BLUESTONE
ENVIRONMENTAL, NW

August 16, 2022

Clary Auburn RE, LLC
Mr. Bryce Clary
P.O. Box 127
Longview, WA 98632

Subject: **Updated Subsurface Investigation Report**
Project Number: BE-0107-D
Auburn VW Dealership Property
3109 Auburn Way North
Auburn, WA 98002

Dear Mr. Clary:

Thank you for the opportunity to provide our services. Bluestone Environmental NW (Bluestone) is pleased to present this updated report for the recently completed subsurface investigation efforts on the above referenced property. This report presents our findings and opinions from the completed subsurface investigation. With your review and comments, we look forward to identifying next steps towards obtaining regulatory closure for this Site.

Sincerely,
Bluestone Environmental NW

State of Washington
22010897
Licensed Geologist
Haley M Carter

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President/Operations Manager

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Updated Subsurface Investigation Report
Auburn VW Dealership Property
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Prepared for:
Clary Auburn RE, LLC

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1 INTRODUCTION

The subject property (Property) is located at 3109 Auburn Way North, in Auburn, Washington (Figure 1). The Property is currently under contract by Clary Auburn RE, LLC to purchase the Property from Conducere Investments, LLC. This report documents the findings and opinions of three completed subsurface investigation efforts. The purpose of these investigation efforts was to assess soils and groundwater for petroleum and other related contaminants that are commonly associated with automobile repair facilities.

2 BACKGROUND

Bluestone performed a Phase I Environmental Site Assessment (ESA) on the Property, report dated April 6, 2022. The ESA recommended that the subsurface investigations in areas near the interior trench-drain and oil/water separator be assessed[1]. Based on the recommendations of the ESA, Bluestone completed an initial subsurface investigation on April 24, 2022.

Six soil borings were drilled to a depth of fifteen feet during the initial investigation efforts. Detections of petroleum contaminants in groundwater, i.e., diesel-range organics (DRO), were reported in a grab-groundwater sample collected from an open boring drilled within the service shop area. Additionally, a detection of a carcinogenic-polycyclic-aromatic hydrocarbon (cPAH) was found in a shallow soil sample collected beneath the service shop concrete floor.

Based on the findings of the initial investigation, Bluestone completed a second subsurface characterization effort on May 23, 2022, in which five borings were drilled and completed as groundwater monitoring wells (MW-1 through MW-5). With the findings of the two subsurface characterization efforts, two areas in the service shop detected elevated concentrations of petroleum related contaminants in soil, i.e., oil-range organics (ORO) in boring MW-4 and benzo(a)-pyrene in boring B-2 (Tables 1a and 1b). The detected concentrations of these petroleum contaminants were found to be in shallow soils, i.e., within five feet of the ground surface.

Groundwater data from the second subsurface characterization effort reported detections of diesel-range organics (DRO) in each of the five monitoring wells at concentrations below CULs. However, Arsenic was detected at concentrations above the CULS in three of the five monitoring wells[2].

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[1] The interior trench drain is located in the service shop area of the dealership. The oil/water separator is located outside, adjacent to the north side of the service shop building.

[2] Detections of arsenic in the second subsurface characterization effort were analyzed by Total Metal reporting methods only.

In an effort to refine the area of shallow soil contamination and assess concentrations of arsenic in groundwater using both Total and Dissolved analysis methods, Bluestone conducted as third subsurface characterization effort on July 20 and 26, 2022. A discussion of the updated findings from the third characterization effort are presented below.

2.1 Regulatory Background

The characterization and remediation of hazardous substances in Washington State is regulated under the Model Toxics Control Act (MTCA). MTCA establishes administrative processes and standards to identify, investigate, and cleanup facilities where hazardous substances have come to be located (WAC 173-340-100). The MTCA regulations are administered by the Washington State Department of Ecology (Ecology) and is also implemented by the Pollution Liability Insurance Agency (PLIA).

2.1.1 Regulatory & Contaminant Definitions

The term ‘Property’ refers to the tax parcel identified as 000400-0041, located at 3109 Auburn Way North, Auburn, as described by King County. The term ‘Site’ is defined in MTCA as the lateral and vertical extent of contamination, be it on or off the Property.

The term ‘contaminant’ refers to the presence of petroleum or other hazardous substances that do not occur naturally or which are found at concentrations greater than what occurs naturally. The term ‘contamination’ refers to the presence of petroleum or other hazardous substances that are present with concentrations greater than established MTCA CULs.

For this report, ‘non-impacted’ soil refers to soils without detectable concentrations of Site contaminants. Soil with detectable concentrations of contaminants, but that are below CULs, are referred to as ‘impacted.’ Soil with reported concentrations of Site contaminants above applicable CULs are referred to as ‘contaminated’.’

For this report, ‘cleanup levels’ are in reference to the MTCA Method A CULs.

2.2 Site Setting

The Property is located in a retail and commercial area north of downtown Auburn. Based on Google Earth measurements, the Property is at an approximate elevation of 58 feet above sea level. The nearest surface body of water is the Green River, approximately 0.42 miles to the east of the Property.

2.3 Geology Setting

The Property is located in the Duwamish Valley, west of the Green River. In this area, floodplain deposits cover the drift plain forming a broad, fertile area. The valley floor is described as alluvium of the White River: dark reddish-gray pebble-cobble gravel and sand derived largely from Mt. Rainier with a thickness generally less than 30 feet in the White River Valley and probably more than 200 feet in course fan deposits in the Duwamish Valley near Auburn. Post glacial deposits include peat, the Osceola mud flow, mass-wasting debris, and alluvial flood-plain deposits from the White, Green and Cedar Rivers (Luzier, 1969).

2.4 Arsenic in Soil Discussion

The historical review of the Property did not identify any commercial or industrial uses or sources of arsenic from the prior or current automobile operations on the Property. Based on the reported environmental cleanup actions completed on the Property in 2018/2019 by G-Logics, Inc., (GLogics) natural/background concentrations of arsenic on the Property are elevated[3]. These elevated concentrations are understood to be present on the Property as it is located within the Asarco area-wide smelter plume, from the volcanic materials contained in the Osceola mud flow, and from agricultural practices in the area that may have contributed to area-wide arsenic concentrations.

2.5 Arsenic in Groundwater Discussion

Concentrations of arsenic were detected above Method A cleanup levels (CULs) in grab-groundwater and permanent monitoring groundwater samples, in both Totals and Dissolved analysis. Based on a No Further Action Letter from PLIA, dated May 6, 2019, which was provided for a separate Site on the Property[4], Bluestone understands the background level of arsenic in the groundwater at the Site is understood to be 8.0 µg/L. Based on the May 6, 2019 NFA Letter, the background arsenic concentration in groundwater of 8.0 µg/L can be subtracted from the detections of arsenic in the developed/permanent monitoring wells to establish an adjusted concentration for comparison to CULs.

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[3] See attached GLogics reports, dated April 12, 2018, and February 5, 2019, in Appendix A.

[4] See attached NFA Letter for the Site remediated on the Property in 2018/2019 in Appendix B.

3 SUMMARY OF SUBSURFACE INVESTIGATIONS

On April 24, 2022, Bluestone completed an initial subsurface investigation on the Property. Holocene Drilling (Holocene) was retained to advance six soil-probe borings (B-1 through B-6) to depths of 15 feet below ground surface (bgs).

On May 23, 2022, Bluestone completed a follow-up investigation on the Property. Holocene was once again retained to advance five additional soil-probe borings to depths of 17 feet bgs. These five borings were also completed as monitoring wells (MW-1 through MW-5).

On July 20, 2022, a third subsurface investigation effort was conducted on the Property in an attempt to refine contaminant conditions in shallow soils and assess arsenic in groundwater using both Total and Dissolved analysis methods. A summary of the investigation efforts is presented below.

3.1 Underground Utility Clearance

Due to the possible presence of subsurface utilities in the areas where borings were advanced, Bluestone coordinated with public and private utility-locating firms before beginning field work for the subsurface investigation activities. The inferred locations of subsurface utility locations were identified on the surface with paint.

3.2 Soil Borings

As previously mentioned, Bluestone completed six soil borings on the property on April 24, 2022, using direct-push drilling methods. On May 23, 2022, five additional direct-push borings were completed and on July 20, 2022, eight additional direct-push borings were completed.

In general, the soils recovered during the subsurface investigations consisted of loose fill material from the surface to approximately three feet bgs, silty sands from approximately three feet to 12 feet bgs, and poorly graded sands from approximately 12 feet bgs to the explored depths. During the drilling efforts, soil cores were extracted in five-foot polypropylene liners. Soil samples were generally collected at three to five-foot intervals in each of the borings. The boring locations are shown on Figure 2. Boring logs are attached in Appendix C.

All soil cores were screened field for indications of contamination, such as observable staining or odors. Additionally, soil cores were field screened using a photoionization detector (PID) for the presence of volatile-organic compounds. Select soil samples were submitted to the Friedman and Bruya laboratory for analysis.

3.3 Grab-Groundwater Sampling

During the initial subsurface investigation, grab-groundwater samples were collected from five of the six soil borings (B-1, B-2, B-4, B-5, and B-6) completed on April 24, 2022. Samples were collected using clean one-inch PVC well casing and screen. The well casing/screen was lowered into the open boring, followed by lowering a ¼” I.D. low-density polyethylene (LDPE) tubing into the well casing/screen. Groundwater was collected using a peristaltic pump in general accordance with low-flow sampling procedures. Collected groundwater samples were submitted to Friedman and Bruya laboratory for analysis.

3.4 Groundwater Monitoring Well Installation and Sampling

Five soil borings were completed as two-inch groundwater monitoring wells on May 23, 2022, and designated MW-1 through MW-5. The locations of monitoring wells can be seen on Figure 2. Well construction information is presented in Table 3.

Bluestone collected groundwater samples on May 26, and July 26, 2022, from the five monitoring wells. Prior to the purging and sampling activities, depth to water levels were measured in each well. The recorded depths were then converted to elevations using the elevation data.

For this and previous site characterization reports, the elevation data was obtained from data reported by GLogics in a *Well Installation and Groundwater Sampling* report, dated April 12, 2018. Specifically, GLogics stated that the north entrance of the service shop[5] was identified to be at an elevation of 57.70 feet above mean sea level. GLogics stated that this elevation data was determined by Terrane, a professional surveying company, in August 2017. Using this elevation data, Bluestone surveyed the five monitoring wells on the property to establish elevation control for each well.

Purging was performed until groundwater parameters stabilized. Groundwater conditions were monitored during purging using a YSI-556 meter with a flow-thru cell. Sampling and field methods are described in greater detail in Appendix D. Groundwater parameters are presented in Table 4 and purge logs are attached in Appendix E.

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[5] The north entrance is in reference to the Subaru dealership that is on the south adjoining property, 3025 Auburn Way North.

4 SUBSURFACE INVESTIGATION FINDINGS

The findings of the three subsurface investigations are presented below.

4.1 Soil Sample Findings

Selected soil samples from the borings were submitted for laboratory analysis as shown on Table 1. A summary of the analytical results is discussed below.

4.1.1 GRO Analytical Results

GRO was not detected in any of the selected analyzed soil samples above the laboratory reporting limit.

4.1.2 DRO and ORO Analytical Results

DRO was not detected in any of the selected analyzed soil samples above the laboratory reporting limits.

ORO was detected in soil above the CUL of 2,000 mg/kg in one of the analyzed samples (MW-4-3) at a concentration of 2,900 mg/kg. ORO was not detected in any of the remaining selected analyzed soil samples above the laboratory reporting limit.

4.1.3 VOC Analytical Results

Vinyl Chloride was detected in one soil sample (B-1-10) at a concentration of 0.073 mg/kg. This concentration is below the MTCA Method B CUL of 0.67 mg/kg. VOCs were not detected above the laboratory reporting limits in any of the other selected analyzed soil samples.

4.1.4 Polycyclic-Aromatic Hydrocarbon (PAH) Analytical Results

Benzo(a)-pyrene, a carcinogenic (c) PAH[6], was detected at a concentration of 2.6 mg/kg in soil sample B-2-5 which is above the CUL of 0.1 mg/kg. Other PAHs also were detected in soil samples from boringsB-1, MW-4, and MW-5, but at concentrations below the MTCA Method A and/or B CULs.

To further assess the impact of the benzo(a)-pyrene detection in B-2-5, Bluestone performed a site-specific Method B analysis using Ecology's MCTATPH Spreadsheet. The results of the site-specific Method B calculations indicate that a concentration of 2.6 mg/kg would be the Method B risk-based cleanup level for direct contact (human health) at this Site. Because the calculated cleanup level is 2.6 mg/kg, the detected concentration of benzo(a)-pyrene in sample B-2-5 was at the cleanup level, not below,

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[6] cPAHs are a subset up polycyclic-aromatic hydrocarbons which are classified as carcinogenic.

therefore it fails the protectiveness criteria for direct contact/human health. However, the results of the Method B calculations indicate that the detect concentration of benzo(a)-pyrene in the soil sample B-2-5 are protective of the groundwater leaching pathway.[7]

A soil sample from a depth of three feet bgs in boring MW-3, which was completed near boring B-2 on May 23, 2022, did not contain a detection of benzo(a)-pyrene or other cPAHs. To refine the lateral boundaries of benzo(a)-pyrene detected in boring B-2, four additional boring were completed on July 20, 2022, i.e., B-9 through B-12. Soil samples from the depths of three, five, and six feet bgs from these four borings did not contain detections of cPAHs with the exception of soil sample B-12-5, which detected concentrations of cPAHs below the CULs. Soil sample B-12-5 was collected at a depth of five feet bgs.

Note, during the July 20, 2022, sampling efforts, pieces of asphalt were observed in borings B-10 and B-12 between the depths of three and five feet bgs. Based on this observation, Bluestone reasons that the detection of benzo(a)-pyrene in boring B-2 are from asphalt material used in the backfill and grading activities completed to construct the current building in 2001. Additionally, the completed Phase I ESA did not identify any business operations on the Property that would have used or created cPAH waste or a release.

4.1.5 Metal Analytical Results

Arsenic, Chromium, and Lead were detected in all of the analyzed samples but at concentrations below the CULs. Cadmium and Mercury were not detected above laboratory reporting limits in any of the analyzed samples.

4.2 Groundwater Findings

Groundwater samples were submitted for laboratory analysis as shown on Table 2. Note, grab-groundwater was collected from the open borings during the initial investigation effort on April 24, 2022. The subsequent May 26 and July 26, 2022, groundwater sampling events collected groundwater from the developed/permanent monitoring wells installed on May 23, 2022. A summary of the analytical results is discussed below.

4.2.1 GRO Analytical Results

GRO was not detected in any of the selected analyzed groundwater samples above the laboratory reporting limits.

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[7] Please see the MCTATPH Spreadsheet calculations for soil sample B-2-5 in Appendix F.

4.2.2 DRO and ORO Analytical Results

4.2.2.1 *Initial Investigation Results*

DRO was detected in the grab-groundwater sample collected from boring B-4[8] at a concentration of 2,500 µg/L, above the MTCA Method A CUL of 500 µg/L. DRO also was detected in the other four grab-groundwater samples from borings B-1, B-2, B-5, and B-6, but at concentrations below the CUL.

ORO also was detected in the groundwater sample B-4-W, but at concentrations below the CUL, at 370 µg/L. ORO was not detected in the grab-groundwater samples from borings B-1, B-2, B-5, and B-6.

In reviewed the chromatograms for sample B-4-W, the laboratory noted that the material was heavily weather and contained a large quantity of metabolites. It was also noted that the chromatograms were similar and that the analyzed material quantify as a single product, i.e., DRO extended (C_{10}-C_{36}).

4.2.2.2 *May 2022 Investigation Results*

The analyzed groundwater samples from the May 26, 2022, sampling event detected concentrations of DRO below the CUL of 500 µg/L in each of the five monitoring wells (MW-1 through MW-5). Only one groundwater sample, collected from MW-3, had a laboratory reported concentration of ORO, which was below the CUL of 500 µg/L. However, as with the earlier grab-groundwater sample B-4-W, the material in the sample from MW-3 eluted as a single product, in-between the diesel (C_{10}-C_{25}) and motor oil (C_{25}-C_{36}) quantification ranges, as well as being heavily weather with a large population of metabolites.

Since the chromatograms indicated that the material was a single product, specifically an unresolved complex mixture (UCM), it was determined that a more accurate reporting representation of the material would be to report the material as Diesel extended (C_{10}-C_{36}) rather than splitting the quantification range at C_{25} and reporting as it as two separate products. Accordingly, the reported concentrations of DRO extended in groundwater collected from monitoring wells MW-1 through MW-5 were all below the CUL.

4.2.2.3 *July 2022 Investigation Results*

The analyzed groundwater samples from the July 26, 2022, sampling event detected concentrations of DRO extended above the CUL in four of the five monitoring wells, i.e.,

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[8] Boring B-4 was completed during the initial investigation efforts on April 24, 2022.

MW-1 through MW-4 (Figure 3). MW-5 detected a concentration of DRO extended at a concentration of 300 µg/L, below the CUL.

4.2.3 VOC Analytical Results

VOCs were not detected in any of the selected analyzed groundwater samples at concentrations above the laboratory reporting limits.

4.2.4 PAH Analytical Results

Phenanthene (a non-cPAH) was detected in the groundwater grab sample collected from the grab-groundwater sample from boring B-4 at a concentration of 0.092 ug/L. A CUL for Phenanthene has not been established by Ecology. PAHs, including cPAHs, were not detected in any of the remaining selected analyzed samples above the laboratory reporting limits.

4.2.5 Metals Analytical Results

Arsenic (total) was detected above the CUL in the initial grab-groundwater samples collected from open borings B-1, B-2, B-4, B-5, and B-6 on April 24, 2022.

Arsenic (total) also was detected above the CUL in the second groundwater sampling event completed on May 26, 2022, which were collected from the developed groundwater monitoring wells. Specifically, arsenic was detected above the CULs in monitoring wells MW-1, MW-4, and MW-5. The reported concentrations of arsenic in the groundwater samples collected from monitoring wells MW-2 and MW-3 were below the CUL.

The analytical results from the July 26, 2022, sampling event detected concentrations of arsenic above the CULs in both of the totals and dissolved analyzed samples in each of the five monitoring wells.

Chromium (total) was detected above the MTCA Method A CUL in the grab-groundwater sample collected from boring B-4 during the initial sampling event. The reported concentration of chromium in the remaining open boring samples B-1, B-2, B-5, and B-6 were below the CUL.

Chromium (total) was detected in the groundwater sampled during the May 26, 2022, sampling event in monitoring well MW-3 at a concentration below the CUL. Concentrations chromium were not detected in the remaining four monitoring wells in the May 26, 2022, sampling event. Additionally, chromium was not detected in the five monitoring wells during the July 26, 2022, sampling event.

Lead (total) was detected in the five analyzed grab-groundwater samples collected from the open borings at concentrations below the MTCA Method A CUL. As the samples were turbid, the nitric acid preservative could have released the lead. Lead was not detected in any of the samples analyzed from the developed monitoring wells during the May 26, 2022, sampling event.

Cadmium and Mercury (total) were not detected in any of the analyzed groundwater samples at concentrations above the laboratory reporting limit.

4.3 Groundwater Elevation and Flow

Measured groundwater elevations are tabulated in Table 3. Measured groundwater depths during the May 26, 2022, sampling event ranged from 7.44 to 8.20 in the five monitoring wells. Measured groundwater depths during the July 26, 2022, sampling event ranged from 9.36 to 9.85 in the five monitoring wells. Depths to groundwater were measured on August 11, 2022, and were found to range from 9.14 to 9.89, similar to the July 26, 2022 measurements, but fluctuating at each well location (Table 3).

As shown on Figures 4a, 4b, and 4c, the calculated groundwater elevations indicate that groundwater on the Property has little gradient and has a seasonally changing flow direction, generally towards the west and north.

4.4 Quality Assurance/Quality Control

Procedures for Quality Assurance/Quality Control (QA/QC) were observed during the performed efforts, including generally accepted procedures for sample collection, storage, tracking, and documentation. Collected samples were labeled with a sample number, date, time, and sampler name, recorded on a chain-of-custody document, placed in a cooler and chilled before delivery to the laboratory for analysis. Laboratory analytical reports are attached in Appendix G. Field Methods are attached in Appendix D.

5 SITE CHARACTERIZATION SUMMARY

Soil data indicates that petroleum contamination, i.e., ORO, is present in a limited area beneath the service shop slab near boring MW-4. The ORO contamination in soil is understood to be located in the shallow vadose soils, within four-to-five feet of the ground surface. The ORO contamination in soil is not in contact with groundwater, which is present at an approximate depth of eight to nine feet bgs. Field indications and analytical results indicate that the ORO contamination in soil is laterally bound within the explored area as shown on Figure 2.

As discussed in Section 4.1.4, the isolated detection of benzo(a)-pyrene in soil sample B-2-3 is not considered concern with the understanding that the source is from asphalt material that was incorporated into the backfill material used during the construction of the building in 2001. Additionally, as the asphalt debris in the backfill material is well above the groundwater table and covered with the concrete slab of the shop floor and does not present a concern for groundwater.

As discussed in Section 4.2.2, the chromatograms indicated that the DRO material found in groundwater is not a single product and is better represented by identifying the material as DRO extended (C_{10}-C_{36}). Accordingly, groundwater data from the July 26, 2022, sampling event indicates that the DRO extended contamination in groundwater is a concern at this Site. At this time, the source of the DRO extended contamination in groundwater is not known.

Concentrations of total and dissolved arsenic in groundwater were reported above the CULs in the samples collected from the five monitoring wells on July 26, 2022. However, area-wide elevated concentrations of arsenic are understood to be present due to the Asarco smelter plume, from the volcanic materials that comprised the Osceola mud flow, and from past agricultural practices in the area. This issue will need to be further addressed with the regulatory agency that oversees the cleanup and request for an NFA.

6 CONCLUSIONS AND OPINIONS

A limited area of shallow soil, which is separated from groundwater, is impacted with ORO contamination beneath the concrete slab of the service shop. The detected concentration of benzo(a)-pyrene/cPAH contaminants in shallow soils[9] are related to the asphalt debris that was incorporated into the backfill material during the construction of the building and therefore are not considered a contaminant requiring further action on the Property.

As illustrated on Figure 3, DRO extended is present in groundwater at concentrations exceeding CULs in a large footprint on the Property. The source and extent of this DRO plume is unknown at this time and will require additional efforts to fully understand. Additionally, the use of silica gel cleanup methods should be reviewed for application to this issue.

It should also be noted that in Bluestone's experience, season groundwater elevations will affect detected concentrations of contaminants at a site. Specifically, when groundwater depths are deeper (a lower elevation), contaminant concentrations generally will increase. Accordingly, the higher concentrations of DRO extended detected in the July 26, 2022 sampling event (compared to the May 26, 2022 event) are not atypical.

As discussed in Sections 2.4 and 2.5, the issue of arsenic in groundwater at the Site are understood to be biased high due to area-wide human-made and naturally occurring releases of arsenic. Additionally, as presented in the previously completed environmental cleanup efforts conducted on the Property[10], soil concentrations for arsenic generally increase at the approximate depths between 5 and 8 feet. These higher concentrations of arsenic are understood to be associated with the native soils at the Site, which are located beneath the structural-fill materials. This indicates that arsenic would have been present at the property prior to placement of the structural-fill material and construction of the building on the Property.

Additionally, potential exposures to arsenic in the groundwater are limited as the area is covered with buildings and/or asphalt, prohibiting direct contact with the groundwater. Also, the shallow groundwater on the Property is unlikely to be used as a drinking water source due to its low quality. These conditions were previous accepted by PLIA in there No Further Action letter dated May 6, 2019.

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[9] Soil sample B-2-5.

[10] As documented in the attached G-Logics, Inc., Groundwater Sampling Reports, dated April 12, 2018, and February 5, 2019, and No Further Action letter dated May 6, 2019, prepared by PLIA. See Appendix A and B, respectively.

However, additional study is more than likely necessary to convince a regulatory agency that arsenic in groundwater is not a concern at this site. Specifically, as stated by Ecology in the January 2022 *Natural Background Groundwater Arsenic Concentrations in Washington State* study,

- Groundwater arsenic concentrations greater than 10 μg/L are typically the result of geochemical changes in iron oxide.
- Arsenic may be released by reactions of iron oxide with natural or anthropogenic organic carbon (e.g., petroleum products).
- Arsenic releases may also occur as a result of iron oxide reacting with alkaline groundwater from various geologic environments, such as felsic volcanic rock or alkaline aquifers.
- Low- lying topography, with flat groundwater gradients, may also result in higher arsenic (i.e., not enough dilution; Smedley and Kinniburgh 2002).

To validate that the detected concentrations of arsenic in groundwater can be considered a natural occurring background condition and not a site contaminant, demonstration of one or more of the above bulleted conditions will likely be required.

