 105*				
2-Fluorobiphenyl	*60*	*41 - 105*				
2,4,6-Tribromophenol	*69*	*25 - 124*				
Terphenyl-d14	*69*	*47 - 116*				

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-134
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1117W1									
	SB	SBD	SB	SBD	SB	SBD				
Phenol	**10.0**	**9.18**	40.0	40.0	25	23	21 - 53	9	25	
2-Chlorophenol	**26.1**	**24.0**	40.0	40.0	65	60	38 - 92	8	29	
1,4-Dichlorobenzene	**11.7**	**10.4**	20.0	20.0	59	52	30 - 88	12	29	
n-Nitroso-di-n-propylamine	**13.2**	**12.7**	20.0	20.0	66	64	40 - 103	4	22	
1,2,4-Trichlorobenzene	**12.8**	**11.5**	20.0	20.0	64	58	37 - 95	11	25	
4-Chloro-3-methylphenol	**30.7**	**29.0**	40.0	40.0	77	73	57 - 101	6	17	
Acenaphthene	**14.1**	**12.7**	20.0	20.0	71	64	51 - 97	10	18	
4-Nitrophenol	**14.5**	**13.1**	40.0	40.0	36	33	23 - 64	10	34	
2,4-Dinitrotoluene	**15.0**	**13.9**	20.0	20.0	75	70	52 - 103	8	17	
Pentachlorophenol	**34.7**	**31.8**	40.0	40.0	87	80	40 - 124	9	35	
Pyrene	**16.2**	**15.2**	20.0	20.0	81	76	52 - 107	6	19	
Surrogate:										
2-Fluorophenol					*38*	*33*	*10 - 80*			
Phenol-d6					*25*	*23*	*10 - 87*			
Nitrobenzene-d5					*63*	*57*	*33 - 105*			
2-Fluorobiphenyl					*65*	*62*	*41 - 105*			
2,4,6-Tribromophenol					*77*	*73*	*25 - 124*			
Terphenyl-d14					*73*	*69*	*47 - 116*			

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-134
Project: 1903-00129-RI

TOTAL METALS
EPA 200.8/6010D/7470A

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW1-111220**					
Laboratory ID:	11-134-01					
Arsenic	**ND**	3.3	EPA 200.8	11-18-20	11-19-20	
Barium	**30**	28	EPA 200.8	11-18-20	11-19-20	
Cadmium	**ND**	4.4	EPA 200.8	11-18-20	11-19-20	
Chromium	**ND**	11	EPA 200.8	11-18-20	11-19-20	
Iron	**2700**	56	EPA 6010D	11-18-20	11-20-20	
Lead	**ND**	1.1	EPA 200.8	11-18-20	11-19-20	
Manganese	**630**	11	EPA 6010D	11-18-20	11-20-20	
Mercury	**ND**	0.50	EPA 7470A	11-20-20	11-20-20	
Selenium	**ND**	5.6	EPA 200.8	11-18-20	11-19-20	
Silver	**ND**	11	EPA 200.8	11-18-20	11-19-20	
Client ID:	**MW5-111220**					
Laboratory ID:	11-134-02					
Arsenic	**73**	3.3	EPA 200.8	11-18-20	11-19-20	
Barium	**50**	28	EPA 200.8	11-18-20	11-19-20	
Cadmium	**ND**	4.4	EPA 200.8	11-18-20	11-19-20	
Chromium	**ND**	11	EPA 200.8	11-18-20	11-19-20	
Iron	**58000**	560	EPA 6010D	11-18-20	11-20-20	
Lead	**ND**	1.1	EPA 200.8	11-18-20	11-19-20	
Manganese	**11000**	110	EPA 6010D	11-18-20	11-20-20	
Mercury	**ND**	0.50	EPA 7470A	11-20-20	11-20-20	
Selenium	**ND**	5.6	EPA 200.8	11-18-20	11-19-20	
Silver	**ND**	11	EPA 200.8	11-18-20	11-19-20	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-134
Project: 1903-00129-RI

TOTAL METALS
EPA 200.8/6010D/7470A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1118WM1					
Arsenic	**ND**	3.3	EPA 200.8	11-18-20	11-18-20	
Barium	**ND**	28	EPA 200.8	11-18-20	11-18-20	
Cadmium	**ND**	4.4	EPA 200.8	11-18-20	11-18-20	
Chromium	**ND**	11	EPA 200.8	11-18-20	11-18-20	
Lead	**ND**	1.1	EPA 200.8	11-18-20	11-19-20	
Selenium	**ND**	5.6	EPA 200.8	11-18-20	11-18-20	
Silver	**ND**	11	EPA 200.8	11-18-20	11-18-20	
Laboratory ID:	MB1118WM1					
Iron	**ND**	56	EPA 6010D	11-18-20	11-20-20	
Manganese	**ND**	11	EPA 6010D	11-18-20	11-20-20	
Laboratory ID:	MB1120W1					
Mercury	**ND**	0.50	EPA 7470A	11-20-20	11-20-20	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-134
Project: 1903-00129-RI

TOTAL METALS
EPA 200.8/6010D/7470A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-072-04										
	ORIG	DUP									
Arsenic	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Barium	**35.3**	**36.0**	NA	NA		NA		NA	2	20	
Cadmium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Chromium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Lead	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Selenium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Silver	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Laboratory ID:	11-072-04										
Iron	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Manganese	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Laboratory ID:	11-133-01										
Mercury	**ND**	**ND**	NA	NA		NA		NA	NA	20	
MATRIX SPIKES											
Laboratory ID:	11-072-04										
	MS	MSD	MS	MSD		MS	MSD				
Arsenic	**214**	**211**	222	222	ND	**96**	**95**	75-125	2	20	
Barium	**224**	**224**	222	222	35.3	**85**	**85**	75-125	0	20	
Cadmium	**214**	**212**	222	222	ND	**97**	**96**	75-125	1	20	
Chromium	**183**	**181**	222	222	ND	**82**	**81**	75-125	1	20	
Lead	**198**	**193**	222	222	ND	**89**	**87**	75-125	3	20	
Selenium	**219**	**223**	222	222	ND	**99**	**101**	75-125	2	20	
Silver	**213**	**208**	222	222	ND	**96**	**94**	75-125	2	20	
Laboratory ID:	11-072-04										
Iron	**20700**	**20700**	22200	22200	ND	**93**	**93**	75-125	0	20	
Manganese	**207**	**206**	222	222	ND	**93**	**93**	75-125	1	20	
Laboratory ID:	11-133-01										
Mercury	**11.9**	**11.9**	12.5	12.5	ND	**95**	**95**	75-125	1	20	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-134
Project: 1903-00129-RI

DISSOLVED METALS
EPA 200.8/6010D/7470A

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW1-111220**					
Laboratory ID:	11-134-01					
Arsenic	**ND**	3.0	EPA 200.8	11-13-20	11-18-20	
Barium	**ND**	25	EPA 200.8	11-13-20	11-18-20	
Cadmium	**ND**	4.0	EPA 200.8	11-13-20	11-18-20	
Chromium	**ND**	10	EPA 200.8	11-13-20	11-18-20	
Iron	**ND**	56	EPA 6010D	11-13-20	11-18-20	
Lead	**ND**	1.0	EPA 200.8	11-13-20	11-18-20	
Manganese	**560**	11	EPA 6010D	11-13-20	11-18-20	
Mercury	**ND**	0.50	EPA 7470A	11-13-20	11-20-20	
Selenium	**ND**	5.0	EPA 200.8	11-13-20	11-18-20	
Silver	**ND**	10	EPA 200.8	11-13-20	11-18-20	
Client ID:	**MW5-111220**					
Laboratory ID:	11-134-02					
Arsenic	**42**	3.0	EPA 200.8	11-13-20	11-18-20	
Barium	**26**	25	EPA 200.8	11-13-20	11-18-20	
Cadmium	**ND**	4.0	EPA 200.8	11-13-20	11-18-20	
Chromium	**ND**	10	EPA 200.8	11-13-20	11-18-20	
Iron	**42000**	500	EPA 6010D	11-13-20	11-18-20	
Lead	**ND**	1.0	EPA 200.8	11-13-20	11-18-20	
Manganese	**13000**	100	EPA 6010D	11-13-20	11-18-20	
Mercury	**ND**	0.50	EPA 7470A	11-13-20	11-20-20	
Selenium	**ND**	5.0	EPA 200.8	11-13-20	11-18-20	
Silver	**ND**	10	EPA 200.8	11-13-20	11-18-20	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-134
Project: 1903-00129-RI

DISSOLVED METALS
EPA 200.8/6010D/7470A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1113F1					
Arsenic	**ND**	3.0	EPA 200.8	11-13-20	11-18-20	
Barium	**ND**	25	EPA 200.8	11-13-20	11-18-20	
Cadmium	**ND**	4.0	EPA 200.8	11-13-20	11-18-20	
Chromium	**ND**	10	EPA 200.8	11-13-20	11-18-20	
Lead	**ND**	1.0	EPA 200.8	11-13-20	11-18-20	
Selenium	**ND**	5.0	EPA 200.8	11-13-20	11-18-20	
Silver	**ND**	10	EPA 200.8	11-13-20	11-18-20	
Laboratory ID:	MB1113F1					
Iron	**ND**	56	EPA 6010D	11-13-20	11-18-20	
Manganese	**ND**	11	EPA 6010D	11-13-20	11-18-20	
Laboratory ID:	MB1113F1					
Mercury	**ND**	0.50	EPA 7470A	11-13-20	11-20-20	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-134
Project: 1903-00129-RI

DISSOLVED METALS
EPA 200.8/6010D/7470A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-119-37										
	ORIG	DUP									
Arsenic	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Barium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Cadmium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Chromium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Lead	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Selenium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Silver	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Laboratory ID:	11-134-01										
Iron	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Manganese	**565**	**577**	NA	NA		NA		NA	2	20	
Laboratory ID:	11-134-02										
Mercury	**ND**	**ND**	NA	NA		NA		NA	NA	20	
MATRIX SPIKES											
Laboratory ID:	11-119-37										
	MS	MSD	MS	MSD		MS	MSD				
Arsenic	**74.4**	**76.4**	80.0	80.0	ND	**93**	**96**	75-125	3	20	
Barium	**91.2**	**90.6**	80.0	80.0	20.2	**89**	**88**	75-125	1	20	
Cadmium	**76.4**	**76.4**	80.0	80.0	ND	**96**	**96**	75-125	0	20	
Chromium	**68.2**	**68.4**	80.0	80.0	ND	**85**	**86**	75-125	0	20	
Lead	**75.2**	**67.4**	80.0	80.0	ND	**94**	**84**	75-125	11	20	
Selenium	**77.2**	**78.2**	80.0	80.0	ND	**97**	**98**	75-125	1	20	
Silver	**76.0**	**77.4**	80.0	80.0	ND	**95**	**97**	75-125	2	20	
Laboratory ID:	11-134-01										
Iron	**22500**	**22400**	22200	22200	ND	**102**	**101**	75-125	0	20	
Manganese	**1150**	**1140**	556	556	565	**106**	**104**	75-125	1	20	
Laboratory ID:	11-134-02										
Mercury	**12.0**	**11.8**	12.5	12.5	ND	**96**	**95**	75-125	1	20	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-134
Project: 1903-00129-RI

AMMONIA (as Nitrogen)
SM 4500-NH_3 D

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW1-111220**					
Laboratory ID:	11-134-01					
Ammonia	**ND**	0.050	SM 4500-NH3 D	11-17-20	11-17-20	
Client ID:	**MW5-111220**					
Laboratory ID:	11-134-02					
Ammonia	**0.81**	0.050	SM 4500-NH3 D	11-17-20	11-17-20	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-134
Project: 1903-00129-RI

AMMONIA (as Nitrogen)
SM 4500-NH_3 D
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1117W1					
Ammonia	**ND**	0.050	SM 4500-NH3 D	11-17-20	11-17-20	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	11-176-01								
	ORIG	DUP							
Ammonia	**0.502**	**0.523**	NA	NA	NA	NA	4	11	
MATRIX SPIKE									
Laboratory ID:	11-176-01								
	MS		MS		MS				
Ammonia	**5.64**		5.00	0.502	103	76-118	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB1117W1								
	SB		SB		SB				
Ammonia	**5.01**		5.00	NA	100	88-110	NA	NA	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-134
Project: 1903-00129-RI

pH
SM 4500-H B

Matrix: Water
Units: pH (@ 25ºC)

Analyte	Result	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW1-111220**				
Laboratory ID:	11-134-01				
pH	**6.6**	SM 4500-H B	11-13-20	11-13-20	
Client ID:	**MW5-111220**				
Laboratory ID:	11-134-02				
pH	**6.7**	SM 4500-H B	11-13-20	11-13-20	

OnSite Environmental Inc.

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 methods 8260 & 8270, 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

Nov 20 2020
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
MW1-111220	Water	20-A018408	Redox
MW5-111220	Water	20-A018409	Redox

Your samples were received on Friday, November 13, 2020. At the time of receipt, the samples were logged in and properly maintained prior to the subsequent analysis.

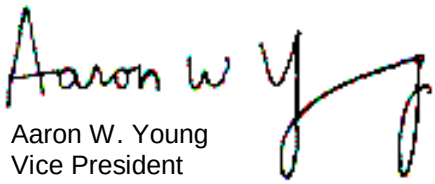
The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

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
Vice President

Project #: 1903-00129-RI
PO Number: 11-134

BACT = Bacteriological
CONV = Conventionals
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 #: 1903-00129-RI
PO Number: 11-134
All results reported on an as received basis.