7 LIMITATIONS

The completed site investigation services were designed to provide an evaluation of subsurface contaminant conditions on the Property. These services were not designed to find or identify all potential issues or eliminate all risks that could be associated with contaminants on the Properties. Even the most carefully performed environmental assessments are not likely to identify all contaminant conditions existing at a Site.

Our opinions and interpretations presented in this report may change as new information is made available. This may be obtained during additional explorations, remediation actions, or redevelopment of the Property. Additionally, regulations often change that may affect the findings of our work. Accordingly, our opinions, findings, and recommendations are only valid up to the date of this report.

The presented remedial alternatives and accompanying rough-estimated costs are provided to assist with decision making processes for Clary Auburn RE, LLC. As such, this report has been prepared and is intended for the sole use by the client, Clary Auburn RE, LLC. Others may not use or rely on this report. Within the limitations of scope, schedule, and budget, this report was completed in a manner consistent with that level of care and skill exercised by members of the profession currently practicing in the same locality under similar conditions as this project. No warranty is either expressed or implied.

To the extent that the preparation of this report required the application of best professional judgment and the application of scientific principles, certain results of this effort were based on subjective interpretation. Bluestone makes no warranties, express or implied, including and without limitation warranties as to merchantability or fitness for a particular purpose. The information provided in this report is not to be construed as legal advice.

Attachments

Tables

Table 1
Soil Laboratory Analytical Results: Petroleum, PAHs, Metals (1)
Auburn Volkswagen
3109 Auburn Way North, Auburn, WA
Project No. BE-0107-D

Boring / Location Identifier	Sample Date	Sample Name	Sample Depth (ft)	PID Readings (PPM)	Gasoline Range Organics	Diesel Range Organics	Heavy/ Lube Oil Range Organics	Benzene	Toluene	Ethyl-benzene	Xylenes	Vinyl chloride	2-Methylnaphthalene	1-Methylnaphthalene	Naphthalene	Other Polycyclic Aromatic Hydrocarbons	Arsenic	Cadmium	Chromium	Mercury	Lead
					GRO	DRO	ORO									PAHs					
					Laboratory Units Reported in mg/kg																
Method A Cleanup Levels					30/100*	2,000	2,000	0.03	7	6	9	†	†	†	5	various	20	2.0	2,000	2.0	250
Method B Cleanup Levels (Cancer)					†	†	†	18	†	†	†	0.67	†	†	†	various	0.67	†	†	†	†
B-1	4/24/22	B-1-5	5	0.0	--	<50	<250	<0.03	<0.05	<0.05	<0.1	<0.05	<0.01	<0.01	**0.032**	(2)	--	--	--	--	--
	4/24/22	B-1-10	10	0.0	<5	<50	<250	<0.03	<0.05	<0.05	<0.1	**0.073**	--	--	--	--	--	--	--	--	--
	4/24/22	B-1-13	13	0.0	<5	<50	<250	<0.03	<0.05	<0.05	<0.1	<0.05	<0.01	<0.01	<0.01	(2)	**2.14**	<1	**11.8**	<1	**2.89**
	4/24/22	B-1-15	15	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-2	4/24/22	B-2-5	5	0.0	<5	<50	<250	<0.03	<0.05	<0.05	<0.1	<0.05	**0.17**	**0.17**	**0.074**	--	**4.22**	<1	**10.8**	<1	**4.73**
	4/24/22	B-2-10	10	0.0	--	<50	<250	--	--	--	--	--	<0.01	<0.01	<0.01	(2)	--	--	--	--	--
	4/24/22	B-2-13	13	0.0	--	<50	<250	<0.03	<0.05	<0.05	<0.1	<0.05	--	--	--	--	--	--	--	--	--
	4/24/22	B-2-15	15	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-3	4/24/22	B-3-5	5	0.0	<5	<50	<250	<0.03	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	(2)	--	--	--	--	--
	4/24/22	B-3-10	10	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/24/22	B-3-12	12	0.2	<5	<50	<250	<0.03	<0.05	<0.05	<0.1	<0.05	--	--	--	--	--	--	--	--	--
	4/24/22	B-3-15	15	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-4	4/24/22	B-4-5	5	0.0	--	<50	<250	--	--	--	--	--	<0.05	<0.05	<0.05	(2)	--	--	--	--	--
	4/24/22	B-4-10	10	0.0	<5	<50	<250	<0.03	<0.05	<0.05	<0.1	<0.05	--	--	--	--	--	--	--	--	--
	4/24/22	B-4-14	14	0.0	<5	<50	<250	<0.03	<0.05	<0.05	<0.1	<0.05	<0.01	<0.01	<0.01	(2)	**3.15**	<1	**9.17**	<1	**1.82**
	4/24/22	B-4-15	15	0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-5	4/24/22	B-5-5	5	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/24/22	B-5-10	10	0.0	--	<50	<250	<0.03	<0.05	<0.05	<0.1	<0.05	<0.01	<0.01	<0.01	(2)	--	--	--	--	--
	4/24/22	B-5-12	12	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/24/22	B-5-15	15	0.3	--	<50	<250	<0.03	<0.05	<0.05	<0.1	<0.05	--	--	--	--	**1.27**	<1	**8.95**	<1	**1.27**
B-6	4/24/22	B-6-5	5	0.0	--	--	--	--	--	--	--	--	<0.01	<0.01	<0.01	(2)	--	--	--	--	--
	4/24/22	B-6-10	10	0.0	--	<50	<250	<0.03	<0.05	<0.05	<0.1	<0.05	--	--	--	--	--	--	--	--	--
	4/24/22	B-6-13	13	0.0	<5	<50	<250	<0.03	<0.05	<0.05	<0.1	<0.05	<0.01	<0.01	<0.01	(2)	**3.27**	<1	**9.23**	<1	**1.99**
	4/24/22	B-6-15	15	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-7	7/20/22	B-7-3	3	0.0	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/20/22	B-7-5	5	0.0	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/20/22	B-7-8	8	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-8	7/20/22	B-8-3	3	0.1	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/20/22	B-8-5	5	0.0	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/20/22	B-8-8	8	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-9	7/20/22	B-9-3	3	0.1	--	--	--	--	--	--	--	--	<0.01	<0.01	<0.01	(2)	--	--	--	--	--
	7/20/22	B-9-5	5	0.0	--	--	--	--	--	--	--	--	**0.014**	<0.01	<0.01	(2)	--	--	--	--	--
	7/20/22	B-9-8	8	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 1
Soil Laboratory Analytical Results: Petroleum, PAHs, Metals (1)
Auburn Volkswagen
3109 Auburn Way North, Auburn, WA
Project No. BE-0107-D

Boring / Location Identifier	Sample Date	Sample Name	Sample Depth (ft)	PID Readings (PPM)	Gasoline Range Organics	Diesel Range Organics	Heavy/ Lube Oil Range Organics	Benzene	Toluene	Ethyl-benzene	Xylenes	Vinyl chloride	2-Methylnaphthalene	1-Methylnaphthalene	Naphthalene	Other Polycyclic Aromatic Hydrocarbons	Arsenic	Cadmium	Chromium	Mercury	Lead
					GRO	DRO	ORO									PAHs					
					Laboratory Units Reported in mg/kg																
				Method A Cleanup Levels	30/100*	2,000	2,000	0.03	7	6	9	†	†	†	5	various	20	2.0	2,000	2.0	250
				Method B Cleanup Levels (Cancer)	†	†	†	18	†	†	†	0.67	†	†	†	various	0.67	†	†	†	†
B-10	7/20/22	B-10-3	3	0.0	--	--	--	--	--	--	--	--	<0.01	<0.01	<0.01	(2)	--	--	--	--	--
	7/20/22	B-10-5	5	4.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/20/22	B-10-6	6	0.0	--	--	--	--	--	--	--	--	**0.042**	**0.029**	**0.013**	(2)	--	--	--	--	--
	7/20/22	B-10-8	8	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-11	7/20/22	B-11-3	3	0.0	--	--	--	--	--	--	--	--	<0.01	<0.01	<0.01	(2)	--	--	--	--	--
	7/20/22	B-11-5	5	0.0	--	--	--	--	--	--	--	--	<0.01	<0.01	<0.01	(2)	--	--	--	--	--
	7/20/22	B-11-8	8	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-12	7/20/22	B-12-3	3	0.0	--	--	--	--	--	--	--	--	<0.01	<0.01	<0.01	(2)	--	--	--	--	--
	7/20/22	B-12-5	5	0.0	--	--	--	--	--	--	--	--	<0.01	<0.01	<0.01	**0.336**	--	--	--	--	--
	7/20/22	B-12-8	8	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-13	7/20/22	B-13-3	3	0.0	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/20/22	B-13-5	5	0.0	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/20/22	B-13-8	8	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-14	7/20/22	B-14-3	3	0.0	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/20/22	B-14-5	5	0.0	--	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/20/22	B-14-8	8	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	5/23/22	MW-1-5	5	0.0	<5	<50	<250	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--	--
	5/23/22	MW-1-7	7	0.0	<5	<50	<250	<0.02	<0.02	<0.02	<0.06	--	<0.01	<0.01	<0.01	(2)	**13.4**	<1	**12.0**	<1	**10.3**
	5/23/22	MW-1-12	12	0.0	<5	<50	<250	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--	--
	5/23/22	MW-1-15	15	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	5/23/22	MW-2-5	5	0.0	<5	<50	<250	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--	--
	5/23/22	MW-2-8	8	0.0	<5	<50	<250	<0.02	<0.02	<0.02	<0.06	--	<0.01	<0.01	<0.01	(2)	**11.0**	<1	**18.8**	<1	**4.6**
	5/23/22	MW-2-12	12	0.0	<5	<50	<250	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--	--
	5/23/22	MW-2-15	15	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	5/23/22	MW-3-3	3	0.0	<5	<50	<250	<0.02	<0.02	<0.02	<0.06	<0.05	<0.01	<0.01	<0.01	(2)	**2.96**	<1	**9.05**	<1	**6.38**
	5/23/22	MW-3-5	5	0.0	<5	<50	<250	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--	--
	5/23/22	MW-3-10	10	0.0	<5	<50	<250	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--	--
	5/23/22	MW-3-15	15	0.0	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--	--

Table 1

Soil Laboratory Analytical Results: Petroleum, PAHs, Metals (1)

Auburn Volkswagen

3109 Auburn Way North, Auburn, WA

Project No. BE-0107-D

Boring / Location Identifier	Sample Date	Sample Name	Sample Depth (ft)	PID Readings (PPM)	Gasoline Range Organics	Diesel Range Organics	Heavy/ Lube Oil Range Organics	Benzene	Toluene	Ethyl-benzene	Xylenes	Vinyl chloride	2-Methylnaphthalene	1-Methylnaphthalene	Naphthalene	Other Polycyclic Aromatic Hydrocarbons	Arsenic	Cadmium	Chromium	Mercury	Lead
					GRO	DRO	ORO									PAHs					
					Laboratory Units Reported in mg/kg																
				Method A Cleanup Levels	30/100*	2,000	2,000	0.03	7	6	9	†	†	†	5	various	20	2.0	2,000	2.0	250
				Method B Cleanup Levels (Cancer)	†	†	†	18	†	†	†	0.67	†	†	†	various	0.67	†	†	†	†
MW-4	5/23/22	MW-4-3	3	0.6	<5	<50	**2,900**	<0.02	<0.02	<0.02	<0.06	<0.05	<0.2	<0.2	<0.2	(2)	**2.33**	<1	**7.46**	<1	**2.88**
	5/23/22	MW-4-5	5	0.0	<5	<50	<250	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--	--
	5/23/22	MW-4-10	10	0.0	<5	<50	<250	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--	--
	5/23/22	MW-4-15	15	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	5/23/22	MW-5-3	3	0.5	<5	<50	<250	<0.02	<0.02	<0.02	<0.06	<0.05	**0.038**	**0.028**	**0.014**	(2)	**5.56**	<1	**10.4**	<1	**5.86**
	5/23/22	MW-5-5	5	0.0	<5	<50	<250	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--	--
	5/23/22	MW-5-10	10	0.0	<5	<50	<250	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--	--
	5/23/22	MW-5-15	15	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:	Analysis Methods: NWTPH-Gx & Dx, EPA 5035A/8260C. See Laboratory reports for specifics.
(1)	Summary Table of most common analytes. See Laboratory Analytical Report for full list of analyzed compounds.
(2)	Analytes not listed were not detected above laboratory reporting limits.
*	GRO Cleanup Level: 30 when benzene is present at the Site, 100 when benzene is not present.
†	Method (A or B) Cleanup Level has not been established for this constituent.
--	Not Analyzed / Unknown
<0.02	Not Detected, concentration less than the laboratory method detection limit.
12	Black Bold Number(s) Indicates Contaminant Detected.
33	Red Bold Number(s) Indicates Concentration Exceeds MTCA Method A Cleanup Level.

Table 1a
Soil Laboratory Analytical Results: Carcinogenic Polycyclic Aromatic Hydrocarbons
Auburn Volkswagen
3109 Auburn Way North, Auburn, WA
Project No. BE-0107-D

Boring / Location Identifier	Sample Date	Sample Name	Benz(a)-anthracene	Chrysene	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Benzo(k)-fluoranthene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene
		Method A Cleanup Levels	†	†	0.1	†	†	†	†
		Method B Cleanup Levels (Cancer)	†	†	0.19	†	†	†	†
B-1	4/24/22	B-1-5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	4/24/22	B-1-10	--	--	--	--	--	--	--
	4/24/22	B-1-13	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	4/24/22	B-1-15	--	--	--	--	--	--	--
B-2	4/24/22	B-2-5	**2.1**	**2.0**	**2.60**	**2.3**	**0.72**	**0.94**	**0.17**
	4/24/22	B-2-10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	4/24/22	B-2-13	--	--	--	--	--	--	--
	4/24/22	B-2-15	--	--	--	--	--	--	--
B-3	4/24/22	B-3-5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	4/24/22	B-3-10	--	--	--	--	--	--	--
	4/24/22	B-3-12	--	--	--	--	--	--	--
	4/24/22	B-3-15	--	--	--	--	--	--	--
B-4	4/24/22	B-4-5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	4/24/22	B-4-10	--	--	--	--	--	--	--
	4/24/22	B-4-14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	4/24/22	B-4-15	--	--	--	--	--	--	--
B-5	4/24/22	B-5-5	--	--	--	--	--	--	--
	4/24/22	B-5-10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	4/24/22	B-5-12	--	--	--	--	--	--	--
	4/24/22	B-5-15	--	--	--	--	--	--	--
B-6	4/24/22	B-6-5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	4/24/22	B-6-10	--	--	--	--	--	--	--
	4/24/22	B-6-13	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	4/24/22	B-6-15	--	--	--	--	--	--	--

BLUESTONE ENVIRONMENTAL, NW

Table 1a
Soil Laboratory Analytical Results: Carcinogenic Polycyclic Aromatic Hydrocarbons
Auburn Volkswagen
3109 Auburn Way North, Auburn, WA
Project No. BE-0107-D

Boring / Location Identifier	Sample Date	Sample Name	Benz(a)-anthracene	Chrysene	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Benzo(k)-fluoranthene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene
		Method A Cleanup Levels	†	†	0.1	†	†	†	†
		Method B Cleanup Levels (Cancer)	†	†	0.19	†	†	†	†
B-7	7/20/22	B-7-3	--	--	--	--	--	--	--
	7/20/22	B-7-5	--	--	--	--	--	--	--
	7/20/22	B-7-8	--	--	--	--	--	--	--
			--	--	--	--	--	--	--
B-8	7/20/22	B-8-3	--	--	--	--	--	--	--
	7/20/22	B-8-5	--	--	--	--	--	--	--
	7/20/22	B-8-8	--	--	--	--	--	--	--
B-9	7/20/22	B-9-3	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	7/20/22	B-9-5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	7/20/22	B-9-8	--	--	--	--	--	--	--
B-10	7/20/22	B-10-3	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	7/20/22	B-10-5	--	--	--	--	--	--	--
	7/20/22	B-10-6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	7/20/22	B-10-8	--	--	--	--	--	--	--
B-11	7/20/22	B-11-3	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	7/20/22	B-11-5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	7/20/22	B-11-8	--	--	--	--	--	--	--
B-12	7/20/22	B-12-3	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	7/20/22	B-12-5	**0.068**	**0.069**	**0.090**	**0.075**	**0.027**	**0.033**	<0.01
	7/20/22	B-12-8	--	--	--	--	--	--	--
B-13	7/20/22	B-13-3	--	--	--	--	--	--	--
	7/20/22	B-13-5	--	--	--	--	--	--	--
	7/20/22	B-13-8	--	--	--	--	--	--	--
B-14	7/20/22	B-14-3	--	--	--	--	--	--	--
	7/20/22	B-14-5	--	--	--	--	--	--	--
	7/20/22	B-14-8	--	--	--	--	--	--	--

Table 1a
Soil Laboratory Analytical Results: Carcinogenic Polycyclic Aromatic Hydrocarbons
Auburn Volkswagen
3109 Auburn Way North, Auburn, WA
Project No. BE-0107-D

Boring / Location Identifier	Sample Date	Sample Name	Benz(a)-anthracene	Chrysene	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Benzo(k)-fluoranthene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene
Method A Cleanup Levels			†	†	**0.1**	†	†	†	†
Method B Cleanup Levels (Cancer)			†	†	**0.19**	†	†	†	†
MW-2	5/23/22	MW-2-5	--	--	--	--	--	--	--
	5/23/22	MW-2-8	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	5/23/22	MW-2-12	--	--	--	--	--	--	--
	5/23/22	MW-2-15	--	--	--	--	--	--	--
MW-3	5/23/22	MW-3-3	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	5/23/22	MW-3-5	--	--	--	--	--	--	--
	5/23/22	MW-3-10	--	--	--	--	--	--	--
	5/23/22	MW-3-15	--	--	--	--	--	--	--
MW-4	5/23/22	MW-4-3	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	5/23/22	MW-4-5	--	--	--	--	--	--	--
	5/23/22	MW-4-10	--	--	--	--	--	--	--
	5/23/22	MW-4-15	--	--	--	--	--	--	--
MW-5	5/23/22	MW-5-3	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	5/23/22	MW-5-5	--	--	--	--	--	--	--
	5/23/22	MW-5-10	--	--	--	--	--	--	--
	5/23/22	MW-5-15	--	--	--	--	--	--	--

Notes:	Analysis Methods: See Laboratory reports for specifics analysis methods.
†	Method (A or B) Cleanup Level has not been established for this constituent.
--	Not Analyzed / Unknown
<0.02	Not Detected, concentration less than the laboratory method detection limit.
12	Black Bold Number(s) Indicates Contaminant Detected.
33	Red Bold Number(s) Indicates Concentration Exceeds MTCA Method A Cleanup Level.

Table 2
Groundwater Laboratory Analytical Results: Petroleum, PAHs, Metals
Auburn Volkswagen
3109 Auburn Way North, Auburn, WA
Project No. BE-0107-D

Well / Location Identifier	TOC Elevation	Depth to Water	Groundwater Elevation (1)	Sample Date	Sample Name	Gasoline Range Organics	TPH Diesel (3) (C_{10}-C_{36})	TPH Oil (C_{25}-C_{36})	Benzene	Toluene	Ethyl-benzene	Xylenes	Other Volatile Organic Compounds & Fuel Additives	Phenanthrene	Other Semivolatile Compounds/ Polycyclic Aromatic Hydrocarbons	Arsenic	Cadmium	Chromium	Mercury	Lead
						GRO	**DRO**	**ORO**	**VOCs**					**PAHs**		**Metals**				
						Laboratory Units Reported in µg/L														
					Method A Cleanup Levels	**800/1,000***	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**various****	**†**	**various****	**5**	**5**	**50**	**2**	**15**
					Method B Cleanup Levels (Cancer)	**†**	**†**	**†**	**0.8**	**†**	**†**	**†**	**various****	**†**	**various****	**0.058**	**†**	**†**	**†**	**†**
B-1	--	--	--	4/24/22	B-1-W	<100	**88x**	<200	<0.35	<1	<1	<2	(2)	<0.04	(2)	**70.2**	<1	**5.64**	<1	**1.37**
B-2	--	--	--	4/24/22	B-2-W	<100	**180x**	<200	<0.35	<1	<1	<2	(2)	<0.04	(2)	**13.9**	<1	**7.57**	<1	**1.82**
B-4	--	--	--	4/24/22	B-4-W	<100	**2,500x**	**370x**	<0.35	<1	<1	<2	(2)	**0.092**	(2)	**104**	<1	**77.7**	<1	**9.27**
B-5	--	--	--	4/24/22	B-5-W	<100	**240x**	<250	<0.35	<1	<1	<2	(2)	<0.04	(2)	**18.1**	<1	**22.9**	<1	**3.27**
B-6	--	--	--	4/24/22	B-6-W	<100	**110x**	<250	<0.35	<1	<1	<2	(2)	<0.04	(2)	**29.2**	<1	**7.02**	<1	**1.27**
MW-1	57.16	8.17	48.99	5/26/22	MW-1-W	<100	**420x**	--	<0.35	<1	<1	<2	(2)	<0.02	(2)	**11.8**	<1	<5	<1	<1
		9.42	47.74	7/26/22	MW-1-W	--	**960x**	--	--	--	--	--	--	--	--	**20.0 (T)/17.8 (D)**	--	--	--	--
MW-2	56.41	7.44	48.97	5/26/22	MW-2-W	<100	**300x**	--	<0.35	<1	<1	<2	(2)	<0.02	(2)	**4.9**	<1	<5	<1	<1
		9.85	46.56	7/26/22	MW-2-W	--	**940x**	--	--	--	--	--	--	--	--	**58.1 (T)/55.6 (D)**	--	--	--	--
MW-3	57.08	8.10	48.98	5/26/22	MW-3-W	<100	**470x**	--	<0.35	<1	<1	<2	(2)	<0.02	(2)	**3.33**	<1	**2.19**	<1	<1
		9.38	47.70	7/26/22	MW-3-W	--	**670x**	--								**14.3 (T)/16.2 (D)**	--	--	--	--
MW-4	57.18	8.20	48.98	5/26/22	MW-4-W	<100	**290x**	--	<0.35	<1	<1	<2	(2)	<0.02	(2)	**7.15**	<1	<5	<1	<1
				5/26/22	MW-Dup	<100	**330x**	--	<0.35	<1	<1	<2	(2)	<0.02	(2)	**6.96**	<1	<5	<1	<1
		9.48	47.70	7/26/22	MW-4-W	--	**550x**	--	--	--	--	--	--	--	--	**11.4 (T)/11.1 (D)**	--	--	--	--
				7/26/22	MW-Dup	--	**510x**	--	--	--	--	--	--	--	--	**11.5 (T)/11.9 (D)**	--	--	--	--
MW-5	57.14	8.12	49.02	5/26/22	MW-5-W	<100	**310x**	--	<0.35	<1	<1	<2	(2)	<0.02	(2)	**53.3**	<1	<5	<1	<1
		9.36	47.78	7/26/22	MW-5-W	--	**300x**	--	--	--	--	--	--	--	--	**35.4 (T)/34.5 (D)**	--	--	--	--

Notes:	Analysis Methods: NWTPH-Gx & Dx, EPA 8260D/8270E/6020B. See Laboratory reports for specifics.
(1)	Presented Elevations are based on elevation data based on others work, i.e., work performed on the south adjoining property, 3025 Auburn Way North (Auburn Subaru) and Bluestone Site Measurements.
(2)	Analytes not listed were not detected above laboratory reporting limits. See laboratory report for details.
(3)	Chromatographs of samples quantify constituent as one product using NWTPH-HCID/Dx methods. See report Appendix G For chromatographs.
*	30 when benzene is present at the Site, 100 when benzene is not present.
**	Reported concentrations of analytes for listed method analysis were not detected at laboratory reporting limits except as noted in table. See laboratory report for details.
†	Method (A or B) Cleanup Level has not been establis Reported concentrations of analytes for listed method analysis were not detected at laboratory reporting limits except as noted in table. See laboratory report for details.
--	Not Analyzed / Unknown
<0.02	Not Detected, concentration less than the laboratory Not Analyzed / Unknown
12	Black Bold Nun Black Bold Nun Black Bold Number(s) Indicates Contaminant Detected.
33	Red Bold Numb Red Bold Numb Red Bold Number(s) Indicates Concentration Exceeds MTCA Method A Cleanup Level.
Dup	Duplicate Sample for QA/QC.
x	The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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Table 3
Well Construction & Groundwater Depths
Auburn Volkswagen
3109 Auburn Way North, Auburn, WA
Project No. BE-0107-D

Well Identifier	Well Installation Date	Well Construction Material	Monument / Surface Elevation*	Top of Casing Elevation *	Length of Screen (ft.)	Bottom of Well	Well Diameter (in.)	Measurement Date	Depth to Water	Calculated Water Elevation
MW-1	5/23/22	PVC	57.61	57.16	10	16.2	2	5/26/2022 7/26/2022 8/11/2022	8.17 9.42 9.88	48.99 47.74 47.28
MW-2	5/23/22	PVC	56.91	56.41	10	17	2	5/26/2022 7/26/2022 8/11/2022	7.44 9.85 9.14	48.97 46.56 47.27
MW-3	5/23/22	PVC	57.48	57.08	10	17	2	5/26/2022 7/26/2022 8/11/2022	8.10 9.38 9.83	48.98 47.70 47.25
MW-4	5/23/22	PVC	57.56	57.18	10	17	2	5/26/2022 7/26/2022 8/11/2022	8.20 9.48 9.89	48.98 47.70 47.29
MW-5	5/23/22	PVC	57.55	57.14	10	17	2	5/26/2022 7/26/2022 8/11/2022	8.12 9.36 9.85	49.02 47.78 47.29

Notes:

* Presented Elevations are based on elevation data based on others work, i.e., work performed on the south adjoining property, 3025 Auburn Way North (Auburn Subaru) and Bluestone Site Measurements.

Table 4
Groundwater Parameters (1)
Auburn Volkswagen
3109 Auburn Way North
Project No. BE-0107-D

Well Identifier	Measurement Date	Temperature (ºC)	Conductivity (µS/cm)	Dissolved Oxygen (%)	Dissolved Oxygen (mg/L)	pH	Oxidation Reduction Potential
MW-1	5/26/22	15.37	997	22.2	2.21	7.46	-106.1
	7/26/22	15.54	1094	11.1	1.10	6.76	-129.2
MW-2	5/26/22	14.12	698	100	10.24	6.62	-86.3
	7/26/22	13.87	731	22.9	2.30	6.74	-136.8
MW-3	5/26/22	16.70	1,259	385	3.68	6.84	-96.2
	7/26/22	15.70	1,235	5.7	0.56	5.71	-136.8
MW-4	5/26/22	16.65	665	32.1	3.12	6.74	-72.6
	7/26/22	15.63	796	5.6	0.55	6.66	-97.6
MW-5	5/26/22	16.80	896	50.1	4.84	6.73	-112.6
	7/26/22	15.72	620	7.8	0.76	6.71	-123.7

Notes: (1) Parameters at time of sample collection.

Figures

BLUESTONE
ENVIRONMENTAL, NW

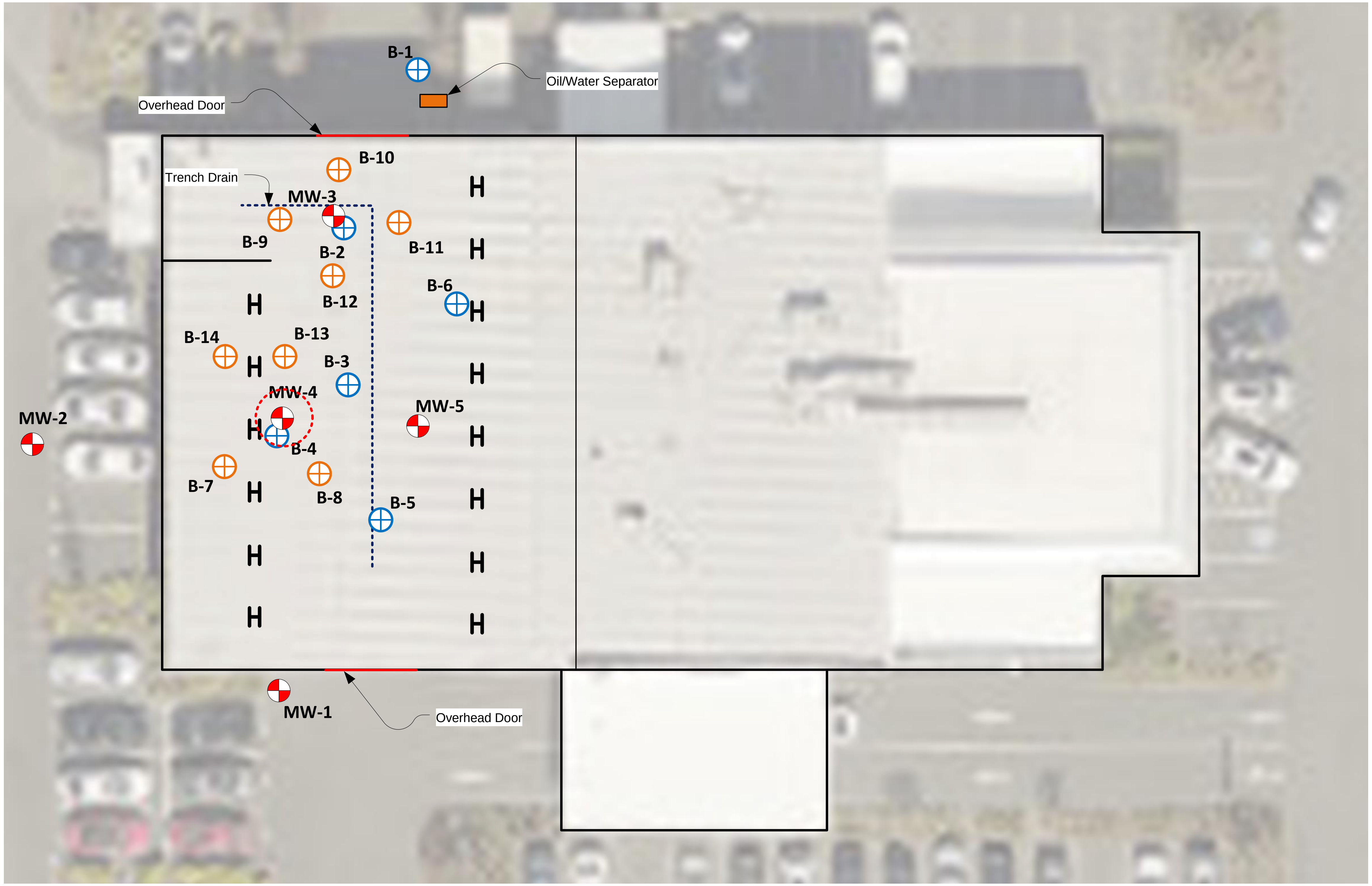
Drawing References: Getty Image, King County iMaps

Site Location Maps

Auburn Dealership
3109 Auburn Way North
Auburn, WA

Figure
1

Project No. BE-0107-D F1.vsdx



Project No. BE-0107-D F2.vsdx

General Legend

⊕ April 24, 2022 Soil Boring Location

⊕ July 20,2022 Soil Boring Location

◐ Groundwater Monitoring Well Location (May 23, 2022)

H Underground Hoist Location

┄ Trench Drain in Shop Floor

◌ Estimated Area of ORO Contamination in Soil

Site Diagram, Features, Exploration Locations, and ORO Contamination in Soil

Auburn VW
3109 Auburn Way North, Auburn, WA

Figure and notations are in color. Black and white copies may not be suitable for use.

Figure
2

N

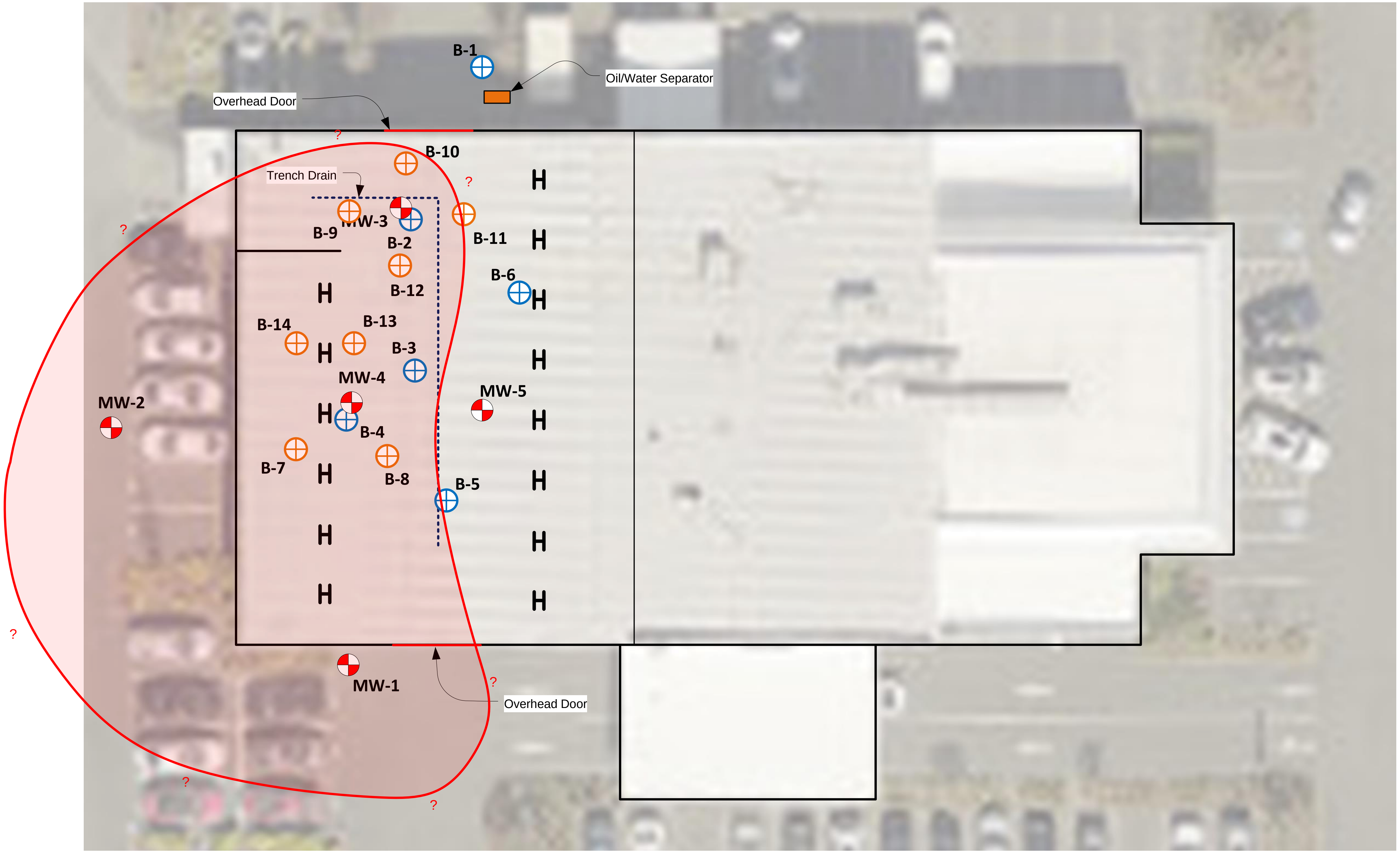
Scale: 1" = 20'

0 ft. 12 ft. 20 ft. 40 ft.

BLUESTONE
ENVIRONMENTAL, NW

Drawing Date: 8/10/2022

Drawing References: King County iMaps, Bluestone Measurements



General Legend

⊕ April 24, 2022 Soil Boring Location

⊕ July 20,2022 Soil Boring Location

● Groundwater Monitoring Well Location (May 23, 2022)

H Underground Hoist Location

Trench Drain in Shop Floor

Estimated Area of DRO Contamination in Groundwater

DRO Iso-concentrations in Groundwater

Auburn VW
3109 Auburn Way North, Auburn, WA

Figure and notations are in color. Black and white copies may not be suitable for use.

Figure 3

N

Scale: 1" = 20'

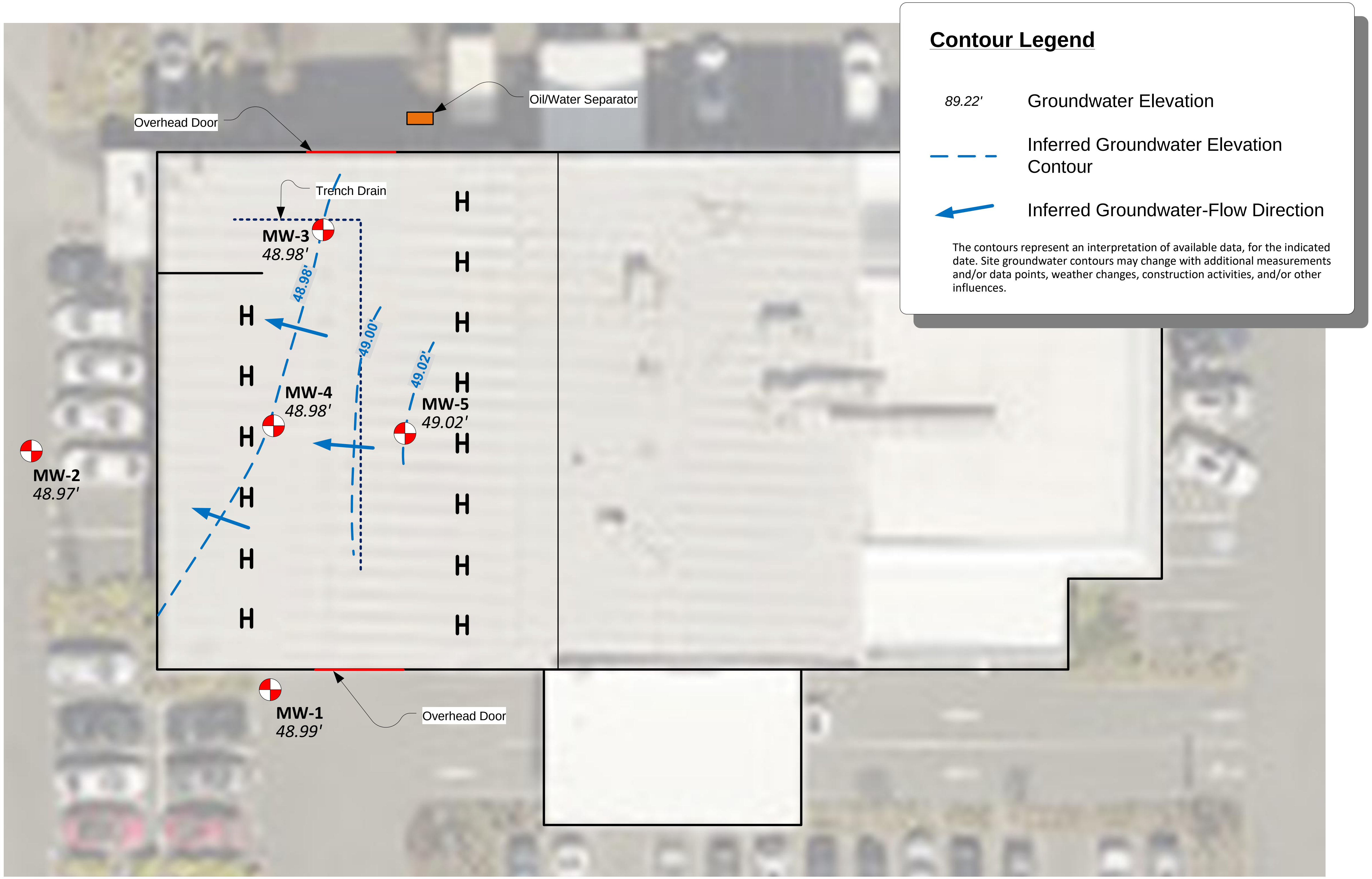
0 ft. 12 ft. 20 ft. 40 ft.

BLUESTONE ENVIRONMENTAL, NW

Project No. BE-0107-D F3 GW.vsdx

Drawing Date: 8/9/2022

Drawing References: King County iMaps, Bluestone Measurements



The contours represent an interpretation of available data, for the indicated date. Site groundwater contours may change with additional measurements and/or data points, weather changes, construction activities, and/or other influences.

General Legend

⊕	Soil Boring Location	⁄	Groundwater Elevation Contour Line
●	Groundwater Monitoring Well Location	H	Underground Hoist Location
▭	Building Outline		

Groundwater Elevation Contour Map (5/26/2022)

Auburn VW
3109 Auburn Way North, Auburn, WA

Figure and notations are in color. Black and white copies may not be suitable for use.

Figure
4a

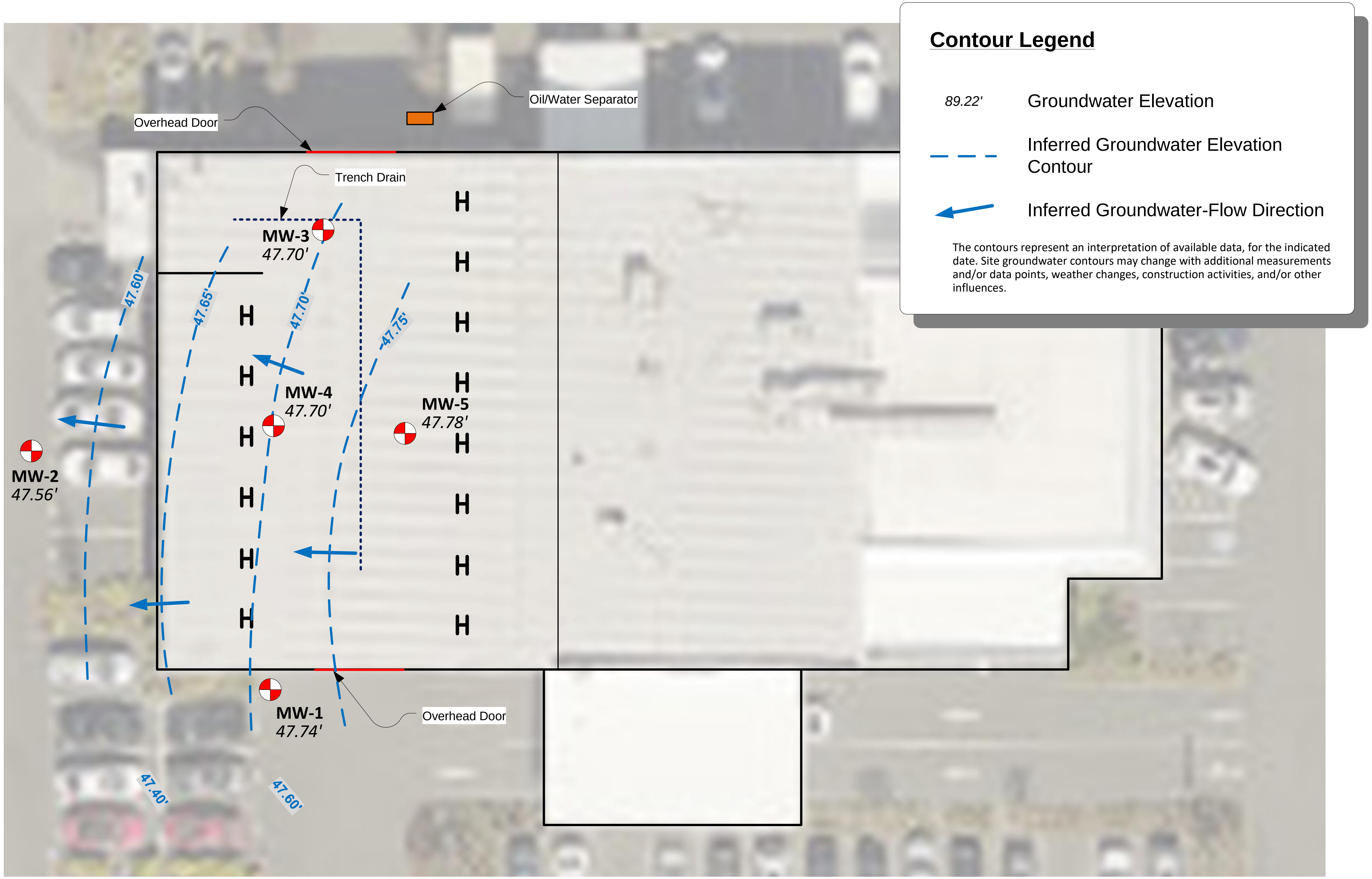
N
Scale: 1" = 20'
0 ft. 12 ft. 20 ft. 40 ft.

BLUESTONE
ENVIRONMENTAL, NW

Project No. BE-0107-D F4a.vsdx

Drawing Date: 8/12/2022

Drawing References: King County iMaps, Bluestone Measurements



Contour Legend

89.22'	Groundwater Elevation
– – –	Inferred Groundwater Elevation Contour
←	Inferred Groundwater-Flow Direction

The contours represent an interpretation of available data, for the indicated date. Site groundwater contours may change with additional measurements and/or data points, weather changes, construction activities, and/or other influences.

General Legend

⊕	Soil Boring Location
●	Groundwater Monitoring Well Location
/	Groundwater Elevation Contour Line
H	Underground Hoist Location
▭	Building Outline

Groundwater Elevation Contour Map (7/26/2022)

Auburn VW
3109 Auburn Way North, Auburn, WA

Figure and notations are in color. Black and white copies may not be suitable for use.

Figure
4b

N

Scale: 1" = 20'

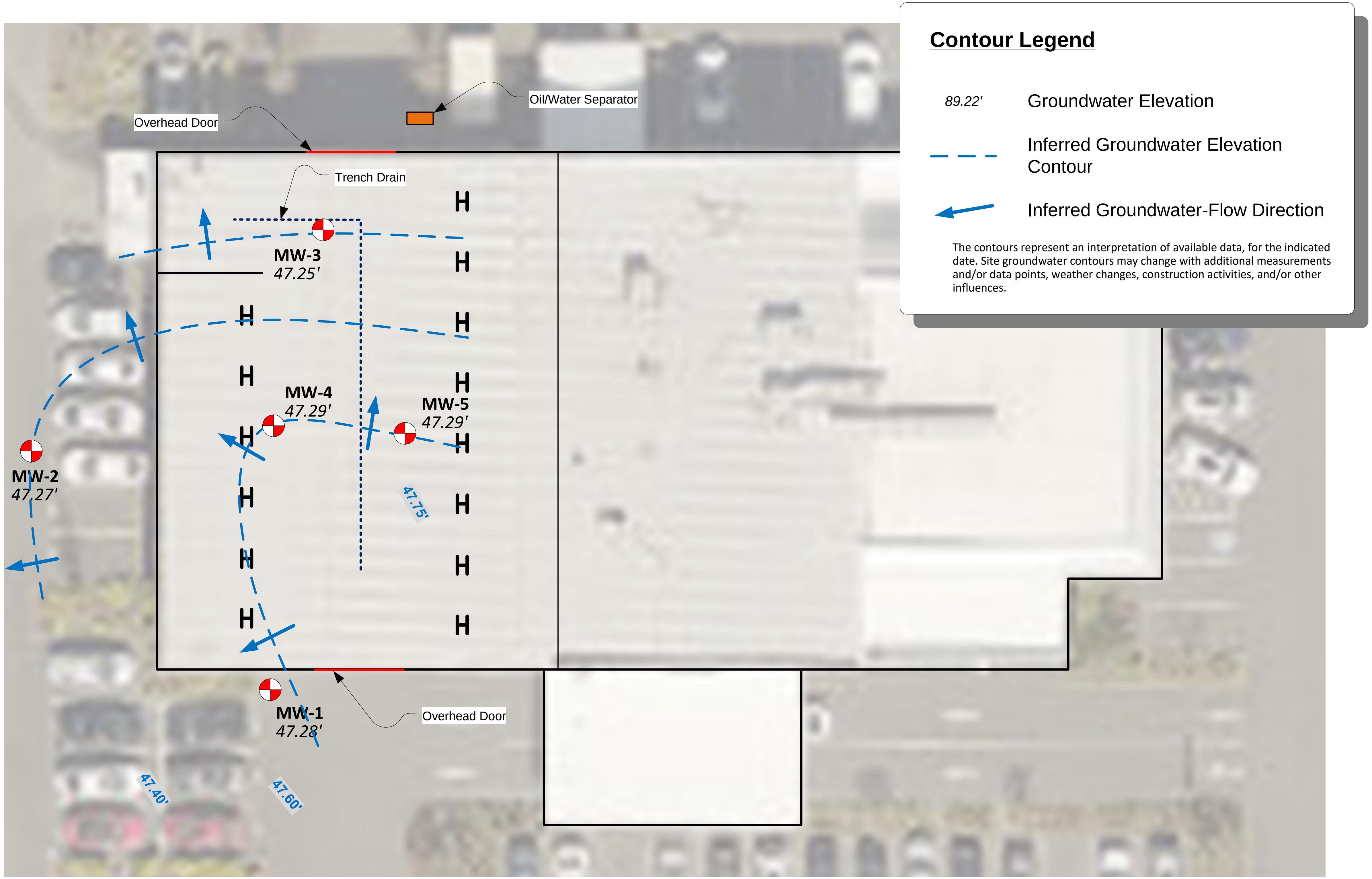
0 ft. 12 ft. 20 ft. 40 ft.