Date Received: 11/13/20
Date Reported: 11/20/20

AMTEST Identification Number **20-A018408**
Client Identification **MW1-111220**
Sampling Date **11/12/20, 15:00**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Redox Potential	293.	unit		200	ASTM D1498-76	DM	11/13/20

AMTEST Identification Number **20-A018409**
Client Identification **MW5-111220**
Sampling Date **11/12/20, 16:15**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Redox Potential	245.	unit		200	ASTM D1498-76	DM	11/13/20

Aaron W. Young
Vice President

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

Professional Analytical Services

QC Summary for sample numbers: 20-A018408 to 20-A018409

DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	DUP VALUE	RPD
20-A018446	Redox Potential	unit	205.	218.	6.1
20-A018406	Redox Potential	unit	237.	256.	7.7

STANDARD REFERENCE MATERIALS

ANALYTE	UNITS	TRUE VALUE	MEASURED VALUE	RECOVERY
Redox Potential	unit	438.	438.	100. %
Redox Potential	unit	438.	442.	101. %

OnSite Environmental Inc.

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

Laboratory Reference #: 11-134

Laboratory: AmTest Laboratories

Attention: Aaron Young

13600 NE 126th Pl Kirkland, WA 98034

Phone Number: (425) 885-1664

Turnaround Request

1 Day 2 Day 3 Day

Standard

Other: _____

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 1903-00129-~~R1~~ RI

Project Name: AM

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analyses
	MW1-111220 18408	11/12/20	15:00	W	1	Eh (ORP)
	MW5-111220 09	11/12/20	16:15	W	1	Eh (ORP)

	Company	Date	Time	Comments/Special Instructions
Relinquished by:	OnSite	11/13/20	1330	EDDs
Received by:	AmTest	11/13/20	1330	
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

T=5.5

P.4

Chain of Custody

Page 1 of 1

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

Company: ENPRO ENVIRONMENTAL
Project Number: 1903-00129-R1
Project Name: GREEN COVE PARK
Project Manager: KIM KIM
Sampled by: HOANO ROSARIO

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
☐ _____ (other)

Laboratory Number: 11-134

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	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~~ BENZOIC ACID	HEM (oil and grease) 1664A AMMONIA	pH	Eh (ORP)	Mn	Fe	% Moisture
1	MW1-111220	11/12/2020	1500	WATER	17		X		X										X		X	X	X	X	X	X	
2	MW5-111220	11/12/2020	1615	WATER	12		X		X					X					X		X	X	X	X	X	X	
	LAST ENTRY																										

	Signature	Company	Date	Time
Relinquished		ENPRO ENVIRONMENTAL	12/13/2020	820
Received		ALPHA	12/13/2020	8:25
Relinquished		"	12/13	10:06
Received		CORE	11/13/20	1006
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
- FOR RCRA METALS, PLEASE PERFORM TOTAL AND DISSOLVED ANALYSES, FILTER AS NECESSARY
- HOLD REMAINDER OF SAMPLES PENDING FURTHER INSTRUCTION

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

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

November 24, 2020

Kim Kim
EnPro Environmental
151 Hekili Street, Suite 210
Kailua, HI 96734

Re: Analytical Data for Project 1903-00129-RI
Laboratory Reference No. 2011-137

Dear Kim:

Enclosed are the analytical results and associated quality control data for samples submitted on November 13, 2020.

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,

David Baumeister
Project Manager

Enclosures

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-137
Project: 1903-00129-RI

Case Narrative

Samples were collected on November 13, 2020 and received by the laboratory on November 13, 2020. 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: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-137
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW4-111320**					
Laboratory ID:	11-137-01					
Benzene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Toluene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
o-Xylene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Gasoline	**ND**	100	NWTPH-Gx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*78*	*65-120*				
Client ID:	**MW2-111320**					
Laboratory ID:	11-137-02					
Benzene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Toluene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
o-Xylene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Gasoline	**ND**	100	NWTPH-Gx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*65-120*				

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-137
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1113W2					
Benzene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Toluene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
o-Xylene	**ND**	1.0	EPA 8021B	11-13-20	11-13-20	
Gasoline	**ND**	100	NWTPH-Gx	11-13-20	11-13-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*65-120*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-109-18										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*99*	*100*	*65-120*			
SPIKE BLANKS											
Laboratory ID:	SB1113W1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**52.2**	**50.1**	50.0	50.0		**104**	**100**	83-117	4	11	
Toluene	**54.1**	**52.1**	50.0	50.0		**108**	**104**	86-115	4	12	
Ethyl Benzene	**53.6**	**51.5**	50.0	50.0		**107**	**103**	86-117	4	12	
m,p-Xylene	**54.5**	**52.3**	50.0	50.0		**109**	**105**	85-118	4	12	
o-Xylene	**52.9**	**51.2**	50.0	50.0		**106**	**102**	86-115	3	11	
Surrogate:											
Fluorobenzene						*81*	*104*	*65-120*			

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-137
Project: 1903-00129-RI

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW4-111320**					
Laboratory ID:	11-137-01					
Diesel Range Organics	**ND**	0.22	NWTPH-Dx	11-18-20	11-19-20	
Lube Oil Range Organics	**0.31**	0.22	NWTPH-Dx	11-18-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*96*	*50-150*				
Client ID:	**MW2-111320**					
Laboratory ID:	11-137-02					
Diesel Range Organics	**ND**	0.21	NWTPH-Dx	11-18-20	11-19-20	
Lube Oil Range Organics	**0.54**	0.21	NWTPH-Dx	11-18-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*102*	*50-150*				

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-137
Project: 1903-00129-RI

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1118W1					
Diesel Range Organics	**ND**	0.20	NWTPH-Dx	11-18-20	11-19-20	
Lube Oil Range Organics	**ND**	0.20	NWTPH-Dx	11-18-20	11-19-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*97*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-153-01										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range Organics	**0.249**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*97*	*89*	*50-150*			

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-137
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW4-111320**					
Laboratory ID:	11-137-01					
Naphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
2-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
1-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthylene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Fluorene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Phenanthrene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Anthracene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Fluoranthene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Pyrene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]anthracene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Chrysene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]pyrene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzoic Acid	**ND**	27	EPA 8270E	11-17-20	11-18-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*38*	*10 - 80*				
Phenol-d6	*27*	*10 - 87*				
Nitrobenzene-d5	*58*	*33 - 105*				
2-Fluorobiphenyl	*62*	*41 - 105*				
2,4,6-Tribromophenol	*79*	*25 - 124*				
Terphenyl-d14	*71*	*47 - 116*				

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-137
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW2-111320**					
Laboratory ID:	11-137-02					
Naphthalene	**ND**	0.099	EPA 8270E/SIM	11-17-20	11-17-20	
2-Methylnaphthalene	**ND**	0.099	EPA 8270E/SIM	11-17-20	11-17-20	
1-Methylnaphthalene	**ND**	0.099	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthylene	**ND**	0.099	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthene	**ND**	0.099	EPA 8270E/SIM	11-17-20	11-17-20	
Fluorene	**ND**	0.099	EPA 8270E/SIM	11-17-20	11-17-20	
Phenanthrene	**ND**	0.099	EPA 8270E/SIM	11-17-20	11-17-20	
Anthracene	**ND**	0.099	EPA 8270E/SIM	11-17-20	11-17-20	
Fluoranthene	**ND**	0.099	EPA 8270E/SIM	11-17-20	11-17-20	
Pyrene	**ND**	0.099	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]anthracene	**ND**	0.0099	EPA 8270E/SIM	11-17-20	11-17-20	
Chrysene	**ND**	0.0099	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[b]fluoranthene	**ND**	0.0099	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo(j,k)fluoranthene	**ND**	0.0099	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]pyrene	**ND**	0.0099	EPA 8270E/SIM	11-17-20	11-17-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.0099	EPA 8270E/SIM	11-17-20	11-17-20	
Dibenz[a,h]anthracene	**ND**	0.0099	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[g,h,i]perylene	**ND**	0.0099	EPA 8270E/SIM	11-17-20	11-17-20	
Benzoic Acid	**ND**	27	EPA 8270E	11-17-20	11-18-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*37*	*10 - 80*				
Phenol-d6	*24*	*10 - 87*				
Nitrobenzene-d5	*55*	*33 - 105*				
2-Fluorobiphenyl	*59*	*41 - 105*				
2,4,6-Tribromophenol	*65*	*25 - 124*				
Terphenyl-d14	*61*	*47 - 116*				

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-137
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1117W1					
Naphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
2-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
1-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthylene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Fluorene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Phenanthrene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Anthracene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Fluoranthene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Pyrene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]anthracene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Chrysene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]pyrene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzoic Acid	**ND**	27	EPA 8270E	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*33*	*10 - 80*				
Phenol-d6	*22*	*10 - 87*				
Nitrobenzene-d5	*62*	*33 - 105*				
2-Fluorobiphenyl	*60*	*41 - 105*				
2,4,6-Tribromophenol	*69*	*25 - 124*				
Terphenyl-d14	*69*	*47 - 116*				

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-137
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1117W1									
	SB	SBD	SB	SBD	SB	SBD				
Phenol	**10.0**	**9.18**	40.0	40.0	25	23	21 - 53	9	25	
2-Chlorophenol	**26.1**	**24.0**	40.0	40.0	65	60	38 - 92	8	29	
1,4-Dichlorobenzene	**11.7**	**10.4**	20.0	20.0	59	52	30 - 88	12	29	
n-Nitroso-di-n-propylamine	**13.2**	**12.7**	20.0	20.0	66	64	40 - 103	4	22	
1,2,4-Trichlorobenzene	**12.8**	**11.5**	20.0	20.0	64	58	37 - 95	11	25	
4-Chloro-3-methylphenol	**30.7**	**29.0**	40.0	40.0	77	73	57 - 101	6	17	
Acenaphthene	**14.1**	**12.7**	20.0	20.0	71	64	51 - 97	10	18	
4-Nitrophenol	**14.5**	**13.1**	40.0	40.0	36	33	23 - 64	10	34	
2,4-Dinitrotoluene	**15.0**	**13.9**	20.0	20.0	75	70	52 - 103	8	17	
Pentachlorophenol	**34.7**	**31.8**	40.0	40.0	87	80	40 - 124	9	35	
Pyrene	**16.2**	**15.2**	20.0	20.0	81	76	52 - 107	6	19	
Surrogate:										
2-Fluorophenol					*38*	*33*	*10 - 80*			
Phenol-d6					*25*	*23*	*10 - 87*			
Nitrobenzene-d5					*63*	*57*	*33 - 105*			
2-Fluorobiphenyl					*65*	*62*	*41 - 105*			
2,4,6-Tribromophenol					*77*	*73*	*25 - 124*			
Terphenyl-d14					*73*	*69*	*47 - 116*			

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-137
Project: 1903-00129-RI

TOTAL METALS
EPA 200.8/6010D/7470A

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW4-111320**					
Laboratory ID:	11-137-01					
Arsenic	**ND**	3.3	EPA 200.8	11-18-20	11-19-20	
Barium	**90**	28	EPA 200.8	11-18-20	11-19-20	
Cadmium	**ND**	4.4	EPA 200.8	11-18-20	11-19-20	
Chromium	**ND**	11	EPA 200.8	11-18-20	11-19-20	
Iron	**7300**	56	EPA 6010D	11-18-20	11-20-20	
Lead	**5.9**	1.1	EPA 200.8	11-18-20	11-19-20	
Manganese	**6200**	56	EPA 6010D	11-18-20	11-20-20	
Mercury	**ND**	0.50	EPA 7470A	11-20-20	11-20-20	
Selenium	**ND**	5.6	EPA 200.8	11-18-20	11-19-20	
Silver	**ND**	11	EPA 200.8	11-18-20	11-19-20	
Client ID:	**MW2-111320**					
Laboratory ID:	11-137-02					
Arsenic	**8.2**	3.3	EPA 200.8	11-18-20	11-19-20	
Barium	**55**	28	EPA 200.8	11-18-20	11-19-20	
Cadmium	**ND**	4.4	EPA 200.8	11-18-20	11-19-20	
Chromium	**ND**	11	EPA 200.8	11-18-20	11-19-20	
Iron	**4600**	56	EPA 6010D	11-18-20	11-20-20	
Lead	**ND**	1.1	EPA 200.8	11-18-20	11-19-20	
Manganese	**17000**	220	EPA 6010D	11-18-20	11-20-20	
Mercury	**ND**	0.50	EPA 7470A	11-20-20	11-20-20	
Selenium	**ND**	5.6	EPA 200.8	11-18-20	11-19-20	
Silver	**ND**	11	EPA 200.8	11-18-20	11-19-20	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-137
Project: 1903-00129-RI

TOTAL METALS
EPA 200.8/6010D/7470A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1118WM1					
Arsenic	**ND**	3.3	EPA 200.8	11-18-20	11-18-20	
Barium	**ND**	28	EPA 200.8	11-18-20	11-18-20	
Cadmium	**ND**	4.4	EPA 200.8	11-18-20	11-18-20	
Chromium	**ND**	11	EPA 200.8	11-18-20	11-18-20	
Lead	**ND**	1.1	EPA 200.8	11-18-20	11-19-20	
Selenium	**ND**	5.6	EPA 200.8	11-18-20	11-18-20	
Silver	**ND**	11	EPA 200.8	11-18-20	11-18-20	
Laboratory ID:	MB1118WM1					
Iron	**ND**	56	EPA 6010D	11-18-20	11-20-20	
Manganese	**ND**	11	EPA 6010D	11-18-20	11-20-20	
Laboratory ID:	MB1120W1					
Mercury	**ND**	0.50	EPA 7470A	11-20-20	11-20-20	

Date of Report: November 24, 2020
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Laboratory Reference: 2011-137
Project: 1903-00129-RI

TOTAL METALS
EPA 200.8/6010D/7470A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-072-04										
	ORIG	DUP									
Arsenic	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Barium	**35.3**	**36.0**	NA	NA		NA		NA	2	20	
Cadmium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Chromium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Lead	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Selenium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Silver	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Laboratory ID:	11-072-04										
Iron	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Manganese	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Laboratory ID:	11-133-01										
Mercury	**ND**	**ND**	NA	NA		NA		NA	NA	20	
MATRIX SPIKES											
Laboratory ID:	11-072-04										
	MS	MSD	MS	MSD		MS	MSD				
Arsenic	**214**	**211**	222	222	ND	**96**	**95**	75-125	2	20	
Barium	**224**	**224**	222	222	35.3	**85**	**85**	75-125	0	20	
Cadmium	**214**	**212**	222	222	ND	**97**	**96**	75-125	1	20	
Chromium	**183**	**181**	222	222	ND	**82**	**81**	75-125	1	20	
Lead	**198**	**193**	222	222	ND	**89**	**87**	75-125	3	20	
Selenium	**219**	**223**	222	222	ND	**99**	**101**	75-125	2	20	
Silver	**213**	**208**	222	222	ND	**96**	**94**	75-125	2	20	
Laboratory ID:	11-072-04										
Iron	**20700**	**20700**	22200	22200	ND	**93**	**93**	75-125	0	20	
Manganese	**207**	**206**	222	222	ND	**93**	**93**	75-125	1	20	
Laboratory ID:	11-133-01										
Mercury	**11.9**	**11.9**	12.5	12.5	ND	**95**	**95**	75-125	1	20	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-137
Project: 1903-00129-RI

DISSOLVED METALS
EPA 200.8/6010D/7470A

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW4-111320**					
Laboratory ID:	11-137-01					
Arsenic	**ND**	3.0	EPA 200.8	11-13-20	11-18-20	
Barium	**52**	25	EPA 200.8	11-13-20	11-18-20	
Cadmium	**ND**	4.0	EPA 200.8	11-13-20	11-18-20	
Chromium	**ND**	10	EPA 200.8	11-13-20	11-18-20	
Iron	**260**	56	EPA 6010D	11-13-20	11-18-20	
Lead	**ND**	1.0	EPA 200.8	11-13-20	11-18-20	
Manganese	**6200**	100	EPA 6010D	11-13-20	11-18-20	
Mercury	**ND**	0.50	EPA 7470A	11-13-20	11-20-20	
Selenium	**ND**	5.0	EPA 200.8	11-13-20	11-18-20	
Silver	**ND**	10	EPA 200.8	11-13-20	11-18-20	
Client ID:	**MW2-111320**					
Laboratory ID:	11-137-02					
Arsenic	**7.4**	3.0	EPA 200.8	11-13-20	11-18-20	
Barium	**38**	25	EPA 200.8	11-13-20	11-18-20	
Cadmium	**ND**	4.0	EPA 200.8	11-13-20	11-18-20	
Chromium	**ND**	10	EPA 200.8	11-13-20	11-18-20	
Iron	**2100**	56	EPA 6010D	11-13-20	11-18-20	
Lead	**ND**	1.0	EPA 200.8	11-13-20	11-18-20	
Manganese	**18000**	100	EPA 6010D	11-13-20	11-18-20	
Mercury	**ND**	0.50	EPA 7470A	11-13-20	11-20-20	
Selenium	**ND**	5.0	EPA 200.8	11-13-20	11-18-20	
Silver	**ND**	10	EPA 200.8	11-13-20	11-18-20	

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DISSOLVED METALS
EPA 200.8/6010D/7470A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1113F1					
Arsenic	**ND**	3.0	EPA 200.8	11-13-20	11-18-20	
Barium	**ND**	25	EPA 200.8	11-13-20	11-18-20	
Cadmium	**ND**	4.0	EPA 200.8	11-13-20	11-18-20	
Chromium	**ND**	10	EPA 200.8	11-13-20	11-18-20	
Lead	**ND**	1.0	EPA 200.8	11-13-20	11-18-20	
Selenium	**ND**	5.0	EPA 200.8	11-13-20	11-18-20	
Silver	**ND**	10	EPA 200.8	11-13-20	11-18-20	
Laboratory ID:	MB1113F1					
Iron	**ND**	56	EPA 6010D	11-13-20	11-18-20	
Manganese	**ND**	11	EPA 6010D	11-13-20	11-18-20	
Laboratory ID:	MB1113F1					
Mercury	**ND**	0.50	EPA 7470A	11-13-20	11-20-20	

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DISSOLVED METALS
EPA 200.8/6010D/7470A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-119-37										
	ORIG	DUP									
Arsenic	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Barium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Cadmium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Chromium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Lead	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Selenium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Silver	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Laboratory ID:	11-134-01										
Iron	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Manganese	**565**	**577**	NA	NA		NA		NA	2	20	
Laboratory ID:	11-134-02										
Mercury	**ND**	**ND**	NA	NA		NA		NA	NA	20	
MATRIX SPIKES											
Laboratory ID:	11-119-37										
	MS	MSD	MS	MSD		MS	MSD				
Arsenic	**74.4**	**76.4**	80.0	80.0	ND	**93**	**96**	75-125	3	20	
Barium	**91.2**	**90.6**	80.0	80.0	20.2	**89**	**88**	75-125	1	20	
Cadmium	**76.4**	**76.4**	80.0	80.0	ND	**96**	**96**	75-125	0	20	
Chromium	**68.2**	**68.4**	80.0	80.0	ND	**85**	**86**	75-125	0	20	
Lead	**75.2**	**67.4**	80.0	80.0	ND	**94**	**84**	75-125	11	20	
Selenium	**77.2**	**78.2**	80.0	80.0	ND	**97**	**98**	75-125	1	20	
Silver	**76.0**	**77.4**	80.0	80.0	ND	**95**	**97**	75-125	2	20	
Laboratory ID:	11-134-01										
Iron	**22500**	**22400**	22200	22200	ND	**102**	**101**	75-125	0	20	
Manganese	**1150**	**1140**	556	556	565	**106**	**104**	75-125	1	20	
Laboratory ID:	11-134-02										
Mercury	**12.0**	**11.8**	12.5	12.5	ND	**96**	**95**	75-125	1	20	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
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Project: 1903-00129-RI

AMMONIA (as Nitrogen)
SM 4500-NH_3 D

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW4-111320**					
Laboratory ID:	11-137-01					
Ammonia	**ND**	0.050	SM 4500-NH3 D	11-17-20	11-17-20	
Client ID:	**MW2-111320**					
Laboratory ID:	11-137-02					
Ammonia	**0.13**	0.050	SM 4500-NH3 D	11-17-20	11-17-20	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-137
Project: 1903-00129-RI

AMMONIA (as Nitrogen)
SM 4500-NH_3 D
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1117W1					
Ammonia	**ND**	0.050	SM 4500-NH3 D	11-17-20	11-17-20	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	11-176-01								
	ORIG	DUP							
Ammonia	**0.502**	**0.523**	NA	NA	NA	NA	4	11	
MATRIX SPIKE									
Laboratory ID:	11-176-01								
	MS		MS		MS				
Ammonia	**5.64**		5.00	0.502	103	76-118	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB1117W1								
	SB		SB		SB				
Ammonia	**5.01**		5.00	NA	100	88-110	NA	NA	

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-137
Project: 1903-00129-RI

pH
SM 4500-H B

Matrix: Water
Units: pH (@ 25ºC)

Analyte	Result	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW4-111320**				
Laboratory ID:	11-137-01				
pH	**6.7**	SM 4500-H B	11-13-20	11-13-20	
Client ID:	**MW2-111320**				
Laboratory ID:	11-137-02				
pH	**6.6**	SM 4500-H B	11-13-20	11-13-20	

OnSite Environmental Inc.

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 methods 8260 & 8270, 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

Nov 20 2020
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
MW4-111320	Water	20-A018445	Redox
MW2-111320	Water	20-A018446	Redox

Your samples were received on Friday, November 13, 2020. At the time of receipt, the samples were logged in and properly maintained prior to the subsequent analysis.

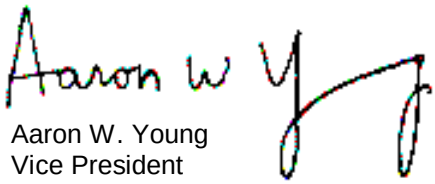
The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

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
Vice President

Project #: 1903-00129-RI
PO Number: 11-137

BACT = Bacteriological
CONV = Conventionals
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 #: 1903-00129-RI
PO Number: 11-137
All results reported on an as received basis.

Date Received: 11/13/20
Date Reported: 11/20/20

AMTEST Identification Number **20-A018445**
Client Identification **MW4-111320**
Sampling Date **11/13/20, 09:30**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Redox Potential	< 200	unit		200	ASTM D1498-76	DM	11/13/20

AMTEST Identification Number **20-A018446**
Client Identification **MW2-111320**
Sampling Date **11/13/20, 11:30**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Redox Potential	205.	unit		200	ASTM D1498-76	DM	11/13/20

Aaron W. Young
Vice President

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

Professional Analytical Services

QC Summary for sample numbers: 20-A018445 to 20-A018446

DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	DUP VALUE	RPD
20-A018446	Redox Potential	unit	205.	218.	6.1
20-A018406	Redox Potential	unit	237.	256.	7.7

STANDARD REFERENCE MATERIALS

ANALYTE	UNITS	TRUE VALUE	MEASURED VALUE	RECOVERY
Redox Potential	unit	438.	438.	100. %
Redox Potential	unit	438.	442.	101. %

OnSite Environmental Inc.

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

Laboratory Reference #: 11-137

Laboratory: AmTest Laboratories

Attention: Aaron Young

13600 NE 126th Pl Kirkland, WA 98034

Phone Number: (425) 885-1664

Turnaround Request

1 Day 2 Day 3 Day

(Standard)

Other: _____

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 1903-00129-RI

Project Name: _____

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analyses
	MW4-111320 18445	11/13/20	0930	W	1	Eh (ORP)
	MW2-111320 46	11/13/20	1130	W	1	Eh (ORP)

	Company	Date	Time	Comments/Special Instructions
Relinquished by:	OSE	11/13/20	3:35	EDDs
Received by:	AMTEST T=8.4	11/13/20	3:35	
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Chain of Custody

Page 1 of 1

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

Laboratory Number: 11-137

Company: ENPRO Environmental
Project Number: 1903-00129-R1
Project Name: Green Cove Park
Project Manager: Kim Kim
Sampled by: Hoang Rosario

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	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~~ Benzoic Acid	~~HEM (oil and grease) 1664A~~ Ammonia	pH	Eh (ORP)	Mn	Fe	% Moisture
1	MW4-111320	11-13-20	0930	water	17		X		X					X					X		X	X	X	X	X	X	
2	MW2-111320	↓	1130	↓	17		X		X					X					X		X	X	X	X	X	X	

Last Entry
KB 11-13-20

	Signature	Company	Date	Time
Relinquished Ken Beal		ENPRO Environmental	11-13-20	2:10 pm
Received		OSE	11/13/20	1410
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
For RCRA Metals, please perform total & dissolved analyses, filter as necessary
Please hold remainder of samples pending further instruction
KB 11-13-20

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

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

December 2, 2020

Kim Kim
EnPro Environmental
151 Hekili Street, Suite 210
Kailua, HI 96734

Re: Analytical Data for Project 1903-00129-RI
Laboratory Reference No. 2011-156

Dear Kim:

Enclosed are the analytical results and associated quality control data for samples submitted on November 14, 2020.

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,

David Baumeister
Project Manager

Enclosures

Date of Report: December 2, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-156
Project: 1903-00129-RI

Case Narrative

Samples were collected on November 14, 2020 and received by the laboratory on November 14, 2020. 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: December 2, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-156
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW3-111420**					
Laboratory ID:	11-156-01					
Benzene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
Toluene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
o-Xylene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
Gasoline	**ND**	100	NWTPH-Gx	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*65-120*				
Client ID:	**MW3A-111420**					
Laboratory ID:	11-156-02					
Benzene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
Toluene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
o-Xylene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
Gasoline	**ND**	100	NWTPH-Gx	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*65-120*				

Date of Report: December 2, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-156
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1117W1					
Benzene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
Toluene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
o-Xylene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
Gasoline	**ND**	100	NWTPH-Gx	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*65-120*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-156-01										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*98*	*93*	*65-120*			
SPIKE BLANKS											
Laboratory ID:	SB1117W1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**49.8**	**49.0**	50.0	50.0		**100**	**98**	83-117	2	11	
Toluene	**52.0**	**51.2**	50.0	50.0		**104**	**102**	86-115	2	12	
Ethyl Benzene	**51.5**	**50.6**	50.0	50.0		**103**	**101**	86-117	2	12	
m,p-Xylene	**52.1**	**51.4**	50.0	50.0		**104**	**103**	85-118	1	12	
o-Xylene	**51.1**	**50.3**	50.0	50.0		**102**	**101**	86-115	2	11	
Surrogate:											
Fluorobenzene						*99*	*103*	*65-120*			

Date of Report: December 2, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-156
Project: 1903-00129-RI

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW3-111420**					
Laboratory ID:	11-156-01					
Diesel Range Organics	**ND**	0.21	NWTPH-Dx	11-20-20	11-20-20	
Lube Oil Range Organics	**0.26**	0.21	NWTPH-Dx	11-20-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*82*	*50-150*				
Client ID:	**MW3A-111420**					
Laboratory ID:	11-156-02					
Diesel Range Organics	**ND**	0.22	NWTPH-Dx	11-20-20	11-20-20	
Lube Oil Range Organics	**0.26**	0.22	NWTPH-Dx	11-20-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*85*	*50-150*				

Date of Report: December 2, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-156
Project: 1903-00129-RI

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1120W1					
Diesel Range Organics	**ND**	0.20	NWTPH-Dx	11-20-20	11-20-20	
Lube Oil Range Organics	**ND**	0.20	NWTPH-Dx	11-20-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*102*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	SB1120W1										
	ORIG	DUP									
Diesel Fuel #2	**0.419**	**0.307**	NA	NA		NA		NA	31	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*108*	*95*	*50-150*			