BLUESTONE
ENVIRONMENTAL, NW

Project No. BE-0107-D F4b.vsdx

Drawing Date: 8/12/2022

Drawing References: King County iMaps, Bluestone Measurements



Contour Legend

89.22'	Groundwater Elevation
– – –	Inferred Groundwater Elevation Contour
←	Inferred Groundwater-Flow Direction

The contours represent an interpretation of available data, for the indicated date. Site groundwater contours may change with additional measurements and/or data points, weather changes, construction activities, and/or other influences.

General Legend

⊕	Soil Boring Location	– –	Groundwater Elevation Contour Line
◐	Groundwater Monitoring Well Location	H	Underground Hoist Location
▭	Building Outline		

Groundwater Elevation Contour Map (8/11/2022)

Auburn VW
3109 Auburn Way North, Auburn, WA

Figure and notations are in color. Black and white copies may not be suitable for use.

Figure
4c

N
Scale: 1" = 20'
0 ft. 12 ft. 20 ft. 40 ft.

BLUESTONE
ENVIRONMENTAL, NW

Drawing References: King County iMaps, Bluestone Measurements

Project No. BE-0107-D F4c.vsdx

Drawing Date: 8/12/2022

Appendices

Appendix A

g-logics

April 12, 2018
G-Logics Project Number 01-1140-E

M&M Ventures, LLC	R&E Investments, LLC
Mr. Mike Scarff	Mr. Roger Vermazen
33 Knights Lane	16932 SE 354th Street
Friday Harbor, WA 98250	Auburn, WA 98092

Subject: Well Installation and Groundwater Sampling
Facility/Site No. 57361549
PTAP Project No. PNW030
Auburn Way Properties
3025 and 3109 Auburn Way N
Auburn, WA 98002

Dear Mr. Scarff and Mr. Vermazen:

G-Logics was authorized by M&M Ventures (recent 3025 property owner) and R&E Investments (recent 3109 property owner) to install and sample groundwater monitoring wells at the Site (Figure 1). This work was a collaborative effort to verify the successful removal of petroleum contaminants at the Site in order to request a No Further Action (NFA) Opinion from the State of Washington’s Pollution Liability Insurance Agency (PLIA).

G-Logics performed this work as described in our workplan date February 13, 2018 which was approved in a letter from PLIA dated February 21, 2018. Pervious G-Logics site-exploration and remediation work completed at the Site is documented in our *Additional Soil and Groundwater Sampling* report dated August 13, 2017 and our *Environmental Media Management Report* dated December 4, 2017.

G-Logics, Inc.
40 2nd Avenue SE
Issaquah, WA 98027
T: 425-391-6874
F: 425-313-3074

1.0 Site Background

The Site is composed of two properties, 3025 and 3109 Auburn Way N. The 3025 property is identified as King County tax parcel number 0004000039. The 3109 property is identified as King County tax parcel number 0004000041.

As summarized in the G-Logics Phase I report dated July 18, 2017, this area was primarily agricultural land prior to the 1970s. A review of aerial photographs appears to show row crops throughout the area, with occasional small orchards.

Since at least the early 1970s, an automobile dealership and a service garage historically occupied the northern portion of the 3025 property and the southern portion of the 3109 property (adjacent property to the north). A former 550-gallon used-oil underground storage tank (UST) was removed from west side of the former dealership building located on the 3025 property.

1.1 Exploration Background

Stemen Environmental, Inc. (SEI) conducted a Phase II exploration in this area (report dated December 20, 2012). Soil and groundwater samples were collected on both the 3025 and the 3109 properties. None of the samples that SEI analyzed from the 3025 property contained concentrations of gasoline (GRO), diesel (DRO), oil-range hydrocarbons (ORO), or volatile organic compounds (VOCs) at concentrations above MTCA Method A cleanup levels. Exploration locations are shown on Figure 2. Figure 2a presents the same information, but the background survey mapping has been removed for readability.

In the SEI Phase II exploration, GRO and ORO hydrocarbons were found exceeding MTCA Method A cleanup levels in soils along the southern boundary of the 3109 property. SEI conducted additional sampling work in June 2017 (see Figures 2 and 2a). ORO in soil was detected but at concentrations below MTCA Method A cleanup levels. None of the analyzed groundwater samples contained concentrations of GRO, DRO, ORO, or VOCs. However one groundwater sample contained lead at the MTCA Method A cleanup level (15 ug/L).

To provide additional data for the former UST area, G-Logics conducted soil and groundwater sampling in July 2017. On the 3025 property, the ORO hydrocarbons were found exceeding the MTCA Method A cleanup level in soils along the northern property boundary. DRO and ORO also were found above MTCA Method A cleanup levels in two grab-groundwater samples collected in this area. Total and dissolved concentrations of arsenic also were reported above the MTCA Method A cleanup level in two of the four grab-groundwater samples and in one monitoring well-sample (see G-Logics *Additional Soil and Groundwater Sampling* report dated August 13, 2017 for more information).

The arsenic is likely due to area-wide sources, based on location and lack of relevant operations and activities on the properties. This area is located within the Tacoma Smelter plume. Other off-property sources may include former-agricultural practices in the area, and/or volcanic deposits from Mount Rainier. Specifically, the Osceola Mudflow buried a large portion this area with volcanic material, originating during eruptions approximately 5,600 years ago.

To address the petroleum-contamination, G-Logics recommended a remedial excavation. Mr. Vermazen (3109 property owner) agreed that if petroleum-contaminated soil was found to extend onto his property, then those contaminated soils also should be removed. Accordingly, the remedial excavation planned for the 3025 property extended to the north onto the 3109 property.

1.2 Remediation Background

In November 2017, petroleum-contaminated media (soil and groundwater) was removed from an area spanning the property line. The work consisted of the removal and disposal of approximately 384 tons of petroleum-contaminated soil and approximately 2,600 gallons of water (rain and groundwater). Analyzed confirmation samples indicated that all petroleum-contaminated soils above MTCA Method A cleanup levels were successfully removed from this area. After the remedial excavation had been completed, 200 pounds of an oxygen-release compound (ORC Advanced) was added to groundwater in the excavation, as well as the backfill material near the groundwater interface (see G-Logics *Environmental Media Management Report* dated December 4, 2017 for more information).

1.3 Regulatory Background

The law that guides the remediation process at sites located within Washington State is the Model Toxics Control Act (MTCA). The regulations implementing MTCA are located in the Washington Administrative Code (WAC), Chapter 173-340. This regulation is administered by the Washington Department of Ecology (Ecology).

The property owners performed an independent remedial action for this site, in accordance with the Ecology guidance. Such remedial actions are specifically allowed by MTCA, also encouraged by Ecology and PLIA.

1.4 PLIA Background

As of January 2, 2018 the Pollution Liability Insurance Agency (PLIA) has authority to respond and deliver opinions on qualifying petroleum-contaminated sites throughout Washington. This ability is called the Petroleum Technical Assistance Program (PTAP), as established under RCW 70.149.040(9).

After the intake meeting with PLIA on January 31, 2018, the Site was accepted into the PTAP program. PLIA offered that the two properties (3025 and 3109) be considered as one Site. PLIA requested additional sampling be conducted on both properties to address potential data gaps and to document that any residual contamination did not migrate beyond the Site boundaries. PLIA also requested that the potential for vapor intrusion in nearby buildings also be assessed. The information requested by PLIA is presented below.

2.0 Soil Sampling and Monitoring Well Installation

On March 12th and 13th, 2018, hollow-stem auger borings were drilled and completed as groundwater monitoring wells (MW-02, MW-03, MW-04, MW-05, and MW-06). One soil boring also was drilled (GLB-10). Boring locations (Figures 2 and 2a) were selected based on the findings of the previously completed G-Logics site-exploration and remediation work (Figure 3). This work was conducted to address potential data-gap concerns expressed by PLIA during the intake meeting. Several borings met drilling refusal, these locations also are shown on Figures 2 and 2a.

The completed borings were advanced to depths ranging from approximately 11.5 to 15 feet below ground surface. These borings generally encountered a structural-fill material (believed to be placed sometime between the mid 70's and mid 80's) from the surface to approximately a depth of 4 to 5 feet. The fill consisted of a silty sand and gravel mix. Fine-grain native soils were encountered below the fill, generally consisting of silt with clay to a depth of 8 to 9 feet, followed by silty, fine grain sand to the bottom of the borings.

During drilling, soil samples were collected for soil identification and chemical analysis. A photoionization detector (PID) was used to screen for volatile-organic compounds (VOCs) in the collected soil samples. The results, measured in parts per million by volume (ppmv), were noted on the soil data table (Table 1) and boring logs. Collected soils samples were submitted to the analytical laboratory (Fremont Analytical, Seattle, Washington). Selected soil samples from each boring were analyzed for diesel-range organics (DRO), oil-range organics (ORO), and arsenic.

A description of our field exploration methods is presented in Appendix A. The boring logs are presented in Appendix B. Each log presents soil types and descriptions, field-screening observations, PID readings, and a schematic of the monitoring well installed.

2.1 Analytical Results, Soil Samples

In the analyzed soil samples, ORO was detected in GL-MW-2-2.5 and GL-MW-6-8, but at concentrations below MTCA Method A Cleanup Levels. DRO was not detected in any of the analyzed soil samples. Arsenic was detected in all of the soil samples analyzed but at concentrations below MTCA Method A Cleanup Levels. Results of these analyses are presented in Table 1 of this report. Soil analytical laboratory reports and completed chain-of-custody forms, from this recent effort, are attached as Appendix C.

2.2 Quality Assurance/Quality Control Findings

Quality Assurance/Quality Control (QA/QC) included generally accepted procedures for sample collection, storage, tracking, documentation, and analysis. All sampling equipment was washed with a liquinox wash and distilled water rinse before the collection of the samples. All samples were labeled with a sample number, date, time, and sampler name, and were stored in an ice chest containing frozen blue ice. Appropriate chain-of-custody documentation was completed.

Laboratory duplicate samples were analyzed for data repeatability. The detected concentrations were within acceptable limits for laboratory-repeatability information. The laboratory also conducted matrix spike, matrix-spike duplicate, and method blank analyses. Laboratory QA/QC information is included (with the laboratory report) in Appendix C.

3.0 Groundwater Sampling

On March 20th, 2018, six groundwater-monitoring wells (MW-1 through MW-6, Figures 2 and 2a) were sampled to obtain information regarding groundwater contaminants. Seven groundwater samples were collected (including a field duplicate) from the six wells. Collected samples from each well were submitted to the analytical laboratory (Fremont Analytical). These seven water samples were analyzed for DRO, ORO, and arsenic (total and dissolved).

3.1 Analytical Results, Groundwater Samples

In the analyzed samples, DRO and ORO were detected in MW-1, MW-4, and MW-6. ORO was also detected in MW-2. All detected petroleum concentrations were below MTCA Method A Cleanup Levels. Total arsenic was found above MTCA Method A Cleanup Levels in all wells except GL-MW-5. Dissolved arsenic was below MTCA Method A Cleanup Levels in all wells except GL-MW-2 and GL-MW-4. The highest dissolved arsenic concentration was 14.1 ug/L in GL-MW-2.

Results of these analyses are presented in Table 2 of this report. Appendix A presents field-exploration methods, while Appendix C includes the laboratory reports and chain-of-custody forms.

3.2 Quality Assurance/Quality Control Findings

Laboratory duplicate samples, as well as one blind-duplicate groundwater sample (MW-1), were analyzed for data repeatability. The detected concentrations were within acceptable limits for laboratory-repeatability information. The laboratory also conducted matrix spike, matrix-spike duplicate, and method blank analyses. Laboratory QA/QC information is included (with the laboratory report) in Appendix C.

4.0 Elevation Survey- Monitoring Wells

The elevations of the well casings (five new wells and one existing well) were surveyed by G-Logics. The survey was based on a backsight shot to the concrete floor at the north entrance of the auto shop. A previous survey by Terrane, dated 8/3/2017, identified the floor elevation at this location to be 57.7’.

5.0 Groundwater-Depth Measurement Findings

On March 14th, 2018, groundwater depths were measured in the six monitoring wells, see Table 3. Depth measurements were made from the top of the PVC well casing, prior to well development. Groundwater was found at depths ranging from 6.19 to 8.11 feet below top of PVC casing. Measured groundwater elevations for these wells have been plotted on Figure 4. The plotted groundwater elevations indicate groundwater flow toward the northeast, with a very flat gradient.

6.0 Initial Petroleum Vapor-Intrusion Assessment

Given the presence of residual petroleum contaminants at the Site, G-Logics has performed an initial petroleum vapor-intrusion (PVI) assessment. For this assessment, we followed the Ecology vapor intrusion guidance documents: *Guidance for Evaluating Soil Vapor Intrusion in Washington State*, dated October 2009, revised February 2016, and the *Implementation Memorandum No. 18*, dated January 10, 2018. The PVI assessment is further discussed below.

6.1 PVI Exposure Pathways

At sites with volatile contaminants, contaminated soil-vapor can present a potential risk to human health through inhalation. Specifically, an exposure pathway could exist for contaminants to migrate into indoor air via vapor intrusion. At this Site, the primary contaminant of concern is ORO, which contains little of the volatile contaminants associated with vapor-intrusion risks from a petroleum release (i.e., benzene and naphthalene). DRO also has been detected in soil and groundwater at the Site, but at low concentrations below applicable cleanup levels.

6.2 PVI Lateral-Inclusion Zones and Vertical Separation

Based on the PVI guidance documents published by the United States Environmental Protection Agency and Ecology (*Memorandum No. 14* dated March 2016), existing and/or future buildings located laterally and/or vertically within set distances of subsurface contamination may experience unacceptable vapor-intrusion impacts. The screening levels used for PVI assessments, for benzene and total petroleum hydrocarbons as presented in Appendix B of Ecology’s *Memorandum 14*, are presented in the following table.

Recommended Screening Levels for Assessing PVI

Media	Benzene	TPH
Soil (mg/kg)	≤ 10	≤ 100 (for unweathered GRO) ≤ 250 (for weathered GRO & DRO)
	> 10	> 100 (for unweathered GRO) > 250 (for weathered GRO & DRO)
Groundwater (µg/L)	≤ 5,000	≤ 30,000
	> 5,000	> 30,000

Further information regarding the lateral-inclusion zone and vertical separation distance is described below.

6.2.1 Lateral-Inclusion Zone

Based on the guidance documents, buildings that are laterally within 30 feet of subsurface petroleum contamination with soil and/or groundwater concentrations above screening levels (presented in the table above) may experience unacceptable vapor-intrusion impacts. This distance is referred to as the lateral-inclusion zone and is defined as the area surrounding a petroleum-contaminant source through which vapor-phase contamination might travel and intrude into buildings at unacceptable concentrations.

The lateral distance to subsurface contamination should first be identified to assess if a building or buildings are within the lateral-inclusion zone. If existing or planned buildings are not in the lateral inclusion zone (30 feet), then the initial PVI assessment process is complete. Specifically, a 30-foot horizontal separation distance from the edge of the contamination to a structure is likely to provide an adequate separation distance to exclude vapor-intrusion concerns.

At this Site, low-level concentrations of DRO and/or ORO have been detected in soil and groundwater samples collected within 30 lateral feet of a building footprint. Specifically, concentrations have been detected in samples collected from boring GLB-5 and wells GL-MW-1 and GL-MW-2. Because contaminants are present within the lateral-inclusion zone, the vertical separation distance was assessed.

6.2.2 Vertical Separation Distance

If a building or buildings are within the lateral-inclusion zone, the vertical separation distance between the contaminant source and the building foundation also should be considered to assess if unacceptable vapor-intrusion impacts may occur. The vertical separation distance represents the thickness of clean, biologically-active soil between the source of petroleum-hydrocarbon vapors and the deepest point of a structure.

For the vertical-separation distances, soil and groundwater must be assessed separately. As described in Ecology's *Memorandum No. 14*, the depths of contaminants in soil and/or groundwater are compared to the screening-level concentrations of benzene and/or total petroleum-hydrocarbons (TPH). The vertical separation distances for petroleum contaminants in soil and groundwater are shown in the following table.

Recommended Vertical-Separation Distances Between Contamination and Building Basement, Foundation, or Crawlspace

Media	Benzene	TPH	Vertical Separation
Soil (mg/kg)	≤ 10	≤ 100 (for unweathered GRO) ≤ 250 (for weathered GRO & DRO)	6’
	> 10	> 100 (for unweathered GRO) > 250 (for weathered GRO & DRO)	15’
Groundwater (µg/L)	≤ 5,000	≤ 30,000	6’
	> 5,000	> 30,000	15’

The depth to subsurface contamination should be assessed to identify if a building or buildings are within the specified vertical-separation distance. Dependent on contaminant concentrations, if the separation-distance criteria are met (as specified in the table above) based on the measured soil and groundwater concentrations for benzene and TPH, then the initial PVI assessment process is complete.

For this Site, benzene and DRO were not detected in soil samples collected within the lateral inclusion zone. ORO was detected in one soil samples collected at a depth of 2.5 feet from well GL-MW-2. Although this ORO concentration slightly exceeds the specified TPH concentration for DRO in the above table, ORO contains little volatile contaminants and does not pose a vapor-intrusion risk.

Groundwater at the Site is at a depth greater than six feet. In addition, all detectable concentrations of benzene, GRO, DRO, and ORO have been well below the screening levels presented in the table above. Therefore, based on the lateral and vertical PVI review conducted above, residual petroleum contaminants found in soil and groundwater do not pose a PVI risk to the nearby buildings.

7.0 Conclusions

Petroleum contaminated soils and groundwater were removed through the remedial excavation conducted in November 2017. Analyzed confirmation samples (Table 1, and Figure 3) collected during the excavation indicate that all petroleum-contaminated soils had been successfully removed from this area.

The additional sampling, conducted during this March 2018 exploration (Table 1, Table 2, Figures 2 and 2a), has confirmed that the petroleum contamination (associated with the former UST) has been successfully removed and did not migrate beyond the remedial-excavation boundaries. Additionally, a review of PVI risks also documents that vapor intrusion is not a concern, due to the low concentrations of residual petroleum contaminants and the low volatility of ORO.

With the completion of this work, M&M Ventures and R&E Investments have successfully addressed the petroleum-contaminated soils and groundwater water in this area of the two properties.

With respect to arsenic, historical review of the Site did not identify any commercial or industrial source of arsenic from prior activities or operations. The Site is within the Asarco area-wide smelter plume, and volcanic deposits from the Osceola mud flow are likely also present. Agricultural practices in the area may also have contributed to area-wide arsenic concentrations.

Notably, soil concentrations for arsenic generally increase at approximate depths of 5-8 feet (Table 1). These higher concentrations of arsenic at 5-8 feet bgs are associated with the native soils at the Site, which are located beneath the structural-fill materials. This information would indicate that arsenic would have been present at the property prior to placement of the structural-fill material and construction of the site buildings. Potential exposures to arsenic in the groundwater are very limited. Specifically, this area is covered with buildings or asphalt, prohibiting direct contact with the groundwater. Additionally, the shallow groundwater in this area likely would be of low quality and would yield insufficient quantities to be considered to be a viable source of drinking water. With these understandings, detected arsenic concentrations do not present any risk to human health or the environment, and therefore do not require further evaluation or remediation.

8.0 Recommendations

The completed work documents the successful remediation of the former UST area, demonstrates the lack of vapor-intrusion concerns, and identifies that arsenic is an area-wide issue with no presented risk. Based on the completed work, G-Logics recommends that PLIA provide a No Further Action opinion for the Site.

9.0 Limitations

The scope of work on this project was presented in our identified workplan and subsequently approved by M&M Ventures and R&E Investments. Please be aware our scope of work was limited to those items specifically identified in the workplan. Other activities not specifically included in the presented scope of work (in a workplan, correspondence, or this report) are excluded and are therefore not part of our services.

Land use, site conditions (both on-site and off-site), and other factors will change over time. Since site activities and regulations beyond our control could change at any time after the completion of this report, our observations, findings, and opinions can be considered valid only as of the date of the site sampling.

This report is prepared for the sole use of our client and reviewing regulatory agencies. The scope of services performed during this assessment may not be appropriate for the needs of other users. Re-use of this document or the findings, conclusions, or recommendations presented herein, are at the sole risk of said user(s). Any party other than our client who would like to use this report shall notify G-Logics of such intended use by executing the "Permission and Conditions for Use and Copying" contained in this document. Based on the intended use of the report, G-Logics may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements will release G-Logics from any liability resulting from the use of this report by any unauthorized party.

No warranty, either express or implied, is made.

10.0 Closing

We appreciate this opportunity to provide our services on this project. Please contact us at your convenience with any questions regarding our work or findings.

Sincerely,
G-Logics, Inc.