Date of Report: December 2, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-156
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW3-111420**					
Laboratory ID:	11-156-01					
Naphthalene	**0.12**	0.097	EPA 8270E/SIM	11-17-20	11-17-20	
2-Methylnaphthalene	**ND**	0.097	EPA 8270E/SIM	11-17-20	11-17-20	
1-Methylnaphthalene	**ND**	0.097	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthylene	**ND**	0.097	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthene	**ND**	0.097	EPA 8270E/SIM	11-17-20	11-17-20	
Fluorene	**ND**	0.097	EPA 8270E/SIM	11-17-20	11-17-20	
Phenanthrene	**ND**	0.097	EPA 8270E/SIM	11-17-20	11-17-20	
Anthracene	**ND**	0.097	EPA 8270E/SIM	11-17-20	11-17-20	
Fluoranthene	**ND**	0.097	EPA 8270E/SIM	11-17-20	11-17-20	
Pyrene	**ND**	0.097	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]anthracene	**ND**	0.0097	EPA 8270E/SIM	11-17-20	11-17-20	
Chrysene	**ND**	0.0097	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[b]fluoranthene	**ND**	0.0097	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo(j,k)fluoranthene	**ND**	0.0097	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]pyrene	**ND**	0.0097	EPA 8270E/SIM	11-17-20	11-17-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.0097	EPA 8270E/SIM	11-17-20	11-17-20	
Dibenz[a,h]anthracene	**ND**	0.0097	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[g,h,i]perylene	**ND**	0.0097	EPA 8270E/SIM	11-17-20	11-17-20	
Benzoic Acid	**ND**	26	EPA 8270E	11-17-20	11-18-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*27*	*10 - 80*				
Phenol-d6	*20*	*10 - 87*				
Nitrobenzene-d5	*44*	*33 - 105*				
2-Fluorobiphenyl	*47*	*41 - 105*				
2,4,6-Tribromophenol	*61*	*25 - 124*				
Terphenyl-d14	*55*	*47 - 116*				

Date of Report: December 2, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-156
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW3A-111420**					
Laboratory ID:	11-156-02					
Naphthalene	**0.17**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
2-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
1-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthylene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Fluorene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Phenanthrene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Anthracene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Fluoranthene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Pyrene	**0.12**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]anthracene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Chrysene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]pyrene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzoic Acid	**ND**	27	EPA 8270E	11-17-20	11-18-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*35*	*10 - 80*				
Phenol-d6	*25*	*10 - 87*				
Nitrobenzene-d5	*54*	*33 - 105*				
2-Fluorobiphenyl	*59*	*41 - 105*				
2,4,6-Tribromophenol	*66*	*25 - 124*				
Terphenyl-d14	*64*	*47 - 116*				

Date of Report: December 2, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-156
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1117W1					
Naphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
2-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
1-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthylene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Fluorene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Phenanthrene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Anthracene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Fluoranthene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Pyrene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]anthracene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Chrysene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]pyrene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzoic Acid	**ND**	27	EPA 8270E	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*33*	*10 - 80*				
Phenol-d6	*22*	*10 - 87*				
Nitrobenzene-d5	*62*	*33 - 105*				
2-Fluorobiphenyl	*60*	*41 - 105*				
2,4,6-Tribromophenol	*69*	*25 - 124*				
Terphenyl-d14	*69*	*47 - 116*				

Date of Report: December 2, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-156
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1117W1									
	SB	SBD	SB	SBD	SB	SBD				
Phenol	**10.0**	**9.18**	40.0	40.0	25	23	21 - 53	9	25	
2-Chlorophenol	**26.1**	**24.0**	40.0	40.0	65	60	38 - 92	8	29	
1,4-Dichlorobenzene	**11.7**	**10.4**	20.0	20.0	59	52	30 - 88	12	29	
n-Nitroso-di-n-propylamine	**13.2**	**12.7**	20.0	20.0	66	64	40 - 103	4	22	
1,2,4-Trichlorobenzene	**12.8**	**11.5**	20.0	20.0	64	58	37 - 95	11	25	
4-Chloro-3-methylphenol	**30.7**	**29.0**	40.0	40.0	77	73	57 - 101	6	17	
Acenaphthene	**14.1**	**12.7**	20.0	20.0	71	64	51 - 97	10	18	
4-Nitrophenol	**14.5**	**13.1**	40.0	40.0	36	33	23 - 64	10	34	
2,4-Dinitrotoluene	**15.0**	**13.9**	20.0	20.0	75	70	52 - 103	8	17	
Pentachlorophenol	**34.7**	**31.8**	40.0	40.0	87	80	40 - 124	9	35	
Pyrene	**16.2**	**15.2**	20.0	20.0	81	76	52 - 107	6	19	
Surrogate:										
2-Fluorophenol					*38*	*33*	*10 - 80*			
Phenol-d6					*25*	*23*	*10 - 87*			
Nitrobenzene-d5					*63*	*57*	*33 - 105*			
2-Fluorobiphenyl					*65*	*62*	*41 - 105*			
2,4,6-Tribromophenol					*77*	*73*	*25 - 124*			
Terphenyl-d14					*73*	*69*	*47 - 116*			

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Project: 1903-00129-RI

TOTAL METALS
EPA 200.8/6010D/7470A

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW3-111420**					
Laboratory ID:	11-156-01					
Arsenic	**ND**	3.3	EPA 200.8	11-18-20	11-19-20	
Barium	**ND**	28	EPA 200.8	11-18-20	11-19-20	
Cadmium	**ND**	4.4	EPA 200.8	11-18-20	11-19-20	
Chromium	**ND**	11	EPA 200.8	11-18-20	11-19-20	
Iron	**13000**	56	EPA 6010D	11-18-20	11-20-20	
Lead	**1.2**	1.1	EPA 200.8	11-18-20	11-19-20	
Manganese	**1000**	11	EPA 6010D	11-18-20	11-20-20	
Mercury	**ND**	0.50	EPA 7470A	11-20-20	11-20-20	
Selenium	**ND**	5.6	EPA 200.8	11-18-20	11-19-20	
Silver	**ND**	11	EPA 200.8	11-18-20	11-19-20	
Client ID:	**MW3A-111420**					
Laboratory ID:	11-156-02					
Arsenic	**ND**	3.3	EPA 200.8	11-18-20	11-19-20	
Barium	**ND**	28	EPA 200.8	11-18-20	11-19-20	
Cadmium	**ND**	4.4	EPA 200.8	11-18-20	11-19-20	
Chromium	**ND**	11	EPA 200.8	11-18-20	11-19-20	
Iron	**13000**	56	EPA 6010D	11-18-20	11-20-20	
Lead	**1.3**	1.1	EPA 200.8	11-18-20	11-19-20	
Manganese	**1000**	11	EPA 6010D	11-18-20	11-20-20	
Mercury	**ND**	0.50	EPA 7470A	11-20-20	11-20-20	
Selenium	**ND**	5.6	EPA 200.8	11-18-20	11-19-20	
Silver	**ND**	11	EPA 200.8	11-18-20	11-19-20	

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Project: 1903-00129-RI

TOTAL METALS
EPA 200.8/6010D/7470A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1118WM1					
Arsenic	**ND**	3.3	EPA 200.8	11-18-20	11-18-20	
Barium	**ND**	28	EPA 200.8	11-18-20	11-18-20	
Cadmium	**ND**	4.4	EPA 200.8	11-18-20	11-18-20	
Chromium	**ND**	11	EPA 200.8	11-18-20	11-18-20	
Lead	**ND**	1.1	EPA 200.8	11-18-20	11-19-20	
Selenium	**ND**	5.6	EPA 200.8	11-18-20	11-18-20	
Silver	**ND**	11	EPA 200.8	11-18-20	11-18-20	
Laboratory ID:	MB1118WM1					
Iron	**ND**	56	EPA 6010D	11-18-20	11-20-20	
Manganese	**ND**	11	EPA 6010D	11-18-20	11-20-20	
Laboratory ID:	MB1120W1					
Mercury	**ND**	0.50	EPA 7470A	11-20-20	11-20-20	

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Project: 1903-00129-RI

TOTAL METALS
EPA 200.8/6010D/7470A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-072-04										
	ORIG	DUP									
Arsenic	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Barium	**35.3**	**36.0**	NA	NA		NA		NA	2	20	
Cadmium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Chromium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Lead	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Selenium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Silver	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Laboratory ID:	11-072-04										
Iron	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Manganese	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Laboratory ID:	11-133-01										
Mercury	**ND**	**ND**	NA	NA		NA		NA	NA	20	
MATRIX SPIKES											
Laboratory ID:	11-072-04										
	MS	MSD	MS	MSD		MS	MSD				
Arsenic	**214**	**211**	222	222	ND	**96**	**95**	75-125	2	20	
Barium	**224**	**224**	222	222	35.3	**85**	**85**	75-125	0	20	
Cadmium	**214**	**212**	222	222	ND	**97**	**96**	75-125	1	20	
Chromium	**183**	**181**	222	222	ND	**82**	**81**	75-125	1	20	
Lead	**198**	**193**	222	222	ND	**89**	**87**	75-125	3	20	
Selenium	**219**	**223**	222	222	ND	**99**	**101**	75-125	2	20	
Silver	**213**	**208**	222	222	ND	**96**	**94**	75-125	2	20	
Laboratory ID:	11-072-04										
Iron	**20700**	**20700**	22200	22200	ND	**93**	**93**	75-125	0	20	
Manganese	**207**	**206**	222	222	ND	**93**	**93**	75-125	1	20	
Laboratory ID:	11-133-01										
Mercury	**11.9**	**11.9**	12.5	12.5	ND	**95**	**95**	75-125	1	20	

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DISSOLVED METALS
EPA 200.8/6010D/7470A

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW3-111420**					
Laboratory ID:	11-156-01					
Arsenic	**ND**	3.0	EPA 200.8	11-16-20	11-18-20	
Barium	**ND**	25	EPA 200.8	11-16-20	11-18-20	
Cadmium	**ND**	4.0	EPA 200.8	11-16-20	11-18-20	
Chromium	**ND**	10	EPA 200.8	11-16-20	11-18-20	
Iron	**9400**	56	EPA 6010D	11-16-20	11-18-20	
Lead	**ND**	1.0	EPA 200.8	11-16-20	11-18-20	
Manganese	**1000**	11	EPA 6010D	11-16-20	11-18-20	
Mercury	**ND**	0.50	EPA 7470A	11-16-20	11-20-20	
Selenium	**ND**	5.0	EPA 200.8	11-16-20	11-18-20	
Silver	**ND**	10	EPA 200.8	11-16-20	11-18-20	
Client ID:	**MW3A-111420**					
Laboratory ID:	11-156-02					
Arsenic	**ND**	3.0	EPA 200.8	11-16-20	11-18-20	
Barium	**ND**	25	EPA 200.8	11-16-20	11-18-20	
Cadmium	**ND**	4.0	EPA 200.8	11-16-20	11-18-20	
Chromium	**ND**	10	EPA 200.8	11-16-20	11-18-20	
Iron	**9600**	56	EPA 6010D	11-16-20	11-18-20	
Lead	**ND**	1.0	EPA 200.8	11-16-20	11-18-20	
Manganese	**990**	11	EPA 6010D	11-16-20	11-18-20	
Mercury	**ND**	0.50	EPA 7470A	11-16-20	11-20-20	
Selenium	**ND**	5.0	EPA 200.8	11-16-20	11-18-20	
Silver	**ND**	10	EPA 200.8	11-16-20	11-18-20	

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DISSOLVED METALS
EPA 200.8/6010D/7470A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1116F1					
Arsenic	**ND**	3.0	EPA 200.8	11-16-20	11-18-20	
Barium	**ND**	25	EPA 200.8	11-16-20	11-18-20	
Cadmium	**ND**	4.0	EPA 200.8	11-16-20	11-18-20	
Chromium	**ND**	10	EPA 200.8	11-16-20	11-18-20	
Lead	**ND**	1.0	EPA 200.8	11-16-20	11-18-20	
Selenium	**ND**	5.0	EPA 200.8	11-16-20	11-18-20	
Silver	**ND**	10	EPA 200.8	11-16-20	11-18-20	
Laboratory ID:	MB1116F1					
Iron	**ND**	56	EPA 6010D	11-16-20	11-18-20	
Manganese	**ND**	11	EPA 6010D	11-16-20	11-18-20	
Laboratory ID:	MB1116F1					
Mercury	**ND**	0.50	EPA 7470A	11-16-20	11-20-20	

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DISSOLVED METALS
EPA 200.8/6010D/7470A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-119-37										
	ORIG	DUP									
Arsenic	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Barium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Cadmium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Chromium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Lead	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Selenium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Silver	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Laboratory ID:	11-134-01										
Iron	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Manganese	**565**	**577**	NA	NA		NA		NA	2	20	
Laboratory ID:	11-134-02										
Mercury	**ND**	**ND**	NA	NA		NA		NA	NA	20	
MATRIX SPIKES											
Laboratory ID:	11-119-37										
	MS	MSD	MS	MSD		MS	MSD				
Arsenic	**74.4**	**76.4**	80.0	80.0	ND	**93**	**96**	75-125	3	20	
Barium	**91.2**	**90.6**	80.0	80.0	20.2	**89**	**88**	75-125	1	20	
Cadmium	**76.4**	**76.4**	80.0	80.0	ND	**96**	**96**	75-125	0	20	
Chromium	**68.2**	**68.4**	80.0	80.0	ND	**85**	**86**	75-125	0	20	
Lead	**75.2**	**67.4**	80.0	80.0	ND	**94**	**84**	75-125	11	20	
Selenium	**77.2**	**78.2**	80.0	80.0	ND	**97**	**98**	75-125	1	20	
Silver	**76.0**	**77.4**	80.0	80.0	ND	**95**	**97**	75-125	2	20	
Laboratory ID:	11-134-01										
Iron	**22500**	**22400**	22200	22200	ND	**102**	**101**	75-125	0	20	
Manganese	**1150**	**1140**	556	556	565	**106**	**104**	75-125	1	20	
Laboratory ID:	11-134-02										
Mercury	**12.0**	**11.8**	12.5	12.5	ND	**96**	**95**	75-125	1	20	

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AMMONIA (as Nitrogen)
SM 4500-NH_3 D

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW3-111420**					
Laboratory ID:	11-156-01					
Ammonia	**0.96**	0.050	SM 4500-NH3 D	11-17-20	11-17-20	
Client ID:	**MW3A-111420**					
Laboratory ID:	11-156-02					
Ammonia	**0.82**	0.050	SM 4500-NH3 D	11-17-20	11-17-20	

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AMMONIA (as Nitrogen)
SM 4500-NH_3 D
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1117W1					
Ammonia	**ND**	0.050	SM 4500-NH3 D	11-17-20	11-17-20	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	11-176-01								
	ORIG	DUP							
Ammonia	**0.502**	**0.523**	NA	NA	NA	NA	4	11	
MATRIX SPIKE									
Laboratory ID:	11-176-01								
	MS		MS		MS				
Ammonia	**5.64**		5.00	0.502	103	76-118	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB1117W1								
	SB		SB		SB				
Ammonia	**5.01**		5.00	NA	100	88-110	NA	NA	

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pH
SM 4500-H B

Matrix: Water
Units: pH (@ 25ºC)

Analyte	Result	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW3-111420**				
Laboratory ID:	11-156-01				
pH	**5.7**	SM 4500-H B	11-16-20	11-16-20	
Client ID:	**MW3A-111420**				
Laboratory ID:	11-156-02				
pH	**5.7**	SM 4500-H B	11-16-20	11-16-20	

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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW3-111420**					
Laboratory ID:	11-156-01					
Dichlorodifluoromethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Chloromethane	ND	1.0	EPA 8260D	11-25-20	11-25-20	
Vinyl Chloride	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Bromomethane	ND	2.0	EPA 8260D	11-25-20	11-25-20	
Chloroethane	ND	1.0	EPA 8260D	11-25-20	11-25-20	
Trichlorofluoromethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Iodomethane	ND	5.0	EPA 8260D	11-25-20	11-25-20	
Methylene Chloride	ND	1.0	EPA 8260D	11-25-20	11-25-20	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Methyl t-Butyl Ether	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
2,2-Dichloropropane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Bromochloromethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Chloroform	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,1,1-Trichloroethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Carbon Tetrachloride	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloropropene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloroethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Trichloroethene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloropropane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Dibromomethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Bromodichloromethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
2-Chloroethyl Vinyl Ether	ND	30	EPA 8260D	11-25-20	11-25-20	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260D	11-25-20	11-25-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW3-111420**					
Laboratory ID:	11-156-01					
1,1,2-Trichloroethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Tetrachloroethene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,3-Dichloropropane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Dibromochloromethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromoethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Chlorobenzene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Bromoform	ND	1.0	EPA 8260D	11-25-20	11-25-20	
Bromobenzene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichloropropane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
2-Chlorotoluene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
4-Chlorotoluene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,3-Dichlorobenzene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,4-Dichlorobenzene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,2-Dichlorobenzene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260D	11-25-20	11-25-20	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Hexachlorobutadiene	ND	1.0	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichlorobenzene	ND	1.0	EPA 8260D	11-25-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*98*	*75-127*				
Toluene-d8	*106*	*80-127*				
4-Bromofluorobenzene	*82*	*78-125*				

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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW3A-111420**					
Laboratory ID:	11-156-02					
Dichlorodifluoromethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Chloromethane	ND	1.0	EPA 8260D	11-25-20	11-25-20	
Vinyl Chloride	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Bromomethane	ND	2.0	EPA 8260D	11-25-20	11-25-20	
Chloroethane	ND	1.0	EPA 8260D	11-25-20	11-25-20	
Trichlorofluoromethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Iodomethane	ND	5.0	EPA 8260D	11-25-20	11-25-20	
Methylene Chloride	ND	1.0	EPA 8260D	11-25-20	11-25-20	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Methyl t-Butyl Ether	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
2,2-Dichloropropane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Bromochloromethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Chloroform	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,1,1-Trichloroethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Carbon Tetrachloride	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloropropene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloroethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Trichloroethene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloropropane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Dibromomethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Bromodichloromethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
2-Chloroethyl Vinyl Ether	ND	30	EPA 8260D	11-25-20	11-25-20	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260D	11-25-20	11-25-20	

Date of Report: December 2, 2020
Samples Submitted: November 14, 2020
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VOLATILE ORGANICS EPA 8260D
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW3A-111420**					
Laboratory ID:	11-156-02					
1,1,2-Trichloroethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Tetrachloroethene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,3-Dichloropropane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Dibromochloromethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromoethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Chlorobenzene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Bromoform	ND	1.0	EPA 8260D	11-25-20	11-25-20	
Bromobenzene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichloropropane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
2-Chlorotoluene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
4-Chlorotoluene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,3-Dichlorobenzene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,4-Dichlorobenzene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,2-Dichlorobenzene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260D	11-25-20	11-25-20	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Hexachlorobutadiene	ND	1.0	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichlorobenzene	ND	1.0	EPA 8260D	11-25-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*103*	*75-127*				
Toluene-d8	*109*	*80-127*				
4-Bromofluorobenzene	*84*	*78-125*				

Date of Report: December 2, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-156
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VOLATILE ORGANICS EPA 8260D
QUALITY CONTROL
page 1 of 2

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1125W1					
Dichlorodifluoromethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Chloromethane	ND	1.0	EPA 8260D	11-25-20	11-25-20	
Vinyl Chloride	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Bromomethane	ND	2.0	EPA 8260D	11-25-20	11-25-20	
Chloroethane	ND	1.0	EPA 8260D	11-25-20	11-25-20	
Trichlorofluoromethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Iodomethane	ND	5.0	EPA 8260D	11-25-20	11-25-20	
Methylene Chloride	ND	1.0	EPA 8260D	11-25-20	11-25-20	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Methyl t-Butyl Ether	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloroethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
2,2-Dichloropropane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Bromochloromethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Chloroform	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,1,1-Trichloroethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Carbon Tetrachloride	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,1-Dichloropropene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloroethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Trichloroethene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,2-Dichloropropane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Dibromomethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Bromodichloromethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
2-Chloroethyl Vinyl Ether	ND	30	EPA 8260D	11-25-20	11-25-20	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260D	11-25-20	11-25-20	

Date of Report: December 2, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-156
Project: 1903-00129-RI

VOLATILE ORGANICS EPA 8260D
QUALITY CONTROL
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1125W1					
1,1,2-Trichloroethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Tetrachloroethene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,3-Dichloropropane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Dibromochloromethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromoethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Chlorobenzene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Bromoform	ND	1.0	EPA 8260D	11-25-20	11-25-20	
Bromobenzene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichloropropane	ND	0.20	EPA 8260D	11-25-20	11-25-20	
2-Chlorotoluene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
4-Chlorotoluene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,3-Dichlorobenzene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,4-Dichlorobenzene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,2-Dichlorobenzene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260D	11-25-20	11-25-20	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260D	11-25-20	11-25-20	
Hexachlorobutadiene	ND	1.0	EPA 8260D	11-25-20	11-25-20	
1,2,3-Trichlorobenzene	ND	1.0	EPA 8260D	11-25-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*118*	*75-127*				
Toluene-d8	*108*	*80-127*				
4-Bromofluorobenzene	*91*	*78-125*				

Date of Report: December 2, 2020
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VOLATILE ORGANICS EPA 8260D
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1125W1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**11.6**	**11.8**	10.0	10.0	116	118	65-126	2	19	
Benzene	**11.1**	**11.5**	10.0	10.0	111	115	71-119	4	16	
Trichloroethene	**11.2**	**11.5**	10.0	10.0	112	115	82-123	3	18	
Toluene	**10.9**	**11.2**	10.0	10.0	109	112	77-119	3	18	
Chlorobenzene	**10.7**	**11.1**	10.0	10.0	107	111	80-120	4	17	
Surrogate:										
Dibromofluoromethane					*119*	*120*	*75-127*			
Toluene-d8					*107*	*107*	*80-127*			
4-Bromofluorobenzene					*91*	*90*	*78-125*			

Date of Report: December 2, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-156
Project: 1903-00129-RI

1,2-DIBROMOETHANE (EDB)
EPA 8011

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW3-111420**					
Laboratory ID:	11-156-01					
EDB	**ND**	0.0096	EPA 8011	11-25-20	12-1-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
TCMX	*91*	*25-142*				
Client ID:	**MW3A-111420**					
Laboratory ID:	11-156-02					
EDB	**ND**	0.0095	EPA 8011	11-25-20	12-1-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
TCMX	*99*	*25-142*				

Date of Report: December 2, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-156
Project: 1903-00129-RI

1,2-DIBROMOETHANE (EDB)
EPA 8011
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1125W1					
EDB	**ND**	0.010	EPA 8011	11-25-20	12-1-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
TCMX	*117*	*25-142*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB1125W1										
	SB	SBD	SB	SBD		SB	SBD				
EDB	**0.0965**	**0.0907**	0.100	0.100	N/A	**97**	**91**	53-118	6	15	
Surrogate:											
TCMX						*113*	*119*	*25-142*			

Date of Report: December 2, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-156
Project: 1903-00129-RI

PCBs EPA 8082A

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW3-111420**					
Laboratory ID:	11-156-01					
Aroclor 1016	**ND**	0.049	EPA 8082A	11-25-20	11-30-20	
Aroclor 1221	**ND**	0.049	EPA 8082A	11-25-20	11-30-20	
Aroclor 1232	**ND**	0.049	EPA 8082A	11-25-20	11-30-20	
Aroclor 1242	**ND**	0.049	EPA 8082A	11-25-20	11-30-20	
Aroclor 1248	**ND**	0.049	EPA 8082A	11-25-20	11-30-20	
Aroclor 1254	**ND**	0.049	EPA 8082A	11-25-20	11-30-20	
Aroclor 1260	**ND**	0.049	EPA 8082A	11-25-20	11-30-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*99*	*49-143*				
Client ID:	**MW3A-111420**					
Laboratory ID:	11-156-02					
Aroclor 1016	**ND**	0.049	EPA 8082A	11-25-20	11-30-20	
Aroclor 1221	**ND**	0.049	EPA 8082A	11-25-20	11-30-20	
Aroclor 1232	**ND**	0.049	EPA 8082A	11-25-20	11-30-20	
Aroclor 1242	**ND**	0.049	EPA 8082A	11-25-20	11-30-20	
Aroclor 1248	**ND**	0.049	EPA 8082A	11-25-20	11-30-20	
Aroclor 1254	**ND**	0.049	EPA 8082A	11-25-20	11-30-20	
Aroclor 1260	**ND**	0.049	EPA 8082A	11-25-20	11-30-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*98*	*49-143*				

Date of Report: December 2, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-156
Project: 1903-00129-RI

PCBs EPA 8082A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1125W1					
Aroclor 1016	**ND**	0.050	EPA 8082A	11-25-20	11-25-20	
Aroclor 1221	**ND**	0.050	EPA 8082A	11-25-20	11-25-20	
Aroclor 1232	**ND**	0.050	EPA 8082A	11-25-20	11-25-20	
Aroclor 1242	**ND**	0.050	EPA 8082A	11-25-20	11-25-20	
Aroclor 1248	**ND**	0.050	EPA 8082A	11-25-20	11-25-20	
Aroclor 1254	**ND**	0.050	EPA 8082A	11-25-20	11-25-20	
Aroclor 1260	**ND**	0.050	EPA 8082A	11-25-20	11-25-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*119*	*49-143*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB1125W2										
	SB	SBD	SB	SBD		SB	SBD				
Aroclor 1260	**0.499**	**0.484**	0.500	0.500	N/A	**100**	**97**	64-144	3	12	
Surrogate:											
DCB						*104*	*100*	*49-143*			

OnSite Environmental Inc.

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 methods 8260 & 8270, 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

Nov 30 2020
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
MW-3-111420	Water	20-A018478	Redox
MW3A-111420	Water	20-A018479	Redox

Your samples were received on Monday, November 16, 2020. At the time of receipt, the samples were logged in and properly maintained prior to the subsequent analysis.

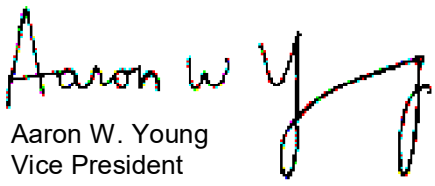
The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

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
Vice President

Project #: 1903-00129-RI
PO Number: 11-156

BACT = Bacteriological
CONV = Conventionals
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 #: 1903-00129-RI
PO Number: 11-156
All results reported on an as received basis.

Date Received: 11/16/20
Date Reported: 11/30/20

AMTEST Identification Number **20-A018478**
Client Identification **MW-3-111420**
Sampling Date **11/14/20, 09:15**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Redox Potential	407.	unit		200	ASTM D1498-76	DM	11/19/20

AMTEST Identification Number **20-A018479**
Client Identification **MW3A-111420**
Sampling Date **11/14/20, 09:30**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Redox Potential	399.	unit		200	ASTM D1498-76	DM	11/19/20

Aaron W. Young
Vice President

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

QC Summary for sample numbers: 20-A018478 to 20-A018479

DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	DUP VALUE	RPD
20-A018478	Redox Potential	unit	407.	420.	3.1

STANDARD REFERENCE MATERIALS

ANALYTE	UNITS	TRUE VALUE	MEASURED VALUE	RECOVERY
Redox Potential	unit	440.	437.	99.3 %

OnSite Environmental Inc.