State of Washington
Hydrogeologist
2222
Licensed Geologist
RORY GALLOWAY

Rory Galloway

Karis Vandehey

Rory L. Galloway, LG, LHG
Principal

Karis Vandehey, LG, WSLWD
Staff Geologist

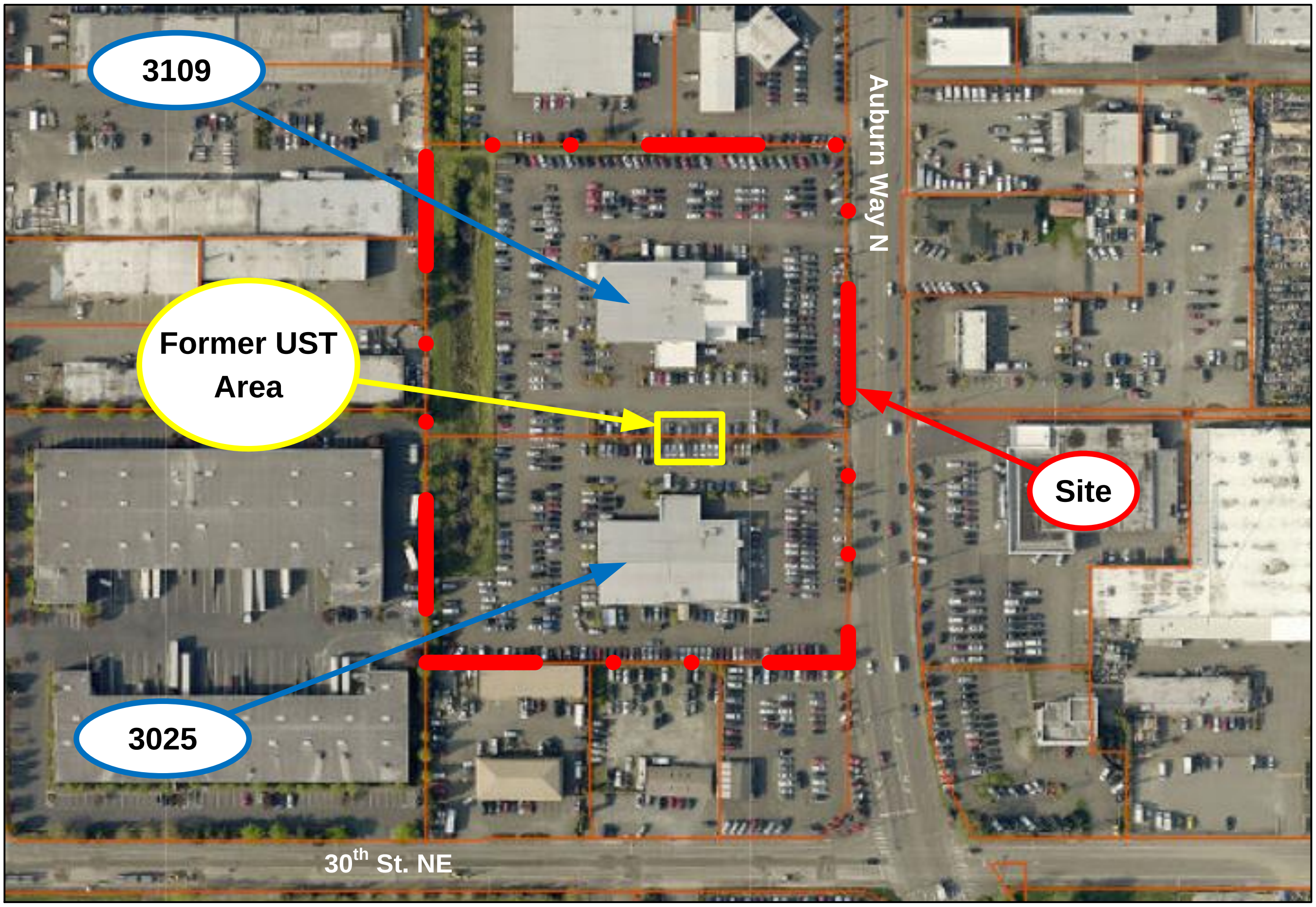
cc Greg Rairdon
Ken Lederman

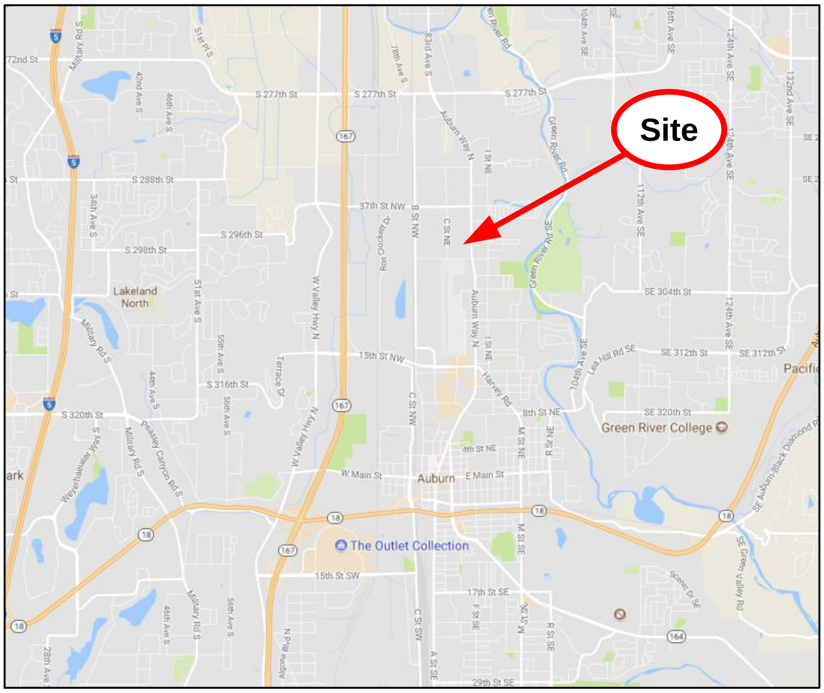
FIGURES

TABLES

APPENDICES

ATTACHMENTS





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g-logics

Site Location Maps

Auburn Way Property

3025 and 3109 Auburn Way North

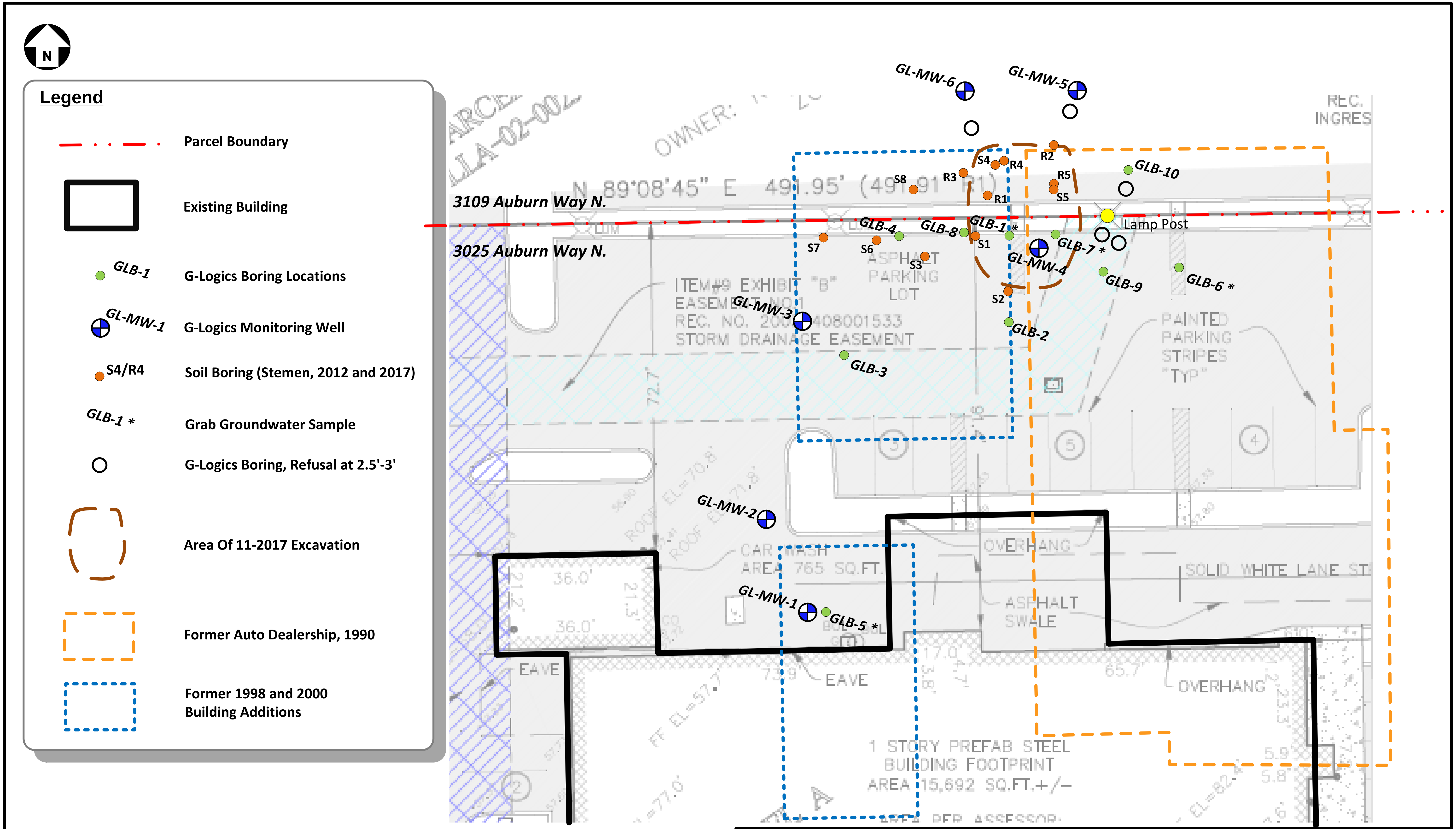
Auburn, Washington

Figure

1

Project File: 01-1140-E-RT-F1.vsd

Mapping Reference: King County iMap, Delorme, Google Maps, and G-Logics Site Visit Observations



Approximate Drawing Scale: 1" = 20'

Note: This figure contains information in color. Black & white photocopies may not be suitable for review.

Exploration Locations With Survey

Auburn Way Properties

3025 and 3109 Auburn Way North

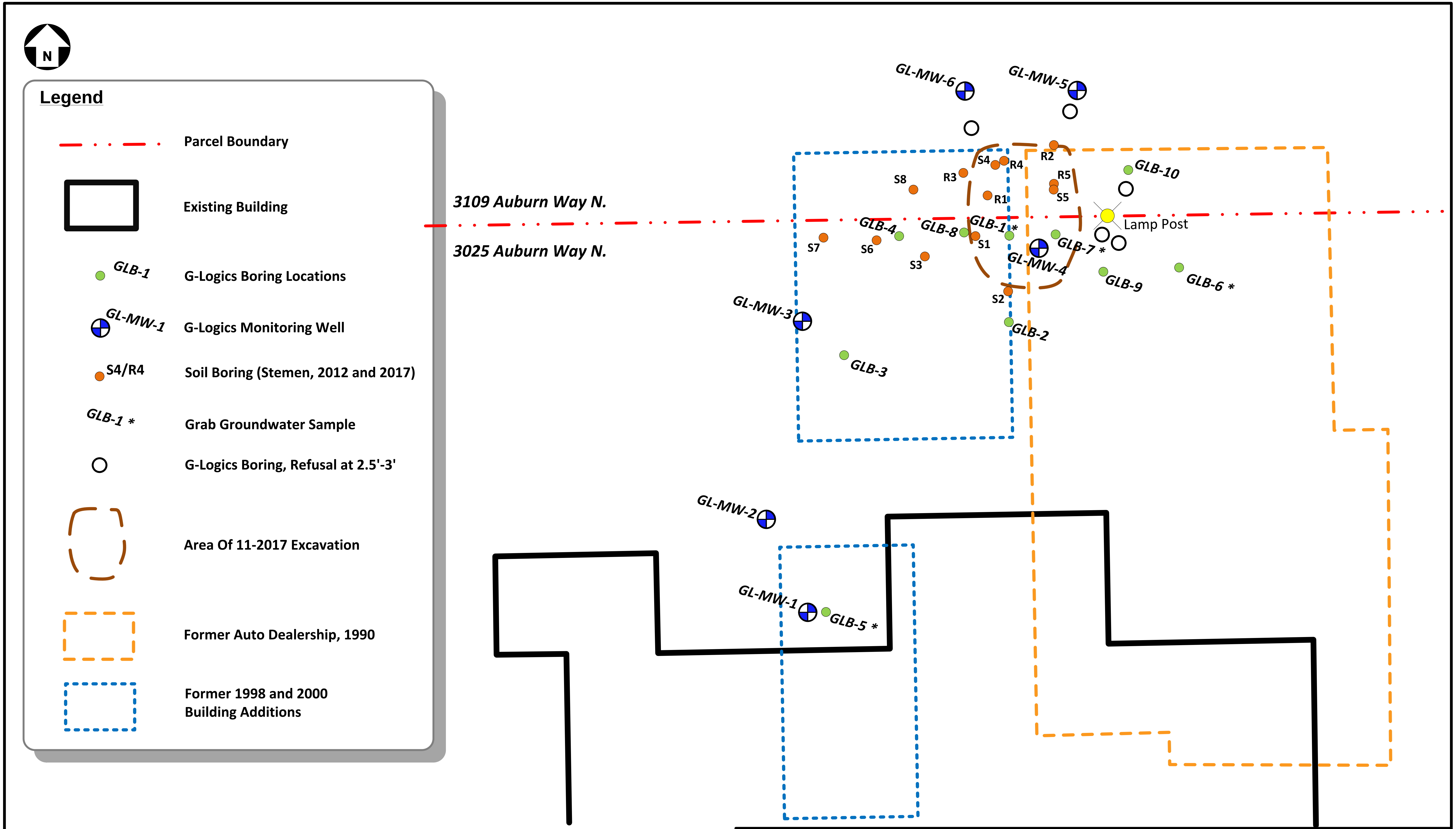
Auburn, Washington

Figure

2

Project File: 01-1140-E-RT-F2.vsd

Mapping Reference: ALTA/NSPS Land Title Survey 8/3/2017, King County iMap Aerials 1990, 1998, 2000, Riley Phase I, Stemen Phase II 2012, Stemen Sample Location Map 2017, and G-Logics Site Visit Observations and Measurements



Approximate Drawing Scale: 1" = 20'

0 ft. 12 ft. 20 ft. 40 ft.

Note: This figure contains information in color. Black & white photocopies may not be suitable for review.

Exploration Locations

Auburn Way Properties

3025 and 3109 Auburn Way North

Auburn, Washington

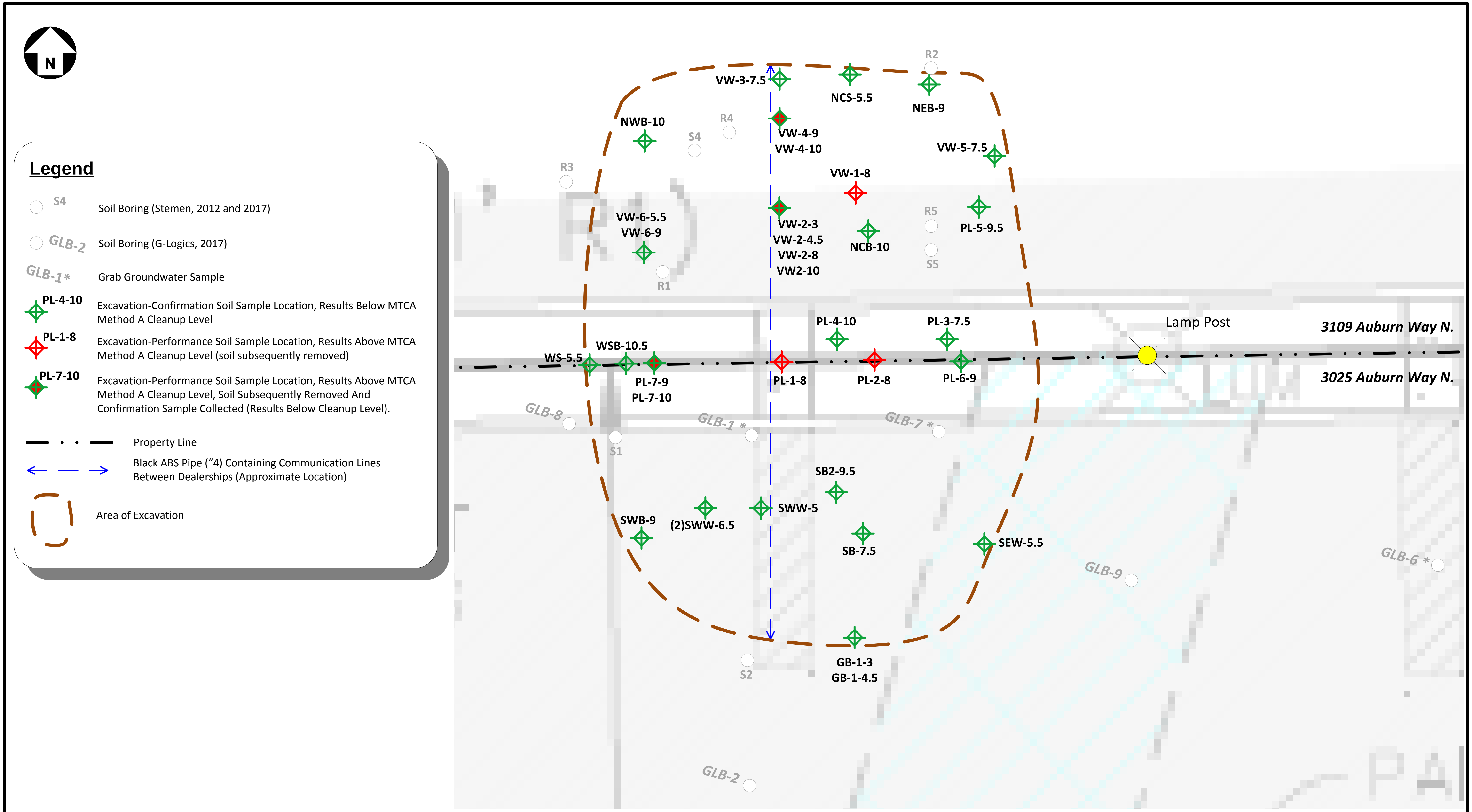
Figure

2a

g-logics

Project File: 01-1140-E-RT-F2a.vsd

Mapping Reference: ALTA/NSPS Land Title Survey 8/3/2017, King County iMap Aerials 1990, 1998, 2000, Riley Phase I, Stemen Phase II 2012, Stemen Sample Location Map 2017, and G-Logics Site Visit Observations and Measurements



Project File: 01-1140-E-RT-F3.vsd

g-logics

Approximate Drawing Scale: 1" = 5'

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

Note: This figure contains information in color. Black & white photocopies may not be suitable for review.

Excavation-Sampling Locations

Auburn Way Properties

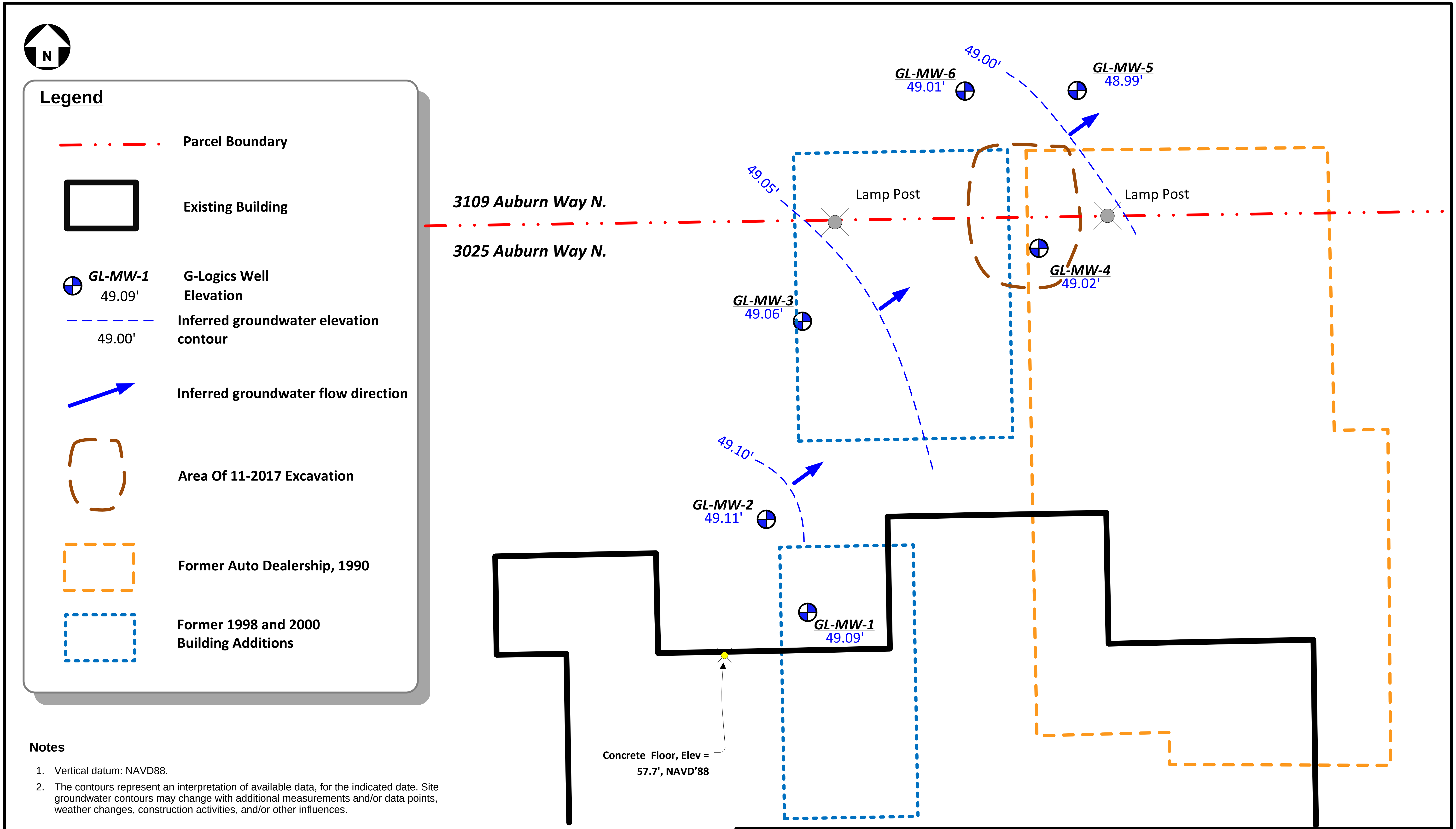
3025 and 3109 Auburn Way North

Auburn, Washington

Figure

3

Mapping Reference: ALTA/NSPS Land Title Survey 8/3/2017, Riley Phase I, Stemen Phase II 2012, Stemen Sample Location Map 2017, and G-Logics Site Visit Observations and Measurements



Notes

1. Vertical datum: NAVD88.
2. The contours represent an interpretation of available data, for the indicated date. Site groundwater contours may change with additional measurements and/or data points, weather changes, construction activities, and/or other influences.

Project File: 01-1140-E-RT-F4.vsd

g-logics

Approximate Drawing Scale: 1" = 20'

0 ft. 12 ft. 20 ft. 40 ft.

Note: This figure contains information in color. Black & white photocopies may not be suitable for review.

Groundwater Elevations (3/14/2018)

Auburn Way Properties

3025 and 3109 Auburn Way North

Auburn, Washington

Figure

4

Mapping Reference: Terrane ALTA/NSPS Land Title Survey 8/3/2017, King County iMap Aerials 1990, 1998, 2000, Riley Phase I, Stemen Phase II 2012, Stemen Sample Location Map 2017, and G-Logics Site Visit Observations and Measurements

TABLE 1
Soil Sample Analyses (1)
Auburn Way Properties
3025 and 3109 Auburn Way North
Auburn, Washington

Exploration Location	Sample Date	Sample Number	Sample Depth (ft.)	PID Reading (ppmv)	Gasoline Range Organics	Diesel Range Organics	Heavy Oil Range Organics	Heavy Oil Range Organics (SGT)	Benzene	Toluene	Ethylbenzene	Xylenes	Total PCBS	Arsenic	Cadmium	Chromium (III)	Chromium (IV, Hexavalent)	Lead	Mercury	VOCs	Phenanthrene	Pyrene	Total cPAHs
MTCA Cleanup Level (2)(3)				NA	100(a)/30(b)	2,000	2,000	2,000	0.03	7	6	9	1	20	2	2,000	19	250	2	Various (c)	**	2,400*	1
(units in mg/kg)																							
Stemen Environmental Inc.																							
December, 2012																							
S1	12/12/2012	S1-8	8	---	<10	<50	<100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		S1-12	12	---	<10	<50	<100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S2	12/12/2012	S2-9	9	---	<10	<50	**120**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S3	12/12/2012	S3-9	9	---	<10	<50	<100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S4	12/12/2012	S4-8	8	---	**500**	<50	**3,800**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S5	12/12/2012	S5-9	9	---	<10	<50	<100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S6	12/12/2012	S6-9	9	---	<10	<50	<100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S7	12/12/2012	S7-8	8	---	<10	<50	<100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S8	12/12/2012	S8-8	8	---	<10	<50	<100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Stemen Environmental Inc.																							
June, 2017																							
R1	6/2/2017	R1-5	5	---	<10	<50	**710**	---	<0.02	<0.05	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---
		R1-8	8	---	<10	<50	**210**	---	<0.02	<0.05	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---
R2	6/2/2017	R2-5	5	---	<10	<50	<100	---	<0.02	<0.05	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---
		R2-8	8	---	<10	<50	<100	---	<0.02	<0.05	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---
R3	6/2/2017	R3-5	5	---	<10	<50	<100	---	<0.02	<0.05	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---
		R3-8	8	---	<10	<50	<100	---	<0.02	<0.05	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---

TABLE 1
Soil Sample Analyses (1)
Auburn Way Properties
3025 and 3109 Auburn Way North
Auburn, Washington

Exploration Location	Sample Date	Sample Number	Sample Depth (ft.)	PID Reading (ppmv)	Gasoline Range Organics	Diesel Range Organics	Heavy Oil Range Organics	Heavy Oil Range Organics (SGT)	Benzene	Toluene	Ethylbenzene	Xylenes	Total PCBS	Arsenic	Cadmium	Chromium (III)	Chromium (IV, Hexavalent)	Lead	Mercury	VOCs	Phenanthrene	Pyrene	Total cPAHs
MTCA Cleanup Level (2)(3)				NA	100(a)/30(b)	2,000	2,000	2,000	0.03	7	6	9	1	20	2	2,000	19	250	2	Various (c)	**	2,400*	1
(units in mg/kg)																							
R4	6/2/2017	R4-5	5	---	<10	<50	<100	---	<0.02	<0.05	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---
		R4-8	8	---	<10	<50	<100	---	<0.02	<0.05	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---
R5	6/2/2017	R5-5	5	---	<10	**67**	**110**	---	<0.02	<0.05	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---
		R5-10	10	---	<10	<50	<100	---	<0.02	<0.05	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---
G-Logics																							
July, 2017 (Pre Remedial Excavation)																							
GLB-1	7/21/2017	GLB-1-5	5	8.4	<6.10	<26.2	**6,110**	**5,990**	<0.0244	<0.0244	<0.0305	<0.0610	**0.132**	**15.2**	**0.278**	**27.7**	<0.682	**91.8**	<0.345	nd	<0.0525	<0.0525	nd
		GLB-1-10	10	0.4	---	<23.8	<59.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLB-1-14	14	0.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GLB-2	7/21/2017	GLB-2-4	4	1.4	---	<24.3	<60.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLB-2-8	8	0.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLB-2-111	11	0.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GLB-3	7/21/2017	GLB-3-4	4	0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLB-3-8	8	0.5	---	<24.3	<60.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLB-3-11	11	0.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GLB-4	7/21/2017	GLB-4-4	4	0.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLB-4-8	8	0.3	---	<23.9	<59.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLB-4-11	11	0.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GLB-5	7/21/2017	GLB-5-8	8	0.4	<5.91	<25.3	<63.4	---	<0.0237	<0.0237	<0.0296	<0.0591	---	---	---	---	---	---	---	---	---	---	---
		GLB-5-12	12	0.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GLB-6	7/21/2017	GLB-6-4	4	0.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLB-6-8	8	0.5	<5.60	<25.3	<63.2	---	<0.0224	<0.0224	<0.0280	<0.0560	---	---	---	---	---	---	---	---	---	---	---
		GLB-6-11	11	0.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GLB-7	7/21/2017	GLB-7-6	6	5.5	<5.70	<23.8	**2,160**	**2,500**	<0.0228	<0.0228	<0.0285	**0.0468**	---	---	---	---	---	---	---	---	---		---
		GLB-7-9	9	8.3	**24.3**	<26.1	**2,900**	**3,250**	<0.0241	<0.0241	<0.0302	<0.0604	**0.316**	**3.47**	<0.222	**20.9**	**---**	**4.09**	<0.340	nd	**0.0651**	**0.0701**	nd
		GLB-7-11	11	---	---	<22.3	<55.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GLB-8	7/21/2017	GLB-8-9	9	---	---	<22.3	<55.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GLB-9	7/21/2017	GLB-9-9	9	---	---	<26.9	<67.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