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

Laboratory Reference #: 11-156

Laboratory: AmTest Laboratories

Attention: Aaron Young

13600 NE 126th Pl Kirkland, WA 98034

Phone Number: (425) 885-1664

Turnaround Request

1 Day 2 Day 3 Day

(Standard)

Other: _____

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 1903-00129-RI

Project Name: _____

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont	Requested Analyses
	MW-3-111420 18478	11/14/20	9:15	W	1	Eh (ORP)
	MW3A-111420 79	11/14/20	9:30	W	1	Eh (ORP)

	Company	Date	Time	Comments/Special Instructions
Relinquished by:	OSE	11/16/20	1215	EDDs
Received by:	AMTEST T=6.0	11/16/20	12:15	
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

P.4

Chain of Custody

Page 1 of 1

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

Company: ENPRO ENVIRONMENTAL
Project Number: 1903-00129-RI
Project Name: GREEN COVE PARK
Project Manager: KIM KIM
Sampled by: HOANO ROSARIO

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
☐ _____ (other)

Laboratory Number: 11-156

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C + MTBE	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 BENZOIC ACID	HEM (oil and grease) 1664A AMMONIA	pH	Eh (ORP)	Mn	Fe	% Moisture
1	MW3-111420	11/14/2020	915	WATER	17		X		X		⊗	⊗		X	⊗				X		X	X	X	X	X	X	
2	MW3A-111420	11/14/2020	930	"	1		"		"		⊗	⊗		"	⊗				"		"	"	"	"	"	"	
	LAST ENTRY																										

11/14/20 RD

	Signature	Company	Date	Time
Relinquished		ENPRO ENVIRONMENTAL	11/14/2020	1430
Received		OSE	11/14/2020	1500 DB
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
FOR RCRA METALS, PLEASE PERFORM TOTAL AND DISSOLVED ANALYSES, FILTER AS NECESSARY
HOLD REMAINDER OF SAMPLES PENDING FURTHER INSTRUCTION
⊗ Added 11/25/2020 - DB (CSTA)

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

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

November 30, 2020

Kim Kim
EnPro Environmental
151 Hekili Street, Suite 210
Kailua, HI 96734

Re: Analytical Data for Project 1903-00129-RI
Laboratory Reference No. 2011-157

Dear Kim:

Enclosed are the analytical results and associated quality control data for samples submitted on November 14, 2020.

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,

David Baumeister
Project Manager

Enclosures

Date of Report: November 30, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-157
Project: 1903-00129-RI

Case Narrative

Samples were collected on November 14, 2020 and received by the laboratory on November 14, 2020. 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.

Semivolatiles EPA 8270E/SIM Analysis

Sample MW11-111420 had two surrogate recoveries outside of control limits. The results from the re-extracted sample confirmed the original results.

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: November 30, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-157
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW11-111420**					
Laboratory ID:	11-157-01					
Benzene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
Toluene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
o-Xylene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
Gasoline	**ND**	100	NWTPH-Gx	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*65-120*				
Client ID:	**MW8-111420**					
Laboratory ID:	11-157-02					
Benzene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
Toluene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
o-Xylene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
Gasoline	**ND**	100	NWTPH-Gx	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*65-120*				

Date of Report: November 30, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-157
Project: 1903-00129-RI

GASOLINE RANGE ORGANICS/BTEX
NWTPH-Gx/EPA 8021B
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1117W1					
Benzene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
Toluene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
Ethyl Benzene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
m,p-Xylene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
o-Xylene	**ND**	1.0	EPA 8021B	11-17-20	11-17-20	
Gasoline	**ND**	100	NWTPH-Gx	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*65-120*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-156-01										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*98*	*93*	*65-120*			
SPIKE BLANKS											
Laboratory ID:	SB1117W1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**49.8**	**49.0**	50.0	50.0		**100**	**98**	83-117	2	11	
Toluene	**52.0**	**51.2**	50.0	50.0		**104**	**102**	86-115	2	12	
Ethyl Benzene	**51.5**	**50.6**	50.0	50.0		**103**	**101**	86-117	2	12	
m,p-Xylene	**52.1**	**51.4**	50.0	50.0		**104**	**103**	85-118	1	12	
o-Xylene	**51.1**	**50.3**	50.0	50.0		**102**	**101**	86-115	2	11	
Surrogate:											
Fluorobenzene						*99*	*103*	*65-120*			

Date of Report: November 30, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-157
Project: 1903-00129-RI

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW11-111420**					
Laboratory ID:	11-157-01					
Diesel Range Organics	**ND**	0.21	NWTPH-Dx	11-20-20	11-20-20	
Lube Oil Range Organics	**ND**	0.21	NWTPH-Dx	11-20-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*70*	*50-150*				
Client ID:	**MW8-111420**					
Laboratory ID:	11-157-02					
Diesel Range Organics	**ND**	0.21	NWTPH-Dx	11-20-20	11-20-20	
Lube Oil Range Organics	**ND**	0.21	NWTPH-Dx	11-20-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*72*	*50-150*				

Date of Report: November 30, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-157
Project: 1903-00129-RI

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1120W1					
Diesel Range Organics	**ND**	0.20	NWTPH-Dx	11-20-20	11-20-20	
Lube Oil Range Organics	**ND**	0.20	NWTPH-Dx	11-20-20	11-20-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*102*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	SB1120W1										
	ORIG	DUP									
Diesel Fuel #2	**0.419**	**0.307**	NA	NA		NA		NA	31	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*108*	*95*	*50-150*			

Date of Report: November 30, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-157
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW11-111420**					
Laboratory ID:	11-157-01					
Naphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
2-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
1-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthylene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Fluorene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Pentachlorophenol	**ND**	5.0	EPA 8270E	11-17-20	11-18-20	
Phenanthrene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Anthracene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Fluoranthene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Pyrene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]anthracene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Chrysene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]pyrene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzoic Acid	**ND**	27	EPA 8270E	11-17-20	11-18-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*18*	*10 - 80*				
Phenol-d6	*13*	*10 - 87*				
Nitrobenzene-d5	*30*	*33 - 105*				Q
2-Fluorobiphenyl	*33*	*41 - 105*				Q
2,4,6-Tribromophenol	*59*	*25 - 124*				
Terphenyl-d14	*60*	*47 - 116*				

Date of Report: November 30, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-157
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW8-111420**					
Laboratory ID:	11-157-02					
Naphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
2-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
1-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthylene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Fluorene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Phenanthrene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Anthracene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Fluoranthene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Pyrene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]anthracene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Chrysene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]pyrene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzoic Acid	**ND**	27	EPA 8270E	11-17-20	11-18-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*23*	*10 - 80*				
Phenol-d6	*17*	*10 - 87*				
Nitrobenzene-d5	*37*	*33 - 105*				
2-Fluorobiphenyl	*45*	*41 - 105*				
2,4,6-Tribromophenol	*63*	*25 - 124*				
Terphenyl-d14	*64*	*47 - 116*				

Date of Report: November 30, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-157
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1117W1					
Naphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
2-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
1-Methylnaphthalene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthylene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Acenaphthene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Fluorene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Pentachlorophenol	**ND**	5.0	EPA 8270E	11-17-20	11-17-20	
Phenanthrene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Anthracene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Fluoranthene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Pyrene	**ND**	0.10	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]anthracene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Chrysene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[a]pyrene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Indeno[1,2,3-cd]pyrene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270E/SIM	11-17-20	11-17-20	
Benzoic Acid	**ND**	27	EPA 8270E	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorophenol	*33*	*10 - 80*				
Phenol-d6	*22*	*10 - 87*				
Nitrobenzene-d5	*62*	*33 - 105*				
2-Fluorobiphenyl	*60*	*41 - 105*				
2,4,6-Tribromophenol	*69*	*25 - 124*				
Terphenyl-d14	*69*	*47 - 116*				

Date of Report: November 30, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-157
Project: 1903-00129-RI

SEMIVOLATILE ORGANICS EPA 8270E/SIM
QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1117W1									
	SB	SBD	SB	SBD	SB	SBD				
Phenol	**10.0**	**9.18**	40.0	40.0	25	23	21 - 53	9	25	
2-Chlorophenol	**26.1**	**24.0**	40.0	40.0	65	60	38 - 92	8	29	
1,4-Dichlorobenzene	**11.7**	**10.4**	20.0	20.0	59	52	30 - 88	12	29	
n-Nitroso-di-n-propylamine	**13.2**	**12.7**	20.0	20.0	66	64	40 - 103	4	22	
1,2,4-Trichlorobenzene	**12.8**	**11.5**	20.0	20.0	64	58	37 - 95	11	25	
4-Chloro-3-methylphenol	**30.7**	**29.0**	40.0	40.0	77	73	57 - 101	6	17	
Acenaphthene	**14.1**	**12.7**	20.0	20.0	71	64	51 - 97	10	18	
4-Nitrophenol	**14.5**	**13.1**	40.0	40.0	36	33	23 - 64	10	34	
2,4-Dinitrotoluene	**15.0**	**13.9**	20.0	20.0	75	70	52 - 103	8	17	
Pentachlorophenol	**34.7**	**31.8**	40.0	40.0	87	80	40 - 124	9	35	
Pyrene	**16.2**	**15.2**	20.0	20.0	81	76	52 - 107	6	19	
Surrogate:										
2-Fluorophenol					*38*	*33*	*10 - 80*			
Phenol-d6					*25*	*23*	*10 - 87*			
Nitrobenzene-d5					*63*	*57*	*33 - 105*			
2-Fluorobiphenyl					*65*	*62*	*41 - 105*			
2,4,6-Tribromophenol					*77*	*73*	*25 - 124*			
Terphenyl-d14					*73*	*69*	*47 - 116*			

Date of Report: November 30, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-157
Project: 1903-00129-RI

TOTAL METALS
EPA 200.8/6010D/7470A

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW11-111420**					
Laboratory ID:	11-157-01					
Arsenic	**ND**	3.3	EPA 200.8	11-18-20	11-19-20	
Barium	**32**	28	EPA 200.8	11-18-20	11-19-20	
Cadmium	**ND**	4.4	EPA 200.8	11-18-20	11-19-20	
Chromium	**ND**	11	EPA 200.8	11-18-20	11-19-20	
Copper	**ND**	11	EPA 200.8	11-18-20	11-19-20	
Iron	**3900**	56	EPA 6010D	11-18-20	11-20-20	
Lead	**ND**	1.1	EPA 200.8	11-18-20	11-19-20	
Manganese	**110**	11	EPA 6010D	11-18-20	11-20-20	
Mercury	**ND**	0.50	EPA 7470A	11-20-20	11-20-20	
Selenium	**ND**	5.6	EPA 200.8	11-18-20	11-19-20	
Silver	**ND**	11	EPA 200.8	11-18-20	11-19-20	
Client ID:	**MW8-111420**					
Laboratory ID:	11-157-02					
Arsenic	**ND**	3.3	EPA 200.8	11-18-20	11-19-20	
Barium	**37**	28	EPA 200.8	11-18-20	11-19-20	
Cadmium	**ND**	4.4	EPA 200.8	11-18-20	11-19-20	
Chromium	**ND**	11	EPA 200.8	11-18-20	11-19-20	
Iron	**8600**	56	EPA 6010D	11-18-20	11-20-20	
Lead	**ND**	1.1	EPA 200.8	11-18-20	11-19-20	
Manganese	**2500**	11	EPA 6010D	11-18-20	11-20-20	
Mercury	**ND**	0.50	EPA 7470A	11-20-20	11-20-20	
Selenium	**ND**	5.6	EPA 200.8	11-18-20	11-19-20	
Silver	**ND**	11	EPA 200.8	11-18-20	11-19-20	

Date of Report: November 30, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-157
Project: 1903-00129-RI

TOTAL METALS
EPA 200.8/6010D/7470A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1118WM1					
Arsenic	**ND**	3.3	EPA 200.8	11-18-20	11-18-20	
Barium	**ND**	28	EPA 200.8	11-18-20	11-18-20	
Cadmium	**ND**	4.4	EPA 200.8	11-18-20	11-18-20	
Chromium	**ND**	11	EPA 200.8	11-18-20	11-18-20	
Copper	**ND**	11	EPA 200.8	11-18-20	11-18-20	
Lead	**ND**	1.1	EPA 200.8	11-18-20	11-19-20	
Selenium	**ND**	5.6	EPA 200.8	11-18-20	11-18-20	
Silver	**ND**	11	EPA 200.8	11-18-20	11-18-20	
Laboratory ID:	MB1118WM1					
Iron	**ND**	56	EPA 6010D	11-18-20	11-20-20	
Manganese	**ND**	11	EPA 6010D	11-18-20	11-20-20	
Laboratory ID:	MB1120W1					
Mercury	**ND**	0.50	EPA 7470A	11-20-20	11-20-20	

Date of Report: November 30, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-157
Project: 1903-00129-RI

TOTAL METALS
EPA 200.8/6010D/7470A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-072-04										
	ORIG	DUP									
Arsenic	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Barium	**35.3**	**36.0**	NA	NA		NA		NA	2	20	
Cadmium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Chromium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Copper	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Lead	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Selenium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Silver	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Laboratory ID:	11-072-04										
Iron	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Manganese	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Laboratory ID:	11-133-01										
Mercury	**ND**	**ND**	NA	NA		NA		NA	NA	20	
MATRIX SPIKES											
Laboratory ID:	11-072-04										
	MS	MSD	MS	MSD		MS	MSD				
Arsenic	**214**	**211**	222	222	ND	**96**	**95**	75-125	2	20	
Barium	**224**	**224**	222	222	35.3	**85**	**85**	75-125	0	20	
Cadmium	**214**	**212**	222	222	ND	**97**	**96**	75-125	1	20	
Chromium	**183**	**181**	222	222	ND	**82**	**81**	75-125	1	20	
Copper	**196**	**194**	222	222	ND	**88**	**87**	75-125	1	20	
Lead	**198**	**193**	222	222	ND	**89**	**87**	75-125	3	20	
Selenium	**219**	**223**	222	222	ND	**99**	**101**	75-125	2	20	
Silver	**213**	**208**	222	222	ND	**96**	**94**	75-125	2	20	
Laboratory ID:	11-072-04										
Iron	**20700**	**20700**	22200	22200	ND	**93**	**93**	75-125	0	20	
Manganese	**207**	**206**	222	222	ND	**93**	**93**	75-125	1	20	
Laboratory ID:	11-133-01										
Mercury	**11.9**	**11.9**	12.5	12.5	ND	**95**	**95**	75-125	1	20	

Date of Report: November 30, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-157
Project: 1903-00129-RI

DISSOLVED METALS
EPA 200.8/6010D/7470A

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW11-111420**					
Laboratory ID:	11-157-01					
Arsenic	**ND**	3.0	EPA 200.8	11-16-20	11-18-20	
Barium	**ND**	25	EPA 200.8	11-16-20	11-18-20	
Cadmium	**ND**	4.0	EPA 200.8	11-16-20	11-18-20	
Chromium	**ND**	10	EPA 200.8	11-16-20	11-18-20	
Copper	**ND**	10	EPA 200.8	11-16-20	11-18-20	
Iron	**95**	56	EPA 6010D	11-16-20	11-18-20	
Lead	**ND**	1.0	EPA 200.8	11-16-20	11-18-20	
Manganese	**ND**	11	EPA 6010D	11-16-20	11-18-20	
Mercury	**ND**	0.50	EPA 7470A	11-16-20	11-20-20	
Selenium	**ND**	5.0	EPA 200.8	11-16-20	11-18-20	
Silver	**ND**	10	EPA 200.8	11-16-20	11-18-20	
Client ID:	**MW8-111420**					
Laboratory ID:	11-157-02					
Arsenic	**ND**	3.0	EPA 200.8	11-16-20	11-18-20	
Barium	**ND**	25	EPA 200.8	11-16-20	11-18-20	
Cadmium	**ND**	4.0	EPA 200.8	11-16-20	11-18-20	
Chromium	**ND**	10	EPA 200.8	11-16-20	11-18-20	
Iron	**560**	56	EPA 6010D	11-16-20	11-18-20	
Lead	**ND**	1.0	EPA 200.8	11-16-20	11-18-20	
Manganese	**2500**	11	EPA 6010D	11-16-20	11-18-20	
Mercury	**ND**	0.50	EPA 7470A	11-16-20	11-20-20	
Selenium	**ND**	5.0	EPA 200.8	11-16-20	11-18-20	
Silver	**ND**	10	EPA 200.8	11-16-20	11-18-20	

Date of Report: November 30, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-157
Project: 1903-00129-RI

DISSOLVED METALS
EPA 200.8/6010D/7470A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1116F1					
Arsenic	**ND**	3.0	EPA 200.8	11-16-20	11-18-20	
Barium	**ND**	25	EPA 200.8	11-16-20	11-18-20	
Cadmium	**ND**	4.0	EPA 200.8	11-16-20	11-18-20	
Chromium	**ND**	10	EPA 200.8	11-16-20	11-18-20	
Copper	**ND**	10	EPA 200.8	11-16-20	11-18-20	
Lead	**ND**	1.0	EPA 200.8	11-16-20	11-18-20	
Selenium	**ND**	5.0	EPA 200.8	11-16-20	11-18-20	
Silver	**ND**	10	EPA 200.8	11-16-20	11-18-20	
Laboratory ID:	MB1116F1					
Iron	**ND**	56	EPA 6010D	11-16-20	11-18-20	
Manganese	**ND**	11	EPA 6010D	11-16-20	11-18-20	
Laboratory ID:	MB1116F1					
Mercury	**ND**	0.50	EPA 7470A	11-16-20	11-20-20	

Date of Report: November 30, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-157
Project: 1903-00129-RI

DISSOLVED METALS
EPA 200.8/6010D/7470A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-119-37										
	ORIG	DUP									
Arsenic	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Barium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Cadmium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Chromium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Copper	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Lead	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Selenium	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Silver	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Laboratory ID:	11-134-01										
Iron	**ND**	**ND**	NA	NA		NA		NA	NA	20	
Manganese	**565**	**577**	NA	NA		NA		NA	2	20	
Laboratory ID:	11-134-02										
Mercury	**ND**	**ND**	NA	NA		NA		NA	NA	20	
MATRIX SPIKES											
Laboratory ID:	11-119-37										
	MS	MSD	MS	MSD		MS	MSD				
Arsenic	**74.4**	**76.4**	80.0	80.0	ND	**93**	**96**	75-125	3	20	
Barium	**91.2**	**90.6**	80.0	80.0	20.2	**89**	**88**	75-125	1	20	
Cadmium	**76.4**	**76.4**	80.0	80.0	ND	**96**	**96**	75-125	0	20	
Chromium	**68.2**	**68.4**	80.0	80.0	ND	**85**	**86**	75-125	0	20	
Copper	**71.8**	**74.0**	80.0	80.0	ND	**90**	**93**	75-125	3	20	
Lead	**75.2**	**67.4**	80.0	80.0	ND	**94**	**84**	75-125	11	20	
Selenium	**77.2**	**78.2**	80.0	80.0	ND	**97**	**98**	75-125	1	20	
Silver	**76.0**	**77.4**	80.0	80.0	ND	**95**	**97**	75-125	2	20	
Laboratory ID:	11-134-01										
Iron	**22500**	**22400**	22200	22200	ND	**102**	**101**	75-125	0	20	
Manganese	**1150**	**1140**	556	556	565	**106**	**104**	75-125	1	20	
Laboratory ID:	11-134-02										
Mercury	**12.0**	**11.8**	12.5	12.5	ND	**96**	**95**	75-125	1	20	

Date of Report: November 30, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-157
Project: 1903-00129-RI

AMMONIA (as Nitrogen)
SM 4500-NH_3 D

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW11-111420**					
Laboratory ID:	11-157-01					
Ammonia	**ND**	0.050	SM 4500-NH3 D	11-17-20	11-17-20	
Client ID:	**MW8-111420**					
Laboratory ID:	11-157-02					
Ammonia	**0.56**	0.050	SM 4500-NH3 D	11-17-20	11-17-20	

Date of Report: November 30, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-157
Project: 1903-00129-RI

AMMONIA (as Nitrogen)
SM 4500-NH_3 D
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1117W1					
Ammonia	**ND**	0.050	SM 4500-NH3 D	11-17-20	11-17-20	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	11-176-01								
	ORIG	DUP							
Ammonia	**0.502**	**0.523**	NA	NA	NA	NA	4	11	
MATRIX SPIKE									
Laboratory ID:	11-176-01								
	MS		MS		MS				
Ammonia	**5.64**		5.00	0.502	103	76-118	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB1117W1								
	SB		SB		SB				
Ammonia	**5.01**		5.00	NA	100	88-110	NA	NA	

Date of Report: November 30, 2020
Samples Submitted: November 14, 2020
Laboratory Reference: 2011-157
Project: 1903-00129-RI

pH
SM 4500-H B

Matrix: Water
Units: pH (@ 25ºC)

Analyte	Result	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW11-111420**				
Laboratory ID:	11-157-01				
pH	**6.1**	SM 4500-H B	11-16-20	11-16-20	
Client ID:	**MW8-111420**				
Laboratory ID:	11-157-02				
pH	**6.0**	SM 4500-H B	11-16-20	11-16-20	

OnSite Environmental Inc.

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 methods 8260 & 8270, 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

Nov 30 2020
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
MW11-111420	Water	20-A018480	Redox
MW8-111420	Water	20-A018481	Redox

Your samples were received on Monday, November 16, 2020. At the time of receipt, the samples were 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
Vice President

Project #: 1903-00129-RI
PO Number: 11-157

BACT = Bacteriological
CONV = Conventionals
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 #: 1903-00129-RI
PO Number: 11-157
All results reported on an as received basis.

Date Received: 11/16/20
Date Reported: 11/30/20

AMTEST Identification Number **20-A018480**
Client Identification **MW11-111420**
Sampling Date **11/14/20, 08:30**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Redox Potential	365.	unit		200	ASTM D1498-76	DM	11/19/20

AMTEST Identification Number **20-A018481**
Client Identification **MW8-111420**
Sampling Date **11/14/20, 10:30**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Redox Potential	392.	unit		200	ASTM D1498-76	DM	11/19/20

Aaron W. Young
Vice President

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

Professional Analytical Services

QC Summary for sample numbers: 20-A018480 to 20-A018481

DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	DUP VALUE	RPD
20-A018478	Redox Potential	unit	407.	420.	3.1

STANDARD REFERENCE MATERIALS

ANALYTE	UNITS	TRUE VALUE	MEASURED VALUE	RECOVERY
Redox Potential	unit	440.	437.	99.3 %

OnSite Environmental Inc.

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

Laboratory Reference #: 11-157

Laboratory: AmTest Laboratories

Attention: Aaron Young

13600 NE 126th Pl Kirkland, WA 98034

Phone Number: (425) 885-1664

Turnaround Request

1 Day 2 Day 3 Day

Standard

Other: _____

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 1903-00129-R1

Project Name: _____

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont	Requested Analyses
	MW11-111420 18480	11/14/20	8:30	W	1	Eh (ORP)
	MW8-111420 81	11/14/20	10:30	W	1	Eh (ORP)

	Company	Date	Time	Comments/Special Instructions
Relinquished by:		11/16/20	12:15	EDDs
Received by:	AMTEST T=6.0	11/16/20	12:15	
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

P.4

Chain of Custody

Page 1 of 1

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

Company: ENPRO ENVIRONMENTAL
Project Number: 1903-0029-R1
Project Name: GREEN COVE PARK
Project Manager: KIM KIM
Sampled by: HOANO ROSARIO

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
☐ _____ (other)

Laboratory Number: 11-157

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	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	~~Chromated Acid Herbicides 8151A~~ Cu (Total and Dissolved)	Total RCRA Metals	~~Total MTCA Metals~~ Pentachlorophenol	~~TCLP Metals~~ Benzoic Acid	~~HEM (oil and grease) 1664A~~ Ammonia	pH	Eh (ORP)	Mn	Fe	% Moisture
1	MW11 - 111420	11/4/2020	830	WATER	19		X		X					X				X	X	X	X	X	X	X	X	X	
2	MW8 - 111420	〃	1030	〃	17		X		X					X					X		X	X	X	X	X	X	
	← LAST ENTRY																										

11/14/2020

	Signature	Company	Date	Time
Relinquished		ENPRO ENVIRONMENTAL	11/14/2020	1430
Received		OGE	11/14/2020	1500
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
- FOR RCRA METALS, PLEASE PERFORM TOTAL AND DISSOLVED ANALYSES, FILTER AS NECESSARY
- HOLD REMAINDER OF SAMPLES PENDING FURTHER INSTRUCTION

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

APPENDIX D

Report Limitations and Guidelines for Use

REPORT LIMITATIONS AND USE GUIDELINES

Reliance Conditions for Third Parties

This report was prepared for the exclusive use of the Client. No other party may rely on this report or the product of our services without the express written consent of Aspect Consulting, LLC (Aspect). This limitation is to provide our firm with reasonable protection against liability claims by third parties with whom there would otherwise be no contractual conditions or limitations and guidelines governing their use of the report. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and recognized standards of professionals in the same locality and involving similar conditions.

Services for Specific Purposes, Persons, and Projects

Aspect has performed the services in general accordance with the scope and limitations of our Agreement. This report has been prepared for the exclusive use of the Client and their authorized third parties, approved in writing by Aspect. This report is not intended for use by others, and the information contained herein is not applicable to other properties.

This report is not, and should not, be construed as a warranty or guarantee regarding the presence or absence of hazardous substances or petroleum products that may affect the subject property. The report is not intended to make any representation concerning title or ownership to the subject property. If real property records were reviewed, they were reviewed for the sole purpose of determining the subject property's historical uses. All findings, conclusions, and recommendations stated in this report are based on the data and information provided to Aspect, current use of the subject property, and observations and conditions that existed on the date and time of the report.

Aspect structures its services to meet the specific needs of our clients. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and subject property. This report should not be applied for any purpose or project except the purpose described in the Agreement.

This Report Is Project-Specific

Aspect considered a number of unique, project-specific factors when establishing the Scope of Work for this project and report. You should not rely on this report if it was:

- Not prepared for you
- Not prepared for the specific purpose identified in the Agreement
- Not prepared for the specific real property assessed
- Completed before important changes occurred concerning the subject property, project, or governmental regulatory actions

If changes are made to the project or subject property after the date of this report, Aspect should be retained to assess the impact of the changes with respect to the conclusions contained in the report.

Geoscience Interpretations

The geoscience practices (geotechnical engineering, geology, and environmental science) require interpretation of spatial information that can make them less exact than other engineering and natural science disciplines. It is important to recognize this limitation in evaluating the content of the report. If you are unclear how these "Report Limitations and Use Guidelines" apply to your project or site, you should contact Aspect.

Discipline-Specific Reports Are Not Interchangeable

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually address any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding the subject property.

Environmental Regulations Are Not Static

Some hazardous substances or petroleum products may be present near 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 loc al., state or federal regulatory definitions of hazardous substances or petroleum products or do not otherwise present potential liability. Changes may occur in the standards for appropriate inquiry or regulatory definitions of hazardous substance and petroleum products; therefore, this report has a limited useful life.