TABLE 1
Soil Sample Analyses (1)
Auburn Way Properties
3025 and 3109 Auburn Way North
Auburn, Washington

Exploration Location	Sample Date	Sample Number	Sample Depth (ft.)	PID Reading (ppmv)	Gasoline Range Organics	Diesel Range Organics	Heavy Oil Range Organics	Heavy Oil Range Organics (SGT)	Benzene	Toluene	Ethylbenzene	Xylenes	Total PCBS	Arsenic	Cadmium	Chromium (III)	Chromium (IV, Hexavalent)	Lead	Mercury	VOCs	Phenanthrene	Pyrene	Total cPAHs
MTCA Cleanup Level (2)(3)				NA	100(a)/30(b)	2,000	2,000	2,000	0.03	7	6	9	1	20	2	2,000	19	250	2	Various (c)	**	2,400*	1
(units in mg/kg)																							
G-Logics																							
Remedial Excavation, November 2017																							
SWW	11/6/2017	SWW-5	5	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---
(2)SWW	11/7/2017	(2)SWW-6.5	6.5	---	---	<50	<250	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SWB	11/9/2017	SWB-9	9	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---
SEW	11/6/2017	SEW-5.5	5.5	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---
NWB	11/8/2017	NWB-10	10	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---
NCS	11/8/2017	NCS-5.5	5.5	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---
NEB	11/8/2017	NEB-9	9	---	---	<50	<250	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WS	11/9/2017	WS-5.5	5.5	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---
WSB	11/9/2017	WSB-10.5	10.5	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---
GB-1	11/6/2017	GB-1-3	3	---	---	---	---	---	---	---	---	---	---	<5.0	---	---	---	---	---	---	---	---	---
	11/6/2017	GB-1-4.5	4.5	---	---	---	---	---	---	---	---	---	---	**6.2**	---	---	---	---	---	---	---	---	---
SB	11/6/2017	SB-7.5	7.5	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---	**6.2**	---	---	---	---	---	---	---	---	---
SB2	11/9/2017	SB2-9.5	9.5	---	---	<50	<250	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
PL-1	11/7/2017	PL-1-8	8	---	---	<500	**12,200E**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
PL-2	11/7/2017	PL-2-8	8	---	---	<500	**20,800**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
PL-3	11/7/2017	PL-3-7.5	7.5	---	---	<50	<250	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
PL-4	11/7/2017	PL-4-10	10	---	<10	<50	<250	---	<0.02	<0.10	<0.05	**0.17**	---	---	---	---	---	---	---	---	---	---	---
PL-5	11/7/2017	PL-5-9.5	9.5	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---
PL-6	11/7/2017	PL-6-9	9	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---

TABLE 1
Soil Sample Analyses (1)
Auburn Way Properties
3025 and 3109 Auburn Way North
Auburn, Washington

Exploration Location	Sample Date	Sample Number	Sample Depth (ft.)	PID Reading (ppmv)	Gasoline Range Organics	Diesel Range Organics	Heavy Oil Range Organics	Heavy Oil Range Organics (SGT)	Benzene	Toluene	Ethylbenzene	Xylenes	Total PCBS	Arsenic	Cadmium	Chromium (III)	Chromium (IV, Hexavalent)	Lead	Mercury	VOCs	Phenanthrene	Pyrene	Total cPAHs
MTCA Cleanup Level (2)(3)				NA	100(a)/30(b)	2,000	2,000	2,000	0.03	7	6	9	1	20	2	2,000	19	250	2	Various (c)	**	2,400*	1
(units in mg/kg)																							
PL-7	11/8/2017	PL-7-9	9	---	---	**280**	**18,000E**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	11/8/2017	PL-7-10	10	---	---	<50	**1,650**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
VW-1	11/7/2017	VW-1-8	8	---	---	<500	**4,390**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NCB	11/8/2017	NCB-10	10	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---
VW-2	11/7/2017	VW-2-3	3	---	---	---	---	---	---	---	---	---	---	<5.0	---	---	---	---	---	---	---	---	---
	11/7/2017	VW-2-4.5	4.5	---	---	---	---	---	---	---	---	---	---	<5.0	---	---	---	---	---	---	---	---	---
	11/7/2017	VW-2-8	8	---	---	<500	**17,200**	---	---	---	---	---	---	<5.0	---	---	---	---	---	---	---	---	---
	11/9/2017	VW2-10	10	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---
VW-3	11/7/2017	VW-3-7.5	7.5	---	---	<50	<250	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
VW-4	11/7/2017	VW-4-9	9	---	---	<500	**22,700**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	11/8/2017	VW-4-10	10	---	---	<50	<250	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
VW-5	11/7/2017	VW-5-7.5	7.5	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---	---	---	---	---	---	---
VW-6	11/8/2017	VW-6-5.5	5.5	---	---	<50	<250	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	11/8/2017	VW-6-9	9	---	---	<50	<250	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
G-Logics																							
March, 2018 (Post Remedial Excavation)																							
GL-MW-2	3/12/2018	GL-MW-2-2.5	2.5	0.4	---	<20	**320**	---	---	---	---	---	---	**3.45**	---	---	---	---	---	---	---	---	---
		GL-MW-2-6	6	0.7	---	<20	<50	---	---	---	---	---	---	**10.80**	---	---	---	---	---	---	---	---	---
		GL-MW-2-8.5	8.5	0.4	---	<20	<50	---	---	---	---	---	---	**6.26**	---	---	---	---	---	---	---	---	---
		GL-MW-2-11	11	0.7	---	---	---	---	---	---	---	---	---	**5.20**	---	---	---	---	---	---	---	---	---
GL-MW-3	3/12/2018	GL-MW-3-2.5	2.5	0.2	---	---	---	---	---	---	---	---	---	**---**	---	---	---	---	---	---	---	---	---
		GL-MW-3-6	6	0.3	---	<20	<50	---	---	---	---	---	---	**9.86**	---	---	---	---	---	---	---	---	---
		GL-MW-3-8.5	8.5	0.3	---	<20	<50	---	---	---	---	---	---	**6.03**	---	---	---	---	---	---	---	---	---
		GL-MW-3-11	11	0.3	---	---	---	---	---	---	---	---	---	**2.57**	---	---	---	---	---	---	---	---	---
GL-MW-4	3/12/2018	GL-MW-4-11	11	1.4	---	<20	<50	---	---	---	---	---	---	**2.47**	---	---	---	---	---	---	---	---	---
		GL-MW-4-13	13	---	---	---	---	---	---	---	---	---	---	**---**	---	---	---	---	---	---	---	---	---
GL-MW-5	3/12/2018	GL-MW-5-3	4	---	---	---	---	---	---	---	---	---	---	**---**	---	---	---	---	---	---	---	---	---
		GL-MW-5-8	8	0.3	---	<20	<50	---	---	---	---	---	---	**4.56**	---	---	---	---	---	---	---	---	---
		GL-MW-5-11	11	0.3	---	---	---	---	---	---	---	---	---	**2.46**	---	---	---	---	---	---	---	---	---

TABLE 1
Soil Sample Analyses (1)
Auburn Way Properties
3025 and 3109 Auburn Way North
Auburn, Washington

Exploration Location	Sample Date	Sample Number	Sample Depth (ft.)	PID Reading (ppmv)	Gasoline Range Organics	Diesel Range Organics	Heavy Oil Range Organics	Heavy Oil Range Organics (SGT)	Benzene	Toluene	Ethylbenzene	Xylenes	Total PCBS	Arsenic	Cadmium	Chromium (III)	Chromium (IV, Hexavalent)	Lead	Mercury	VOCs	Phenanthrene	Pyrene	Total cPAHs
MTCA Cleanup Level (2)(3)				NA	100(a)/30(b)	2,000	2,000	2,000	0.03	7	6	9	1	20	2	2,000	19	250	2	Various (c)	**	2,400*	1
(units in mg/kg)																							
GL-MW-6	3/13/2018	GL-MW-6-2	2	---	---	---	---	---	---	---	---	---	---	**3.78**	---	---	---	---	---	---	---	---	---
		GL-MW-6-5	5	0.5	---	<20	<50	---	---	---	---	---	---	**8.57**	---	---	---	---	---	---	---	---	---
		GL-MW-6-8	8	---	---	<20	**206**	---	---	---	---	---	---	**8.34**	---	---	---	---	---	---	---	---	---
		GL-MW-6-10	10	---	---	---	---	---	---	---	---	---	---	**---**	---	---	---	---	---	---	---	---	---
GLB-10	3/13/2018	GLB-10-2	2	---	---	---	---	---	---	---	---	---	---	**4.43**	---	---	---	---	---	---	---	---	---
		GLB-10-6	6	0.3	---	<20	<50	---	---	---	---	---	---	**15.70**	---	---	---	---	---	---	---	---	---
		GLB-10-8.5	8.5	0.2	---	<20	<50	---	---	---	---	---	---	**4.83**	---	---	---	---	---	---	---	---	---
		GLB-10-10.5	10.5	0.2	---	<20	<50	---	---	---	---	---	---	**2.52**	---	---	---	---	---	---	---	---	---

Notes:

(1)	Refer to site diagram(s) for sampling locations. Refer to laboratory reports for analytical methods.
(2)	Available Method A Cleanup Levels or Most Conservative Method B Cleanup Levels, MTCA, revised 2013. Exceeding Cleanup Levels does not necessarily trigger requirements for Cleanup Actions under MTCA. Refer to site diagram(s) for sampling locations.
(3)	Results For Cd, Cr, Pb, PAHs, PCB, and VOCs can be found in G-Logics Additional Soil and Groundwater Sampling report dated August 13, 2017
(a)	Soil Cleanup Level For Gasoline With No Detectable Benzene In The Soil.
(b)	Soil Cleanup Level For Gasoline With Detectable Benzene In The Soil.
---	Sample not analyzed.
E	Indicates Reported Result Is An Estimate Because It Exceeds The Calibration Range
<50.0	Sample concentration below laboratory reporting limit.
27	Bold number(s) indicates contaminant detected, below cleanup level.
160	Bold number(s) and yellow shading indicates concentration exceeds MTCA Cleanup Level.
SGT	Silica Gel Treatment
*	Method B Cleanup Level.
**	Not researched, no available data.
<250	Reporting limits exceeds cleanup level.
(c)	VOCs analyzed were not detected. See attached analytical laboratory reports for details.

TABLE 2 (1)
Groundwater Sample Analyses

Auburn Way Property
3025 Auburn Way North
Auburn, Washington

Exploration Location	Sample Date	Sample Number	Sample Depth (ft)	Gasoline Range Organics (no detectable benzene)	Diesel Range Organics	Diesel Range Organics (SGT)	Heavy Oil Range Organics	Heavy Oil Range Organics (SGT)	Benzene	Toluene	Ethylbenzene	Xylenes	Arsenic (Total)	Arsenic (Dissolved)	Cadmium	Chromium (Total)	Lead	Mercury	Total PCBs (a)	VOCs (a)	2-Methylnaphthalene	cPAHs (a)
MTCA Cleanup Level (2)(3) **(units in ug/L)**				1,000	500	500	500	500	5.00	1,000	700	1,000	5	5	5	50	15	2	0.100	Various	32*	0.1
Stemen Environmental Inc.																						
December, 2012																						
S1	12/12/2012	S1-W	8	<100	<250	---	<500	---	<1	<1	<1	<3	---	---	---	---	---	---	---	nd	---	---
S4 (b)	12/12/2012	S4-W	8	<100	<250	---	<500	---	<1	<1	<1	<3	---	---	---	---	---	---	---	---	---	---
S6	12/12/2012	S6-W	8	<100	<250	---	<500	---	<1	<1	<1	<3	---	---	---	---	---	---	---	---	---	---
Stemen Environmental Inc.																						
December, 2012																						
R2 (b)	6/2/2017	R2-W		<100	<250	---	<500	---	<1	<1	<1	<3	---	---	---	---	**15**	---	---	nd	---	---
R5 (b)	6/2/2017	R5-W		<100	<250	---	<500	---	<1	<1	<1	<3	---	---	---	---	---	---	---	---	---	---
G-Logics																						
July, 2017 (Pre Remedial Eacvation)																						
GLB-1-W (4)	7/21/2017	GLB-1-W	9-14ft	<50	<49.9	---	**1,670**	**1,210**	<1	<1	<1	<1	**2.44**	---	<0.200	**1.79**	**2.06**	<0.100	<0.100	nd	<0.0997	nd
GLB-5-W (4)	7/21/2017	GLB-5-W	9-14ft	<50	<49.9	---	**700**	**599**	<1	<1	<1	<1	**20.7**	**5.19**	<0.200	**8.68**	**0.592**	<0.100	---	nd	---	---
GLB-6-W (4)	7/21/2017	GLB-6-W	9-14ft	<50	<49.9	---	**161**	---	<1	<1	<1	<1	**6.25**	---	<0.200	**2.00**	**1.32**	<0.100	---	nd	---	---
GLB-7-W (4)	7/21/2017	GLB-7-W	9-14ft	<50	**1,200**	**857**	**4,370**	**3,090**	<1	<1	<1	<1	**19.0**	**6.94**	<0.200	**1.87**	**1.89**	<0.100	<0.999	nd	**0.143**	nd

TABLE 2 (1)
Groundwater Sample Analyses

Auburn Way Property
3025 Auburn Way North
Auburn, Washington

Exploration Location	Sample Date	Sample Number	Sample Depth (ft)	Gasoline Range Organics (no detectable benzene)	Diesel Range Organics	Diesel Range Organics (SGT)	Heavy Oil Range Organics	Heavy Oil Range Organics (SGT)	Benzene	Toluene	Ethylbenzene	Xylenes	Arsenic (Total)	Arsenic (Dissolved)	Cadmium	Chromium (Total)	Lead	Mercury	Total PCBs (a)	VOCs (a)	2-Methylnaphthalene	cPAHs (a)
MTCA Cleanup Level (2)(3)				1,000	500	500	500	500	5.00	1,000	700	1,000	5	5	5	50	15	2	0.100	Various	32*	0.1
(units in ug/L)																						
GL-MW-1	7/31/2017	GL-MW-1	5-15ft	---	<49.9	---	**426**	---	---	---	---	---	**25.0**	**20.7**	---	---	---	---	---	---	---	---
GL-MW-1(Dup.)	7/31/2017	GL-MW-100	5-15 ft	---	<49.8	---	**375**	---	---	---	---	---	**27.9**	**21.1**	---	---	---	---	---	---	---	---
G-Logics																						
Excavation)																						
GL-MW-1	3/20/2018	GL-MW-1	5-15ft	<50	**119**	---	**219**	---	<1	<1	<1	<1	**26.0**	**4.31**	---	---	---	---	---	---	---	---
	3/20/2018	GL-MW-A	Field Dup.	<50	**78.1**	---	**291**	---	<1	<1	<1	<1	**27.0**	**4.61**					---	---	---	---
GL-MW-2	3/20/2018	GL-MW-2	5-15ft	<50	<49.9	---	**161**	---	<1	<1	<1	<1	**44.3**	**14.1**	---	---	---	---	---	---	---	---
GL-MW-3	3/20/2018	GL-MW-3	5-15ft	<50	<49.9	---	<99.9	---	<1	<1	<1	<1	**25.70**	**4.56**	---	---	---	---	---	---	---	---
GL-MW-4	3/20/2018	GL-MW-4	5-15ft	<50	**152**	---	**259**	---	<1	<1	<1	<1	**6.16**	**6.15**	---	---	---	---	---	---	---	---
GL-MW-5	3/20/2018	GL-MW-5	5-15ft	<50	<50	---	<100	---	<1	<1	<1	<1	**1.80**	<1.75	---	---	---	---	---	---	---	---
GL-MW-6	3/20/2018	GL-MW-6	5-15ft	<50	**69.8**	---	**346**	---	<1	<1	<1	<1	**11.1**	**2.57**	---	---	---	---	---	---	---	---

Notes:

(1)	Refer to site diagram(s) for sampling locations. Refer to laboratory reports for analytical methods.
(2)	Available Method A Cleanup Levels or Most Conservative Method B Cleanup Levels, MTCA, revised 2013. Exceeding Cleanup Levels does not necessarily trigger requirements for Cleanup Actions under MTCA. Refer to site diagram(s) for sampling locations.
(3)	Gasoline Analyses by Method NWTPH-Gx, Diesel and Heavy Oil by NWTPH-Dx/Dx Ext., MTCA 5 Metals by 200.8/245.1, VOCs by 8260C, PAH by 8270 (SIM), PCB by 8082.
(4)	Grab Groundwater Sample
(a)	Analytes were not detected. See attached analytical laboratory reports for details.
(b)	No analytical laboratory report included in the Stemen Environmental report to verify analytical data.
*	Method B Cleanup Level.
**	Not researched, no available data.
---	Sample not analyzed.
nd	Not Detected
Dup.	Duplicate Sample for QA/QC.
<50.0	Sample concentration below laboratory reporting limit.
27	Bold number(s) indicates contaminant detected, below cleanup level.
160	Bold number(s) and yellow shading indicates concentration exceeds MTCA Cleanup Level.
SGT	Silica Gel Treatment

TABLE 3

Groundwater Elevation Measurements
Auburn Way Properties

Well Designation	Well Installation Date	Elevation Top of PVC Casing (ft.)*	Depth to Top of Screen (ft.)	Depth to Bottom of Screen (ft.)	Well Diam. (in.)	Date Measured	Depth to Water (ft.)	Calculated GW Elevations (ft.)
GL-MW-01	7/31/18	57.20	5	15	2	03/14/18	8.11	49.09
						03/20/18	8.29	48.91
GL-MW-02	3/12/18	56.64	5	15	2	03/14/18	7.53	49.11
						03/20/18	7.68	48.96
GL-MW-03	3/12/18	56.09	5	15	2	03/14/18	7.03	49.06
						03/20/18	7.21	48.88
GL-MW-04	3/12/18	55.87	5	15	2	03/14/18	6.85	49.02
						03/20/18	7.02	48.85
GL-MW-05	3/12/18	55.18	5	15	2	03/14/18	6.19	48.99
						03/20/18	6.35	48.83
GL-MW-06	3/13/18	55.53	5	15	2	03/14/18	6.52	49.01
						03/20/18	6.7	48.83

Notes:

* Elevations based on a backsight to the concrete floor at the north entrance of the auto shop. The floor elevation at this location is 57.7’ (Figure 2).

\# Depth not recorded.

-- Not Applicable.

Unified Soil Classification System (USCS)

PRIMARY DIVISIONS			SYMBOL	DESCRIPTIONS
COARSE GRAINED SOILS Sands & Gravels, Over 50% retained on #200 sieve	**GRAVELS** Over 50% of coarse material retained on #4 sieve	**CLEAN GRAVEL** Less than 5% passing #200 sieve	GW	Well graded gravel, many different particle sizes, little or no fines
			GP	Poorly graded, few different particle sizes, little or no fines
		GRAVEL WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	SAND Over 50% of coarse material passed #4 sieve	**CLEAN SANDS** Less than 5% passing #200 sieve	SW	Well graded gravel, many different particle sizes, little or no fines
			SP	Poorly graded, few different particle sizes, little or no fines
		SAND WITH FINES	SM	Silty gravels, gravel-sand-silt mixtures
			SC	Clayey gravels, gravel-sand-clay mixtures
FINE GRAINED SOILS Silts & Clays, Over 50% passing the #200 sieve	**SILTS AND CLAYS** Liquid limit is less than 50 %		ML	Inorganic silts, slight to no plasticity
			CL	Inorganic clays, low to moderate plasticity
			OL	Organic silts and clays of low plasticity
	SILTS AND CLAYS Liquid limit is more than 50 %		MH	Inorganic silts, moderate to high plasticity
			CH	Inorganic clays, high plasticity, fat clays
			OH	Organic silts and clays of high plasticity
Highly Organic Soils			PT	Peat and other highly organic soils

Soil Samples

☒	Disturbed, bag, bulk, or grab sample
◧	Standard penetration split spoon sample
▥	Cuttings
╎	Continuous-Core Sample

Field Measurements

▽	Water Level Observed During Drilling
PID	Photoionization Detector
ppmv	Parts Per Million by Volume
⌵	End of Boring (E.O.B)

Note: Blows per foot is the number of blows used to drive a split-spoon (2” OD) sampler through the last 12 inches of an 18-inch sampling attempt. One blow is a 30-inch fall of a 140-pound hammer.

Note: The line separating strata on the logs represents approximate boundaries only. The actual transition may be gradual. No warranty is provided as to the continuity of the strata between exploration locations. Logs represent the soil section observed at the exploration location on the date of exploration only.

ExplorationLogLegend.pub

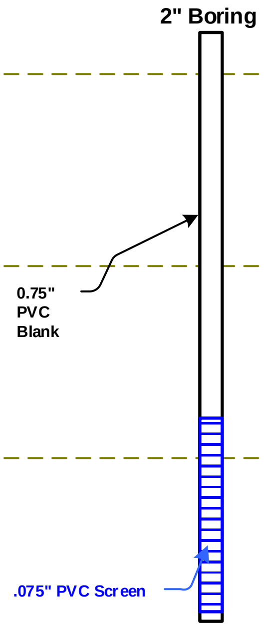
g-logics

Exploration Log Legend

glb-1.vsd

	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)
			Asphalt Pavement			
0			0-2': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, petroleum odor in cutting shoe, moist. 2'-5': No recovery.	40	SW	
5		GLB1-5	5'-9': SILT with clay: medium plasticity; gray brown, petroleum odor at top of sample, moist to wet @ 9 feet. Groundwater at 9.02'	90	ML	8.4
10		GLB1-10	9'-13': SILTY SAND: fine grain; olive brown, no odor, wet.	90	SM	0.4
		GLB-1-W				
		GLB1-14	13'-14': SAND, poorly-graded: fine grain; olive brown, no odor, wet. E.O.B. at 14 feet.		SP	0.3
15						
20						
25						
30						

WELL CONSTRUCTION



Depth in feet

Drilling Method: Direct-Push
Drilling Company: ESN Northwest
Boring Diameter: Two Inches
Logged By: K. Vandehey

Date: 7/21/2017
Weather: Sunny, Warm
Page 1 **of** 1

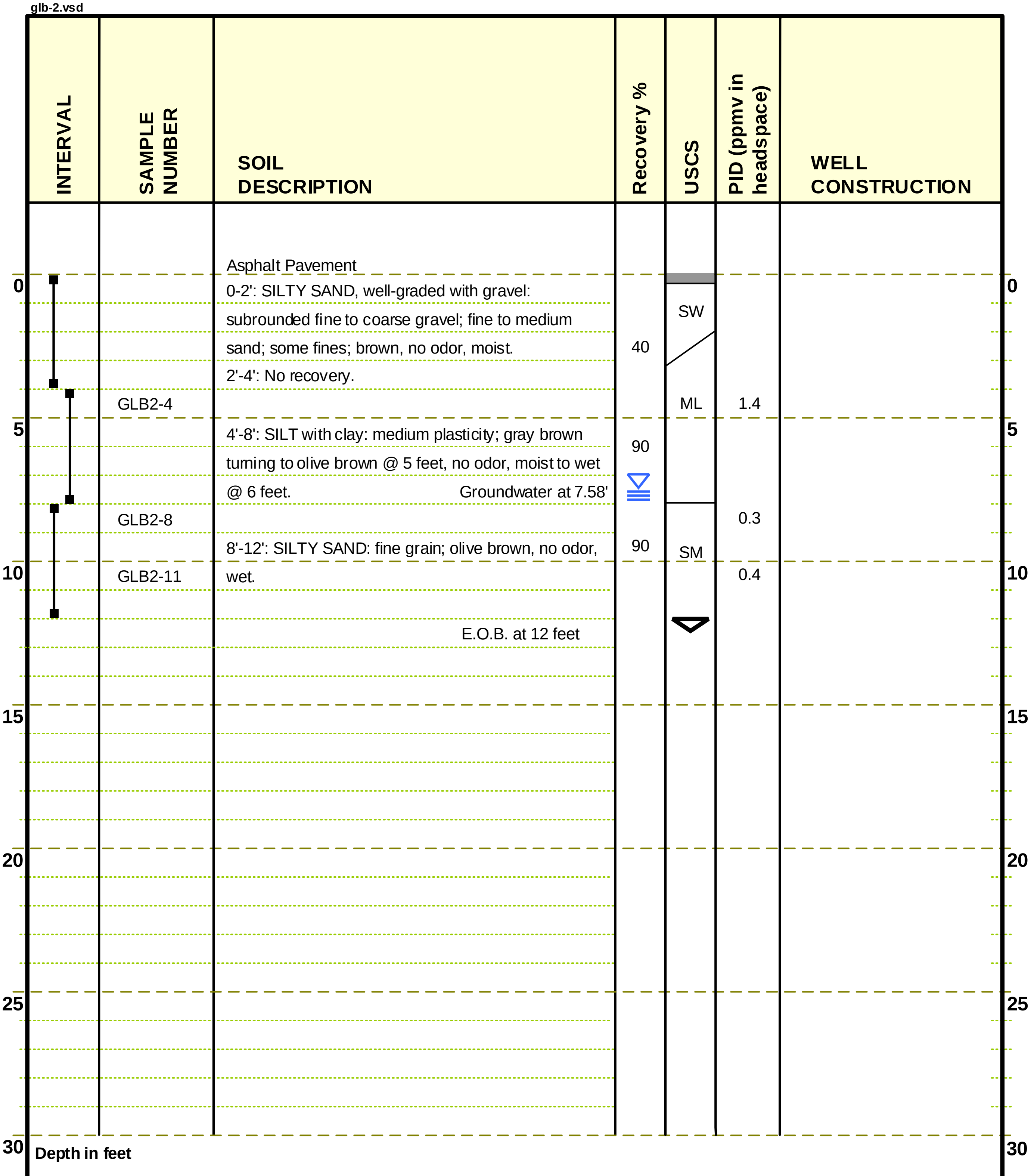
Other Information:
Grab water sample collected with a peristaltic pump. Following sample collection, PVC was removed and the boring was backfilled with bentonite.