Property Conditions Change Over Time

This 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 (for example, Phase I ESA reports are applicable for 180 days), by events such as a change in property use or occupancy, or by natural events, such as floods, earthquakes, slope failure or groundwater fluctuations. If more than six months have passed since issuance of our report, or if any of the described events may have occurred following the issuance of the report, you should contact Aspect so that we may evaluate whether changed conditions affect the continued reliability or applicability of our conclusions and recommendations.

Exhibit C – Scope of Work and Schedule

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Exhibit C — Scope of Work and Schedule

Scope of work

Purpose

The work under this Agreed Order (AO) requires Green Cove to:

- Implement the Data Gap Report and Remedial Investigation Work Plan (RI Work Plan) and complete a Remedial Investigation (RI).
- Conduct interim actions if required or agreed to by Ecology.
- Complete a Feasibility Study (FS) if necessary, based on the results of the RI.
- Prepare a preliminary Draft Cleanup Action Plan (DCAP) to select a cleanup alternative, if necessary, based on the results of the RI.

The purpose of the RI, FS, and preliminary DCAP for the Site is to provide sufficient data, analysis, and evaluations to enable Ecology to select a cleanup alternative for the Site.

Green Cove shall coordinate with Ecology throughout the implementation of the RI Work Plan, any Interim Action(s), development of RI and FS, and preparation of the preliminary DCAP, and shall keep Ecology informed of changes to any work plan or other project plans, and of any issues or problems as they develop.

Green Cove will address comments from Ecology on all deliverables under this order.

The Scope of Work (SOW) is divided into six major tasks as follows:

Task 1. Remedial Investigation

Task 2. Interim Action(s) (if required)

Task 3. Feasibility Study (if necessary)

Task 4. DCAP (if necessary)

Task 5. SEPA Compliance

Task 6. Public Participation

Task 1. Remedial Investigation

Green Cove shall conduct an RI that meets the requirements of WAC 173-340-350(7)and WAC 173-204-550, including implementing the attached RI Work Plan, as approved by Ecology, according to the schedule in this scope of work and the RI Work Plan. The RI will determine the nature and extent of contamination exceeding preliminary Model Toxics Control Act (MTCA) cleanup levels, preliminary Sediment Management Standards (SMS) cleanup standards, and other regulatory requirements. The RI must provide sufficient data and information to define the nature and extent of contamination.

Field sampling and analysis will be completed in general accordance with the SAP and QAPP. Deviation(s) from the approved SAP and QAPP must be communicated to Ecology immediately and documented as required by Ecology.

Green Cove shall provide interim data reports and updates to Ecology as new site data and information become available. Laboratory analysis data shall also be provided in electronic format when it has been validated. Raw laboratory data will be provided to Ecology. Electronic survey data for monitoring locations, electronic lab data, and GIS maps of contaminant distribution shall also be provided either in the report or as an attachment.

Prior to submittal of the Agency Review Draft RI Report, a Key Project Meeting will be held. During the Remedial Investigation Pre-Report Check-In, Ecology and Green Cove will review available data and an updated conceptual site model and discuss the content and organization of the Agency Review Draft RI Report.

Green Cove shall compile the results of the Site investigation into an Agency Review Draft RI Report. Green Cove shall prepare two (2) copies of the Agency Review Draft RI Report and submit them, including one electronic copy each in Word (.docx) and Adobe (.pdf) formats, to Ecology for review and comment.

After incorporating Ecology's comments on the Agency Review Draft RI Report, Green Cove shall prepare three (3) copies of a Public Review Draft RI Report and submit them, including one print copy and one electronic copy each in Word (.docx) and Adobe (.pdf) formats, to Ecology for distribution and public comment. Ecology may require up to five (5) additional print copies to support the public comment period.

Following public comment, Green Cove will shall make any changes deemed necessary by Ecology and submit a Final RI Report for Ecology's approval. Green Cove shall prepare three (3) copies of the Final RI Report and submit them, including one print copy and one electronic copy each in Word (.docx) and Adobe (.pdf) formats, to Ecology. The RI Report will not be considered Final until after a public review and comment period and approval by Ecology.

If the data collected during this investigation is insufficient to define the nature and extent of contamination and/or to select a cleanup action plan, additional phases of investigation shall be conducted, as necessary, to define the extent of contamination and select a cleanup action plan.

Task 2. Interim Actions (if required)

Remedial actions implemented prior to completion of the RI/FS, including those that:

- Are technically necessary to reduce a threat to human health or the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance,
- Correct a problem that may become substantially worse or cost substantially more to address if the remedial action is delayed, or
- Are needed to provide for completion of the remedial investigation/feasibility study or design of the cleanup action,

will be considered interim actions. The interim actions will be implemented in accordance with WAC 173-340-430 and the AO, and will be designed in a manner that will not foreclose reasonable alternatives for any final cleanup action that may be required.

As detailed in the AO, if required by Ecology, or if proposed by Green Cove and approved by Ecology, Green Cove will implement an interim action.

The scope of the interim actions may include, but not be limited to, typical source control or containment elements such as:

- Soil or sediment removal.
- Groundwater remediation.
- Repair, slip lining, replacement, or closure of stormwater conveyances or other structures such as conduit, vaults, catch basins, etc.
- Removal of underground storage tanks and pipes.
- Removal of old drain fields or former surface impoundments.
- Proper abandonment of old wells.
- Removal of contaminated building or other structural material.
- Construction of a treatment facility.
- Shoreline stabilization such as bulkhead repair, erosion or seepage control, and grading or clearing.

If an interim action is to be performed, Green Cove will prepare and submit for Ecology approval an Agency Review Draft Interim Action Work Plan (IAWP) with detail commensurate with the work to be performed. The Agency Review Draft IAWP shall include, as appropriate:

- Description of the interim action including its purpose, general requirements, schedule for completion, and relationship to the (final) cleanup action (to the extent known).
- Summary of relevant RI/FS information, including at a minimum existing site conditions and alternative interim actions considered.
- Information regarding design and construction requirements, including a proposed schedule and personnel roles and responsibilities.
- Compliance Monitoring Plan.
- SAP/QAPP.
- Permits required.

Green Cove will also submit a copy of the Health and Safety Plan for the project. Green Cove will be responsible for complying with the State Environmental Policy Act (SEPA) Rules including preparing and submitting an environmental checklist for the interim action, and will assist Ecology with presentations at any additional meetings or hearings that might be necessary for SEPA compliance or as part of the Public Participation Plan.

Green Cove shall prepare two (2) copies of the Agency Review Draft Interim Action Work Plan and submit them, including one electronic copy each in Word (.docx) and Adobe (.pdf) formats, to Ecology for review. Green Cove shall incorporate Ecology's comments and then prepare three (3) copies of the Public Review Draft Interim Action Work Plan and submit them, including one print copy and one electronic copy each in Word (.docx) and Adobe (.pdf) formats, to Ecology. Ecology may require up to five (5) additional print copies to support the public comment period.

After a public notice and comment period for the Public Review Draft IAWP (and SEPA determination), Green Cove shall make any changes deemed necessary by Ecology and submit a Final IAWP. Ecology will approve the Final IAWP (if appropriate), and the document will be considered final. Green Cove shall prepare three (3) copies of the Final IAWP and submit them, including one print copy and one electronic copy each in Word (.docx) and Adobe (.pdf) formats. Once approved by Ecology, Green Cove will implement the interim action according with the approved schedule in the IAWP.

Upon successful completion of the work, an Agency Review Draft Interim Action Report will be prepared as a separate deliverable. Green Cove shall prepare two (2) copies of the Agency Review Draft Interim Action Report and submit them, including one electronic copy each in

Word (.docx) and Adobe (.pdf) formats, to Ecology for review and approval. After incorporating Ecology's comments on the Agency Review Draft Interim Action Report and after Ecology approval, Green Cove shall prepare three (3) copies of the Final Interim Action Report and submit them, including one print copy and one electronic copy each in Word (.docx) and Adobe (.pdf) formats, to Ecology.

Task 3. Feasibility Study (if necessary)

If the RI shows contamination exists at the Site, Green Cove shall use the information obtained in the RI to prepare an Agency Review Draft Feasibility Study (FS) that meets the applicable requirements of WAC 173-340-350(8) according to the Schedule in this exhibit. The Agency Review Draft FS will evaluate remedial alternatives for site cleanup, consistent with MTCA and SMS requirements to ensure protection of human health and the environment by eliminating, reducing, or otherwise controlling risk posed through each exposure pathway and migration route.

Prior to beginning the FS, a Key Project Meeting will be held to review ARARs, potential remedial alternatives and establish points of compliance.

The Agency Review Draft FS must include a detailed analysis of each remedial alternative according to the applicable requirements of WAC 173-340-350 and 173-204-550. The remedial alternatives will be evaluated for compliance with the applicable requirements of WAC 173-340-360 and 173-204-570.

The remedial alternative that is judged to best satisfy the evaluation criteria will be identified. Justification for the selection will be provided, and the recommended remedial alternative further developed, in the FS Report.

Green Cove shall prepare two (2) copies of the Agency Review Draft FS and submit them, including one electronic copy in Word (.docx) and Adobe (.pdf) formats, to Ecology for review. After addressing Ecology's comments on the Agency Review Draft FS, Green Cove shall prepare three (3) copies of the Public Review Draft FS and submit them, including one print and one electronic copy each in Word (.docx) and Adobe (.pdf) formats, to Ecology for distribution and public comment. Ecology may require up to five (5) additional print copies to support the public comment period.

Following the public comment period, Green Cove shall make any changes deemed necessary by Ecology and submit a Final FS Report for Ecology's approval. Green Cove shall prepare three (3) copies of the Final FS Report. The Final FS Report will not be considered final until after a public review and comment period and approval by Ecology.

Task 4. Preliminary Draft Cleanup Action Plan (if necessary)

If the RI shows contamination exists at the Site, Green Cove will prepare a preliminary Draft Cleanup Action Plan. Upon Ecology approval of the Final Remedial Investigation Report and Final Feasibility Study, a Key Project Meeting will be held regarding the Cleanup Action Plan. The Cleanup Action Plan Meeting will be used to review plans for developing the Agency Review preliminary Draft Cleanup Action Plan (DCAP).

Green Cove shall prepare an Agency Review preliminary DCAP in accordance with WAC 173-340-380 that provides Ecology's selected remedial action to address the contamination present on the Site. The preliminary DCAP shall include a general description of the proposed remedial actions, cleanup standards developed from the RI/FS and rationale regarding their selection, a schedule for implementation, description of any institutional controls proposed, and a summary of applicable local, state, and federal laws pertinent to the proposed cleanup actions.

Green Cove will submit an Agency Review preliminary DCAP for Ecology's review and approval. The Agency Review preliminary DCAP will include, but not be limited to, the information listed under WAC 173-340-380. Green Cove shall prepare two (2) copies of the Agency Review preliminary DCAP and submit them, including one electronic copy each in Word (.docx) and Adobe (.pdf) formats, to Ecology for review and approval. If necessary, Green Cove shall revise the preliminary DCAP to address Ecology's comments. Ecology will prepare the DCAP for public review using Green Cove's preliminary DCAP.

Task 5. SEPA Compliance

Green Cove shall be responsible for complying with the State Environmental Policy Act (SEPA) Rules including preparing and submitting an environmental checklist. If the result of the threshold determination is a determination of significance (DS), Green Cove shall be responsible for the preparation of draft and final environmental impact statements. Green Cove shall assist Ecology with coordinating SEPA public involvement requirements with MTCA public involvement requirements whenever possible, such that public comment periods and meetings or hearings can be held concurrently.

Task 6. Public Participation

Green Cove shall support Ecology, as requested, in presenting the Public Review Draft RI Report, the Public Review Draft FS Report, the DCAP and SEPA evaluations at public meetings or hearings. Green Cove will support Ecology at any additional meetings or hearings that might be necessary for SEPA compliance or as part of the Public Participation Plan.

Green Cove shall support Ecology in responding to public comments, if requested by Ecology, following the public comment period.

Schedule of deliverables

The schedule for deliverables described in the Agreed Order and the Scope of Work is presented below. If the date for submission of any item or notification required by this Schedule of Deliverables occurs on a weekend, state or federal holiday, the date for submission of that item or notification is extended to the next business day following the weekend or holiday. Where a deliverable due date is triggered by Ecology notification, comments or approval, the starting date for the period shown is the date Green Cove received such notification, comments or approval by certified mail, return receipt requested, unless otherwise noted below. Where triggered by Ecology receipt of a deliverable, the starting date for the period shown is the date Ecology receives the deliverable by certified mail, return receipt requested, or the date of Ecology signature on a hand-delivery form. All deliverables shall incorporate Ecology's comments on previous deliverables.

RI/FS Deliverables/Action	Due Dates
Implement RI Work Plan	Begin within 90 days of the effective date of the agreed order according to the schedule in the RI Work Plan (Exhibit B).
Agency Review Draft RI Report	90 days following receipt of all validated laboratory data
Public Review Draft RI Report	45 calendar days following receipt of Ecology comments on Agency Review Draft RI Report
Agency Review Draft IAWP	If required, by the date determined by Ecology
Public Review Draft IAWP	45 calendar days following receipt of Ecology comments on Agency Review Draft IAWP
Final IAWP	30 calendar days following receipt of changes deemed necessary by Ecology following public comment
Implement IAWP	According to the schedule in the Final IAWP
Agency Review Draft Interim Action Report	45 days after completion of the Final IAWP
Final Interim Action Report	30 days following receipt of Ecology comments on the Agency Review Draft Interim Action Report and Ecology's approval of changes
Agency Review Draft FS Report	90 days following completion of Public Review Draft RI Report
Public Review Draft FS Report	45 calendar days following receipt of Ecology's comments on the Agency Review draft FS
Final RI and FS reports	30 calendar days following receipt of changes deemed necessary by Ecology following public comment
Agency Review preliminary Draft Cleanup Action Plan (DCAP)	90 calendar days following approval of the Public Review Draft RI and FS reports