g-logics

Boring/Well Log
Auburn Way Property
3001 and 3025 Auburn Way N
Auburn, Washington

GLB-1

glb-2.vsd



Depth in feet	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
			Asphalt Pavement				
0			0-2': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, no odor, moist.	40	SW		
			2'-4': No recovery.				
		GLB2-4			ML	1.4	
5			4'-8': SILT with clay: medium plasticity; gray brown turning to olive brown @ 5 feet, no odor, moist to wet @ 6 feet. Groundwater at 7.58'	90			
		GLB2-8				0.3	
			8'-12': SILTY SAND: fine grain; olive brown, no odor, wet.	90	SM		
10		GLB2-11				0.4	
			E.O.B. at 12 feet				
15							
20							
25							
30							

Drilling Method: Direct-Push

Drilling Company: ESN Northwest

Boring Diameter: Two Inches

Logged By: K. Vandehey

Date: 7/21/2017

Weather: Sunny, Warm

Page __1___ **of** __1____

Other Information:

g-logics

Boring/Well Log
Auburn Way Property
3001 and 3025 Auburn Way N
Auburn, Washington

GLB-2

glb-3.vsd

	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION	
			Asphalt Pavement					
0			0-2': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, no odor, moist.	40	SW			0
			2'-4': No recovery.					
		GLB3-4			ML	0.8		
5			4'-8': SILT with clay: medium plasticity; yellow brown turning to gray @ 7 feet, no odor, moist.	80				5
		GLB3-8	8'-12': SILTY SAND: fine grain; olive brown, no odor, wet @ 8 feet.	90	SM	0.5		
10		GLB3-11	Groundwater at 10.8'	▽		0.4		10
			E.O.B. at 12 feet		▽			
15								15
20								20
25								25
30								30

Depth in feet

Drilling Method: Direct-Push

Drilling Company: ESN Northwest

Boring Diameter: Two Inches

Logged By: K. Vandehey

Date: 7/21/2017

Weather: Sunny, Warm

Page 1 **of** 1

Other Information:

g-logics

Boring/Well Log
Auburn Way Property
3001 and 3025 Auburn Way N
Auburn, Washington

GLB-3

glb-4.vsd

	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
			Asphalt Pavement				
0			0-2': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, no odor, moist.	50	SW		
			2'-4': No recovery.				
		GLB4-4	4'-6': SILT with clay: medium plasticity; olive brown, no odor moist to wet @ 6 feet.			0.5	
5				60	ML		
			6'-8': No recovery.				
			Groundwater at 7.54'	▽			
		GLB4-8	8'-9': Same as above; gray, no odor, wet.			0.3	
			9'-12': SILTY SAND: fine grain; olive brown, no odor, wet.	80			
10		GLB4-11			SM	0.5	
			E.O.B. at 12 feet				
15							
20							
25							
30							

Depth in feet

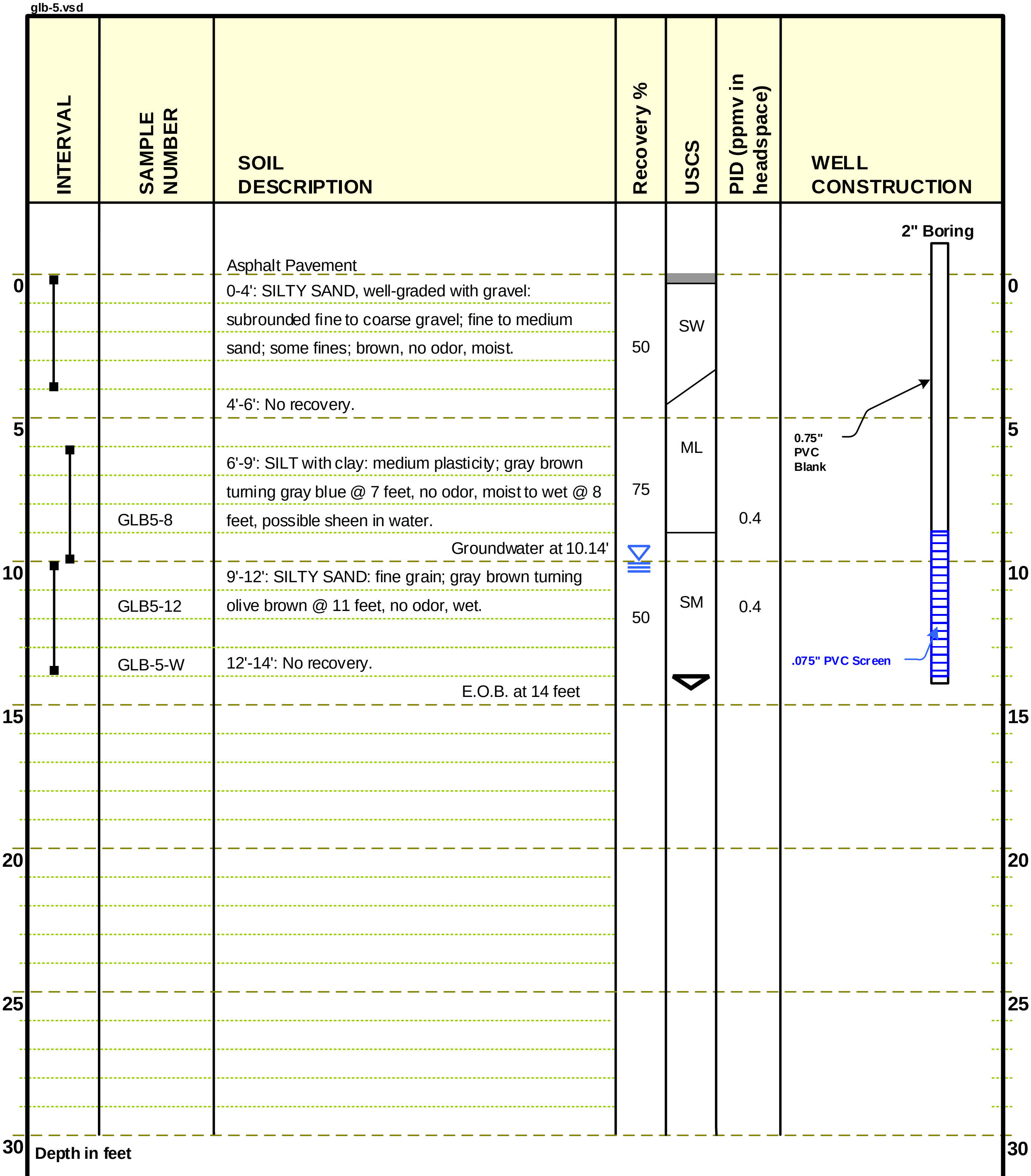
Drilling Method: Direct-Push	**Date:** 7/21/2017	**Other Information:**
Drilling Company: ESN Northwest	**Weather:** Sunny, Warm	
Boring Diameter: Two Inches	**Page** __1___ **of** __1____	
Logged By: K. Vandehey		

g-logics

Boring/Well Log
Auburn Way Property
3001 and 3025 Auburn Way N
Auburn, Washington

GLB-4

glb-5.vsd



SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)
	Asphalt Pavement			
	0-4': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, no odor, moist.	50	SW	
	4'-6': No recovery.			
GLB5-8	6'-9': SILT with clay: medium plasticity; gray brown turning gray blue @ 7 feet, no odor, moist to wet @ 8 feet, possible sheen in water.	75	ML	0.4
	Groundwater at 10.14'			
GLB5-12	9'-12': SILTY SAND: fine grain; gray brown turning olive brown @ 11 feet, no odor, wet.	50	SM	0.4
GLB-5-W	12'-14': No recovery.			
	E.O.B. at 14 feet			

Drilling Method: Direct-Push

Drilling Company: ESN Northwest

Boring Diameter: Two Inches

Logged By: K. Vandehey

Date: 7/21/2017

Weather: Sunny, Warm

Page 1 **of** 1

Other Information: Slow Recovery on water. Grab water sample collected with a peristaltic pump. Following sample collection, PVC was removed and the boring was backfilled with bentonite.

g-logics

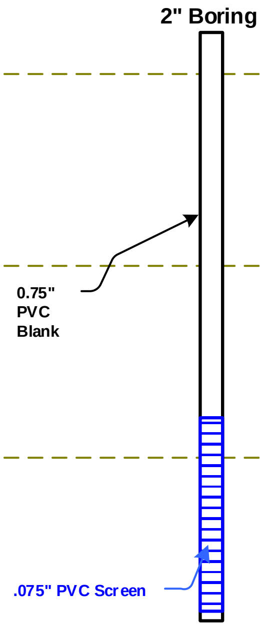
Boring/Well Log
Auburn Way Property
3001 and 3025 Auburn Way N
Auburn, Washington

GLB-5

	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)
			Asphalt Pavement			
0			0-2': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, no odor, moist.	55	SW	
		GLB6-4	2'-4': No recovery.			0.6
5			4'-9': SILT with clay: medium plasticity; gray brown, no odor, moist to wet @ 9 feet.	75	ML	
		GLB6-8	Groundwater at 9.02'	▽		0.5
10		GLB-6-W GLB6-11	9'-12': SILTY SAND: fine grain; olive brown, no odor, wet.	75	SM	0.4
			12'-14': No sample collected, drove casing to 14' to set PVC. E.O.B. at 14 feet			
15						
20						
25						
30						

Depth in feet

WELL CONSTRUCTION



Drilling Method: Direct-Push

Drilling Company: ESN Northwest

Boring Diameter: Two Inches

Logged By: K. Vandehey

Date: 7/21/2017

Weather: Sunny, Warm

Page 1 **of** 1

Other Information:

Grab water sample collected with a peristaltic pump. Following sample collection, PVC was removed and the boring was backfilled with bentonite.

g-logics

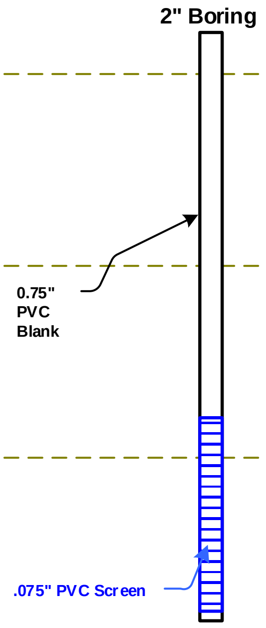
Boring/Well Log
Auburn Way Property
3001 and 3025 Auburn Way N
Auburn, Washington

GLB-6

glb-7.vsd

INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)
		Asphalt Pavement			
	GLB7-6	4'-9': SILT with clay: medium plasticity; brown turning gray @ 5 feet, petroleum odor, moist to wet @ 9 feet.	75	ML	5.5
		Groundwater at 9.09'			
	GLB7-9	9'-12': SILTY SAND: fine grain; gray brown turning olive brown @ 11 feet, petroleum odor decreasing with depth, wet.	75	SM	8.3
	GLB7-11				--
	GLB-7-W	12'-14': No sample collected, drove casing to 14' to set PVC. E.O.B. at 14 feet			

WELL CONSTRUCTION



Depth in feet: 0, 5, 10, 15, 20, 25, 30

Drilling Method: Direct-Push	**Date:** 7/21/2017
Drilling Company: ESN Northwest	**Weather:** Sunny, Warm
Boring Diameter: Two Inches	**Page** 1 **of** 1
Logged By: K. Vandehey	

Other Information:

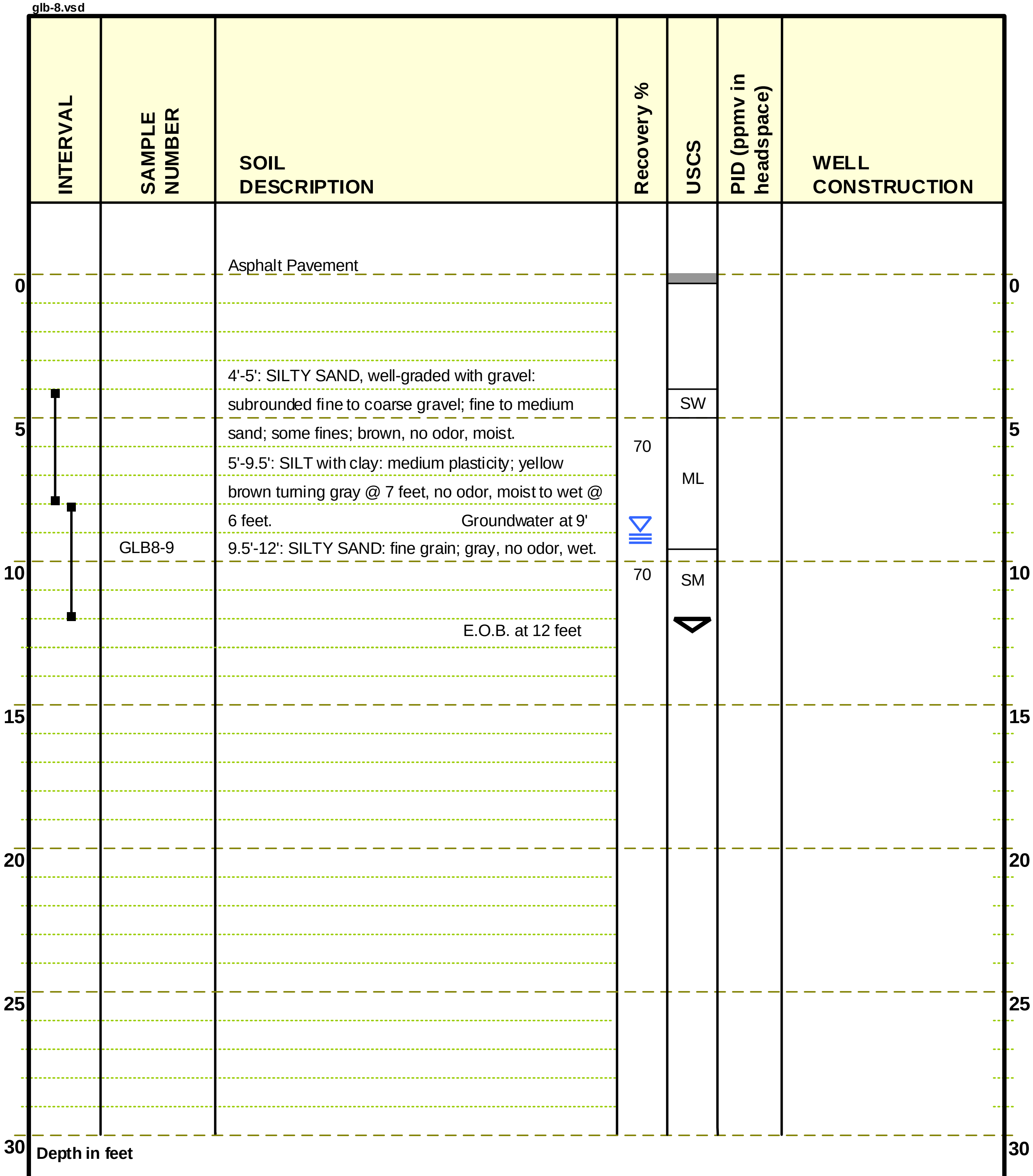
Grab water sample collected with a peristaltic pump. Following sample collection, PVC was removed and the boring was backfilled with bentonite.

g-logics

Boring/Well Log
Auburn Way Property
3001 and 3025 Auburn Way N
Auburn, Washington

GLB-7

glb-8.vsd



Asphalt Pavement

4'-5': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, no odor, moist.

5'-9.5': SILT with clay: medium plasticity; yellow brown turning gray @ 7 feet, no odor, moist to wet @ 6 feet.

Groundwater at 9'

9.5'-12': SILTY SAND: fine grain; gray, no odor, wet.

E.O.B. at 12 feet

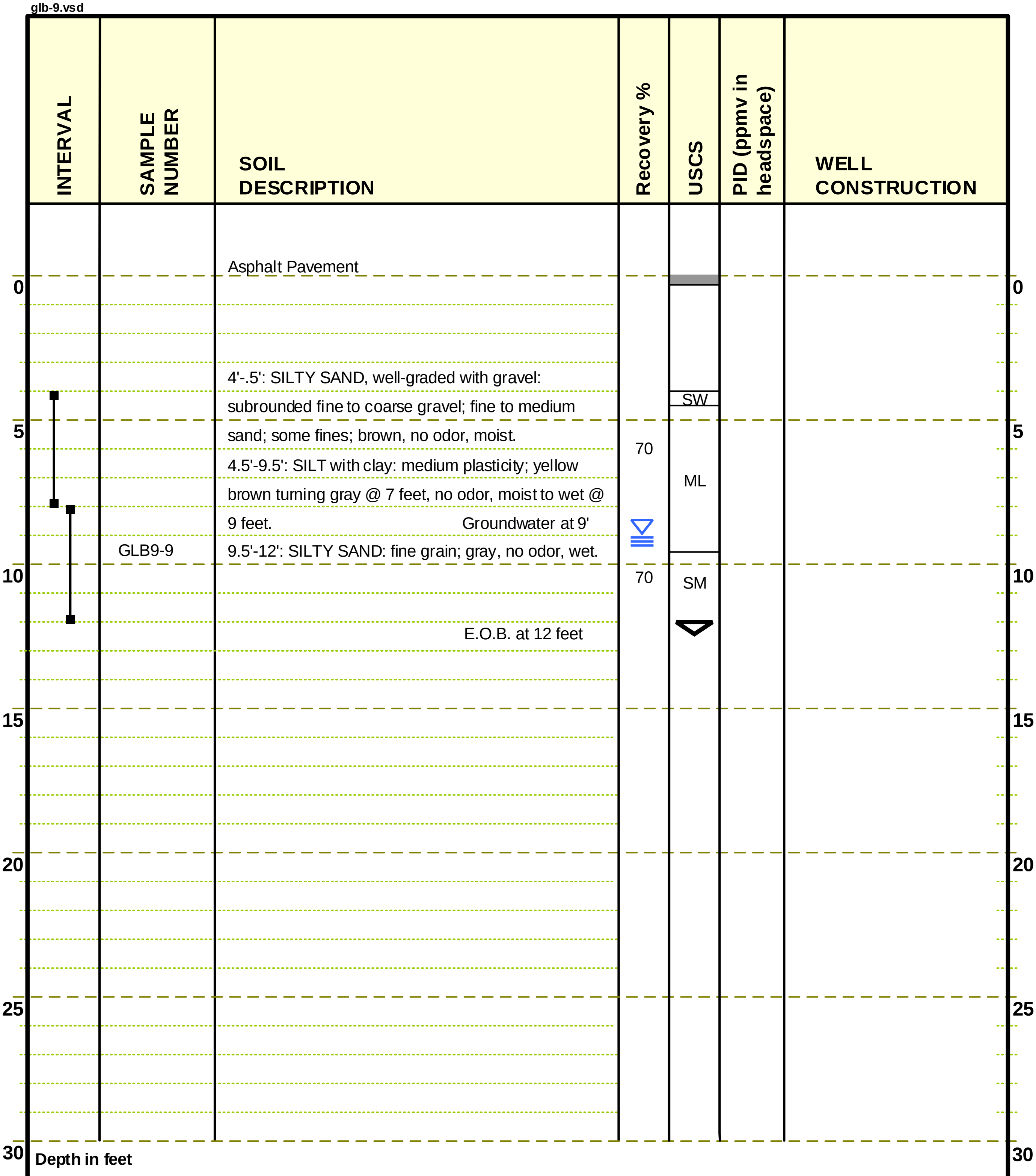
Drilling Method: Direct-Push	**Date:** 7/21/2017	**Other Information:**
Drilling Company: ESN Northwest	**Weather:** Sunny, Warm	
Boring Diameter: Two Inches	**Page** 1 **of** 1	
Logged By: K. Vandehey		

g-logics

Boring/Well Log
Auburn Way Property
3001 and 3025 Auburn Way N
Auburn, Washington

GLB-8

glb-9.vsd



Asphalt Pavement

4'-.5': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, no odor, moist.

4.5'-9.5': SILT with clay: medium plasticity; yellow brown turning gray @ 7 feet, no odor, moist to wet @ 9 feet.

Groundwater at 9'

9.5'-12': SILTY SAND: fine grain; gray, no odor, wet.

E.O.B. at 12 feet

Drilling Method: Direct-Push	**Date:** 7/21/2017	**Other Information:**
Drilling Company: ESN Northwest	**Weather:** Sunny, Warm	
Boring Diameter: Two Inches	**Page** __1___ **of** __1____	
Logged By: K. Vandehey		

g-logics

Boring/Well Log
Auburn Way Property
3001 and 3025 Auburn Way N
Auburn, Washington

GLB-9

gl-b-10.vsd

Depth in feet	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
				Asphalt Pavement				
0				Refusal twice (Unidentified Object). Moved boring northeast.				
	12 13 16	▮	GL-B-10-2	0-5': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, no odor, moist.	100	SW		
5	1 1 2	▮	GL-B-10-6	5'-8': SILT with clay: medium plasticity; gray brown, no odor, moist to wet by 8'.	75 ▽	ML	0.3	
	1 1 2	▮	GL-B-10-8.5	8'-11.5': SILTY SAND: fine grain; gray, no odor, wet.	100		0.2	
10	2 2 2	▮	GL-B-10-10.5		100	SM	0.2	
				E.O.B. at 11.5 feet				
15								
20								
25								
30								

Drilling Method: HSA

Date: 3/13/2018

Other Information:

Refusal twice at approximately 2.5' and 3' (Unidentified Object). Moved boring.

Drilling Company: Holocene

Weather: Cloudy, 60 Degrees

Boring Diameter: Eight Inches

Page 1 **of** 1

Logged By: K. Vandehey

g-logics

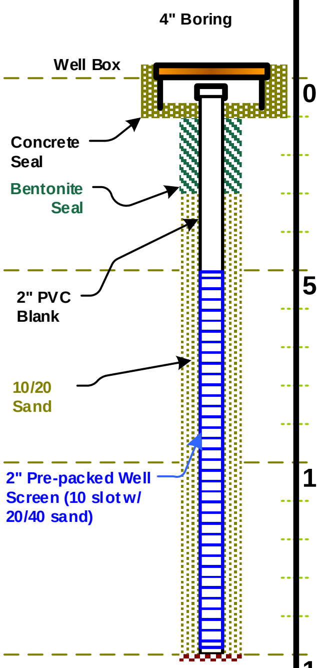
Boring/Well Log
Auburn Way Property
3001 and 3025 Auburn Way N
Auburn, Washington

GL-B-10

gl-mw-1.vsd

INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)
		Asphalt Pavement			
		Soils Not Observed			
		Groundwater at 10'	▽		
		E.O.B. at 15 feet		▽	

WELL CONSTRUCTION



0
5
10
15
20
25
30

Depth in feet

Drilling Method: Direct-Push
Drilling Company: ESN Northwest
Boring Diameter: Four Inches
Logged By: J. Stordahl

Date: 7/31/2017
Weather: Sunny, Warm
Page 1 of 1

Other Information:
Well Tag ID# BJW 614

g-logics

Boring/Well Log
Auburn Way Property
3001 and 3025 Auburn Way N
Auburn, Washington

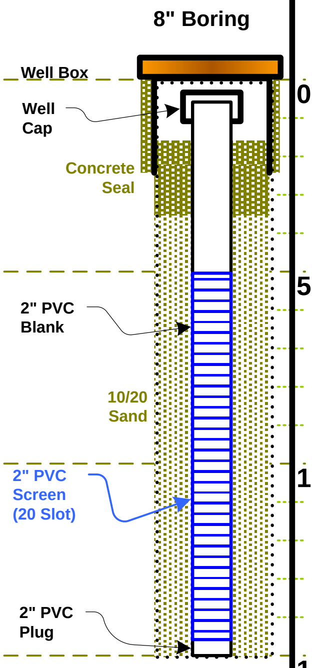
GL-MW-1

gl-mw-2.vsd

	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)
				Asphalt Pavement			
0				0-6': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium			
	6 8 7	▮	GL-MW-2-2.5	sand; some fines; brown, no odor, moist.	50	SW	0.4
5	1 1 2	▮	GL-MW-2-6	6'-11': SILT with clay: medium plasticity; gray brown turning gray @ 8', no odor, moist to wet.	100	ML	0.7
	2 1 1	▮	GL-MW-2-8.5	Groundwater at 7.53'	100		0.4
10	1 1 4	▮	GL-MW-2-11	11'-11.5': SILTY SAND: fine grain; gray, no odor, wet.	100	SM	0.7
				11.5'-15': Soil not observed.			
15				E.O.B. at 15 feet			
20							
25							
30							

Depth in feet

WELL CONSTRUCTION



Drilling Method: HSA

Drilling Company: Holocene

Boring Diameter: Eight Inches

Logged By: K. Vandehey

Date: 3/12/2018

Weather: Sunny, 60-70 Degrees

Page 1 **of** 1

Other Information:

Groundwater Depth Measured 3/14/2018

Ecology Well Tag # BKC-474

g-logics

Boring/Well Log
Auburn Way Property
3001 and 3025 Auburn Way N
Auburn, Washington

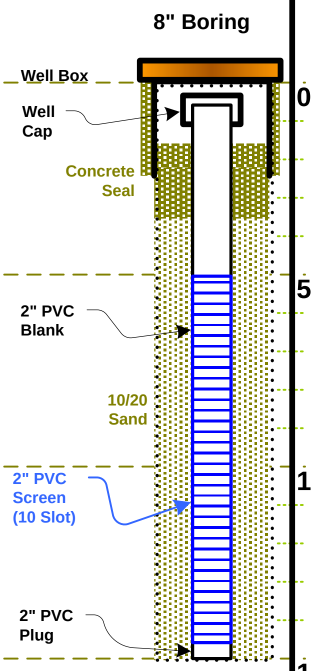
GL-MW-2

gl-mw-3.vsd

Depth (ft)	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)
0				Asphalt Pavement 0-5': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, no odor, moist.			
	10 8 8	▮	GL-MW-3-2.5		50	SW	0.2
5	3 3 10	▮	GL-MW-3-6	5'-9.5': SILT with clay: medium plasticity; gray brown, no odor, moist to wet. Groundwater at 7.03'	75	ML	0.3
	1 1 1	▮	GL-MW-3-8.5	9.5'-11.5': SILTY SAND: fine grain; gray, no odor,	100		0.3
10	2 3 3	▮	GL-MW-3-11	wet.	100	SM	0.3
				11.5'-15': Soil not observed.			
15				E.O.B. at 15 feet			
20							
25							
30							

Depth in feet

WELL CONSTRUCTION



Drilling Method: HSA

Date: 3/12/2018

Drilling Company: Holocene

Weather: Sunny, 60-70 Degrees

Boring Diameter: Eight Inches

Page 1 **of** 1

Logged By: K. Vandehey

Other Information:

Groundwater Depth Measured 3/14/2018

Ecology Well Tag # BKC-473 (Original well that was decommissioned because it kept filling with drillers sand.) Replacement Well Tag # BKC-486.

g-logics

Boring/Well Log
Auburn Way Property
3001 and 3025 Auburn Way N
Auburn, Washington

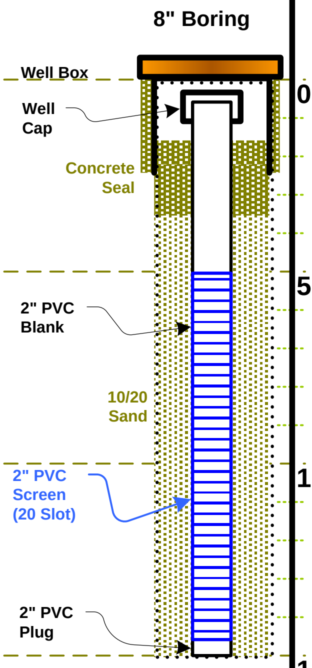
GL-MW-3

gl-mw-4.vsd

BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)
			Asphalt Pavement			
			0-9': Within excavation area. Soil not observed.			
			Groundwater at 6.85'			
1 2 3			Poor recovery. Excavation backfill.	10		
2 3 4		GL-MW-4-11	11'-13': SILTY SAND: fine grain; gray, no odor, wet.	100	SM	1.4
2 4 6		GL-MW-4-13	13'-14.5': SAND, poorly-graded: fine grain; olive brown, no odor, wet.	100	SP	
			E.O.B. at 15 feet			

Depth in feet: 0, 5, 10, 15, 20, 25, 30

WELL CONSTRUCTION



Drilling Method: HSA	**Date:** 3/12/2018	**Other Information:** Groundwater Depth Measured 3/14/2018 Ecology Well Tag # BKC-475
Drilling Company: Holocene	**Weather:** Sunny, 60-70 Degrees	
Boring Diameter: Eight Inches	**Page** 1 **of** 1	
Logged By: K. Vandehey		

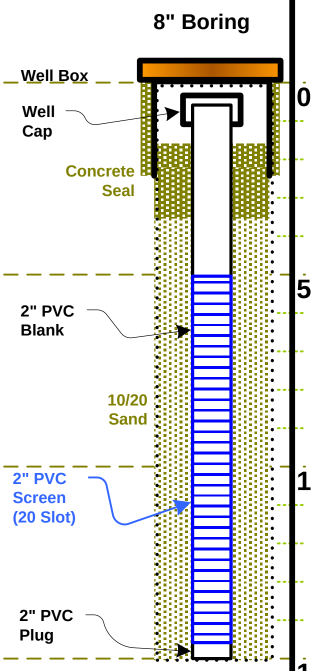
g-logics

Boring/Well Log
Auburn Way Property
3001 and 3025 Auburn Way N
Auburn, Washington

GL-MW-4

Depth in feet	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)
				Asphalt Pavement			
0				Drilled through a 6" PVC pipe at approximately 3' (Unidentified Utility). Moved boring northeast.			
	10 4 3		GL-MW-5-3	0-8': Poor Recovery.	5	SW	
5	1 1 1			Groundwater at 6.19'	0	ML	
	1 2 3		GL-MW-5-8	8'-9': SILT with clay: medium plasticity; brown, no odor, wet.	100		0.3
10	2 2 5		GL-MW-5-11	9.5'-11.5': SILTY SAND: fine grain; brown, no odor, wet.	100	SM	0.3
				11.5'-15': Soil not observed.			
15				E.O.B. at 15 feet			
20							
25							
30							

WELL CONSTRUCTION



Drilling Method: HSA	**Date:** 3/12/2018
Drilling Company: Holocene	**Weather:** Sunny, 60-70 Degrees
Boring Diameter: Eight Inches	**Page** 1 **of** 1
Logged By: K. Vandehey	

Other Information:

Groundwater Depth Measured 3/14/2018

Ecology Well Tag # BKC-476

g-logics

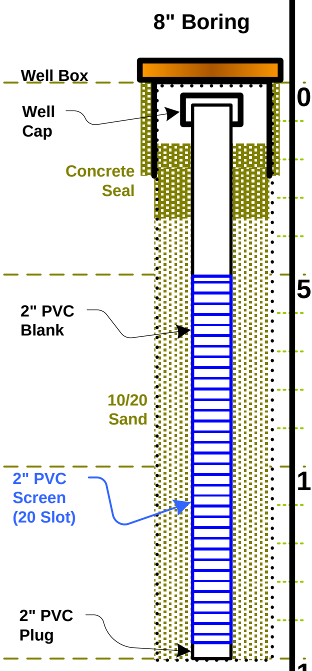
Boring/Well Log
Auburn Way Property
3001 and 3025 Auburn Way N
Auburn, Washington

GL-MW-5

gl-mw-6.vsd

Depth in feet	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)
				Asphalt Pavement			
0				Refusal at approximately 3' (Unidentified Object). Moved boring northwest.			
	20 18 12	◨	GL-MW-6-2	0-5': Poor Recovery. SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, no odor, moist.	15	SW	0.5
5	5 2 2	◨	GL-MW-6-5	5'-9.5': SILT with clay: medium plasticity; gray turning gray brown @ 8', no odor, moist to wet. Groundwater at 6.52'	50 ▽	ML	
	2 2 1	◨	GL-MW-6-8		10		
10	7 9 5	◨	GL-MW-6-10	9.5'-11.5': SILTY SAND: fine grain; brown, no odor, wet.	15	SM	
				11.5'-15': Soil not observed.			
15				E.O.B. at 15 feet			
20							
25							
30							

WELL CONSTRUCTION



Drilling Method: HSA

Date: 3/13/2018

Drilling Company: Holocene

Weather: Cloudy, 60 Degrees

Boring Diameter: Eight Inches

Page 1 **of** 1

Logged By: K. Vandehey

Other Information:
Groundwater Depth Measured 3/14/2018
Ecology Well Tag # BKC-477

g-logics

Boring/Well Log
Auburn Way Property
3001 and 3025 Auburn Way N
Auburn, Washington

GL-MW-6

February 5, 2019
G-Logics Project Number 01-1140-F

M&M Ventures, LLC	R&E Investments, LLC
Mr. Mike Scarff	Mr. Roger Vermazen
33 Knights Lane	16932 SE 354th Street
Friday Harbor, WA 98250	Auburn, WA 98092

Subject: **Groundwater-Sampling Report, December 2018**
Fourth Quarter Groundwater Sampling Results
Facility/Site No. 57361549
PTAP Project No. PNW030
Auburn Way Properties
3025 and 3109 Auburn Way N
Auburn, WA 98002

Dear Mr. Scarff and Mr. Vermazen:

G-Logics was authorized by M&M Ventures (recent 3025 property owner) and M&M Ventures (recent 3109 property owner) to conduct three additional quarters of groundwater monitoring at the Site (Figure 1). This work is a collaborative effort to verify the successful removal of petroleum contaminants at the Site in order to request a No Further Action (NFA) Opinion from the State of Washington's Pollution Liability Insurance Agency (PLIA).

G-Logics performed this work as described in our workplan dated June 27, 2018. Pervious G-Logics site-exploration and remediation work completed at the Site is documented in our *Additional Soil and Groundwater Sampling* report dated August 13, 2017, our *Environmental Media Management Report* dated December 4, 2017, and our *Well Installation and Groundwater Sampling* report dated April 12, 2018.

1.0 Site Background

The Site is composed of two properties, 3025 and 3109 Auburn Way N. The 3025 property is identified as King County tax parcel number 0004000039. The 3109 property is identified as King County tax parcel number 0004000041.

As summarized in the G-Logics Phase I report dated July 18, 2017, this area was primarily agricultural land prior to the 1970s. A review of aerial photographs appears to show row crops throughout the area, with occasional small orchards.

Since at least the early 1970s, an automobile dealership and a service garage historically occupied the northern portion of the 3025 property and the southern portion of the 3109 property (adjacent property to the north). A former 550-gallon used-oil underground storage tank (UST) was removed from west side of the former dealership building located on the 3025 property.

1.1 Exploration Background

Stemen Environmental, Inc. (SEI) conducted a Phase II exploration in this area (report dated December 20, 2012). Soil and groundwater samples were collected on both the 3025 and the 3109 properties. None of the samples that SEI analyzed from the 3025 property contained concentrations of gasoline (GRO), diesel (DRO), oil-range hydrocarbons (ORO), or volatile organic compounds (VOCs) at concentrations above MTCA Method A cleanup levels.

In the SEI Phase II exploration, GRO and ORO hydrocarbons were found exceeding MTCA Method A cleanup levels in soils along the southern boundary of the 3109 property. SEI conducted additional sampling work in June 2017. ORO in soil was detected but at concentrations below the cleanup level. None of the analyzed groundwater samples contained concentrations of GRO, DRO, ORO, or VOCs. However one groundwater sample contained lead at the MTCA Method A cleanup level (15 ug/L) (see G-Logics *Additional Soil and Groundwater Sampling* report dated August 13, 2017 for more information).

To provide additional data for the former UST area, G-Logics conducted soil and groundwater sampling in July 2017. On the 3025 property, the ORO hydrocarbons were found exceeding the MTCA Method A cleanup level in soils along the northern property boundary. DRO and ORO also were found above cleanup levels in two grab-groundwater samples collected in this area. Total and dissolved concentrations of arsenic also were reported above the MTCA Method A cleanup level in two of the four grab-groundwater samples and in one monitoring well-sample (see G-Logics *Additional Soil and Groundwater Sampling* report dated August 13, 2017 for more information).

The arsenic is likely due to area-wide sources, based on location and lack of relevant operations and activities on the properties. This area is also located within the Tacoma Smelter plume, which may also have contributed to arsenic detections. Other off-property sources may include former-agricultural practices in the area, and/or volcanic deposits from Mount Rainier. Specifically, the Osceola Mudflow buried a large portion this area with volcanic material, originating during eruptions approximately 5,600 years ago.

To address the petroleum-contamination, G-Logics recommended a remedial excavation. Mr. Vermazen (3109 property owner) agreed that if petroleum-contaminated soil was found to extend onto his property, then those contaminated soils also should be removed. Accordingly, the remedial excavation planned for the 3025 property extended to the north onto the 3109 property.

1.2 Remediation Background

In November 2017, petroleum-contaminated media (soil and groundwater) was removed from an area spanning the property line. The work consisted of the removal and disposal of approximately 384 tons of petroleum-contaminated soil and approximately 2,600 gallons of water (rain and groundwater). Analyzed confirmation samples indicated that all petroleum-contaminated soils above MTCA Method A cleanup levels were successfully removed from this area. After the remedial excavation had been completed, 200 pounds of an oxygen-release compound (ORC Advanced) was added to groundwater in the excavation, as well as the backfill material near the groundwater interface (see G-Logics *Environmental Media Management Report* dated December 4, 2017 for more information).

1.3 Regulatory Background

The law that guides the remediation process at sites located within Washington State is the Model Toxics Control Act (MTCA). The regulations implementing MTCA are located in the Washington Administrative Code (WAC), Chapter 173-340. This regulation is administered by the Washington Department of Ecology (Ecology).

The property owners performed an independent remedial action for this Site, in accordance with the Ecology guidance. Such remedial actions are specifically allowed by MTCA, and are encouraged by Ecology and PLIA.

1.4 PLIA Background

As of January 2, 2018 the Pollution Liability Insurance Agency (PLIA) has authority to respond and deliver opinions on qualifying petroleum-contaminated sites throughout Washington. This ability is called the Petroleum Technical Assistance Program (PTAP), as established under RCW 70.149.040(9).

During the intake meeting with PLIA on January 31, 2018, PLIA offered that the two properties (3025 and 3109) be considered as one Site. PLIA requested additional sampling be conducted on both properties to address potential data gaps and to document that any residual contamination did not migrate beyond the Site boundaries. PLIA also requested that the potential for vapor intrusion in nearby buildings be assessed. The Site was accepted into the PTAP program in February, 2018 (letter date February 5, 2018).

To satisfy PLIA's request, additional well installation and sampling was conducted in March 2018 (see G-Logics *Well Installation and Groundwater Sampling* report dated April 12, 2018 for more information). Following their review of this report, PLIA issued a Further Action Letter for the Site, dated May 31, 2018. During a follow-up meeting with PLIA on June 13, 2018, it was confirmed that the potential for vapor intrusion in nearby buildings was not an issue, and that soil contamination associated with a former used-oil UST had been successfully removed (revised Further Action Letter, dated July 13, 2018). However, in order to obtain an NFA Opinion, PLIA indicated that quarterly groundwater monitoring of GRO, DRO, ORO, BTEX (benzene, toluene, ethylbenzene, and xylenes), and arsenic would need to be conducted for at least four additional consecutive quarters.

1.5 Quarterly Groundwater-Monitoring Background

In March 2018 (first quarter) six groundwater-monitoring wells were sampled. GRO and BTEX were not detected in any of the analyzed groundwater samples. All detected concentrations of DRO and ORO were below MTCA Method A cleanup levels. Total arsenic was found above the cleanup level in all wells except GL-MW-5. Dissolved arsenic was below the cleanup level in all wells except GL-MW-2 and GL-MW-4. The highest dissolved arsenic concentration was 14.1 ug/L in GL-MW-2.

In June 2018 (second quarter), six groundwater-monitoring wells were sampled. GRO and BTEX were not detected in any of the analyzed groundwater samples. Analytical results document that GRO and BTEX have never been detected in groundwater samples collected at this Site. Based on these findings, G-Logics requested that GRO and BTEX be removed from the list of analytes for the remaining events. PLIA approved this request in an e-mail dated August 28, 2018.

In June and September 2018, all detected concentrations of DRO and ORO were below cleanup levels with the exception of GL-MW-4 and GL-MW-6, where ORO was detected above the cleanup level in the two wells. Selected water samples also were analyzed using silica-gel methods. Based on the analytical results both DRO and ORO concentration dropped, leaving all detected petroleum concentrations below cleanup levels.

Also in June and September 2018, arsenic was found above the cleanup level in all wells except GL-MW-4 and GL-MW-5. Dissolved arsenic was below the cleanup level in all wells during the June sampling event, and all but one well (GL-MW-2) during the September sampling event. Historical groundwater analytical results are summarized in Table 1. The information for the fourth quarter of monitoring is presented below.

2.0 Groundwater Sampling

G-Logics conducted the fourth quarter of groundwater sampling on December 27, 2018. Six groundwater-monitoring wells (MW-1 through MW-6, Figures 2) were sampled to obtain information regarding groundwater contaminants. Eight groundwater samples were collected (including two field duplicates) from the six wells. Collected samples from each well were submitted to the analytical laboratory (Fremont Analytical). Water samples were analyzed for DRO, ORO, and arsenic (total and dissolved). Results of these analyses are presented in Section 4.0 of this report. Field exploration methods are described in Appendix A.

3.0 Groundwater-Depth Measurement

On December 27, 2018, groundwater depths were measured in the six monitoring wells. Information regarding groundwater depths, elevations, and well construction is summarized in Table 2. Depth measurements were made from the top of the PVC well casing, prior to well sampling. Groundwater was found at depths ranging from 6.54 to 8.48 feet below top of PVC casing. Groundwater elevations are shown on Figure 3. Contours and inferred-flow directions were not depicted due to the flat gradient.

4.0 Groundwater Analytical Results

During the December sampling event, DRO was not detected in any of the analyzed groundwater samples. Detected concentrations of ORO were below MTCA Method A cleanup level in all wells except GL-MW-4 and GL-MW-6. The field duplicate of MW-4 and a lab duplicate of MW-6 show detected concentrations below the cleanup level.

To assess if biological factors such as bacteria (resulting from the treatment compound added at the completion of the 2017 excavation), or other naturally occurring organic material (peat, roots, wood debris) may result in a false positive for ORO concentrations in groundwater, the water samples from selected wells also were analyzed using silica-gel methods. Based on the silica-gel results, ORO concentration dropped below the cleanup level, leaving all detected petroleum concentrations below cleanup levels.

Total arsenic was found above the cleanup level in all wells except GL-MW-4 and GL-MW-5. Dissolved arsenic was below the cleanup level in all wells except GL-MW-2, in which it was slightly above (5.78 ug/L).

Results of these analyses are presented in Table 1 of this report. Appendix A presents field-exploration methods, while Appendix B includes the laboratory reports and chain-of-custody forms.

5.0 Quality Assurance/Quality Control Findings

Laboratory duplicate samples, as well as two blind-duplicate groundwater samples (GL-MW-2, and GL-MW-4), were analyzed for data repeatability. The detected concentrations were within acceptable limits for laboratory-repeatability information. The laboratory also conducted matrix spike, matrix-spike duplicate, and method blank analyses. Laboratory QA/QC information is included (with the laboratory report) in Appendix B.

6.0 Conclusions

The findings of the quarterly groundwater sampling efforts are summarized below and are presented in Tables 1 and 2 of this report.

- Over the past four quarters of sampling, groundwater was encountered from approximately 6 to 11 feet below the ground surface. During the spring sampling event, groundwater-flow direction appeared to be to the northeast with a very flat gradient, however during the summer, fall, and winter events, groundwater-flow direction was not determined since the gradient was too flat to accurately assess.
- ORO in groundwater was detected slightly above the cleanup level in MW-4 and MW-6 over the last three quarters of sampling.
- DRO in groundwater was not detected above the cleanup level in any of the monitoring wells over the past four quarters.
- Selected groundwater-monitoring well samples also were analyzed using silica-gel methods. Based on the analytical results, both DRO and ORO concentration dropped, leaving all detected petroleum concentrations below cleanup levels.
- GRO and BTEX were not detected in any of the analyzed groundwater samples during the first two quarters, therefore they were removed from the list of analytes going forward.
- Total arsenic in groundwater was found above the cleanup level in all wells except GL-MW-4 (last three quarters) and GL-MW-5 (all four quarters).
- For groundwater samples that exhibited total arsenic concentrations above the cleanup level, duplicate samples were lab filtered to remove turbidity and then analyzed for dissolved arsenic concentrations.

- Dissolved arsenic in groundwater was below cleanup levels in all wells except GL-MW-2, in which it was slightly above for three of the four quarters. The first quarter for GL-MW-4 also was slightly above the cleanup level.
- Groundwater sampling work conducted during 2017 showed that GRO, BTEX, PCBs, VOCs, cPAHs were not detected in any of the analyzed groundwater samples. Naphthalene, and metals (with the exception of arsenic) were not detected above cleanup levels in any of the analyzed groundwater samples.

7.0 Discussion

Petroleum-contaminated soils and groundwater were removed through the remedial excavation conducted in November 2017. Confirmation soil samples collected during the excavation, as well as the additional soil sampling conducted during the March 2018 exploration, has confirmed that the petroleum-contaminated soils (associated with the former UST) have been successfully removed. This information also indicates the petroleum-contaminated soils did not extend beyond the remedial-excavation boundaries (see G-Logics *Well Installation and Groundwater Sampling* report dated April 12, 2018 for more information).

Based on the information gathered over the last four quarters of groundwater sampling, all detected DRO and ORO groundwater concentrations remained below cleanup levels when using silica-gel methods. Biological factors such as bacteria (resulting from the treatment compound added at the completion of the 2017 excavation), or other naturally occurring organic material (peat, roots, wood debris) may result in a false positive for ORO concentrations in groundwater, justifying the use of silica-gel methods.

Dissolved arsenic also now appears to be below the cleanup level in all wells except GL-MW-2. With respect to arsenic, historical review of the Site did not identify any commercial or industrial source of arsenic from prior activities or operations. The Site is within the Asarco area-wide smelter plume, and volcanic deposits from the Osceola mudflow also likely are present. Agricultural practices in the area also may have contributed to area-wide arsenic concentrations. Furthermore potential exposures to arsenic in the groundwater are very limited. Specifically, this area is covered with buildings or asphalt, prohibiting direct contact with the groundwater. Additionally, the shallow groundwater in this area likely would be of low quality and would yield insufficient quantities to be considered to be a viable source of drinking water. With these understandings, detected arsenic concentrations do not present a risk to human health or the environment, and it is our opinion that arsenic does not require further evaluation or remediation.

Analytical data shows ORO slightly exceeds the Method A cleanup level in groundwater found in GL-MW-4 and GL-MW-6. Furthermore, the use of silica-gel for samples collected from these wells indicate ORO is not present above the cleanup level. We recognize that the use of silica-gel currently is being evaluated.

Given the extensive remediation and the associated monitoring work conducted to date, we believe that further expenditure of resources is not warranted. Specifically, M&M Ventures and R&E Investments have successfully addressed the petroleum-contaminated soils and groundwater in this area of the two properties. Additionally, it has been previously established that residual elevated concentrations of petroleum hydrocarbons, in both soil and groundwater, do not extend beyond the Site boundaries.

8.0 Recommendations

The completed work documents the successful remediation of the former UST area. Groundwater monitoring indicates the low and residual arsenic and ORO concentration do not present an unacceptable risk. Accordingly G-Logics recommends that PLIA provide a No Further Action opinion for the Site.

9.0 Limitations

The scope of work on this project was presented in our identified workplan and subsequently approved by M&M Ventures and R&E Investments. Please be aware our scope of work was limited to those items specifically identified in the workplan. Other activities not specifically included in the presented scope of work (in a workplan, correspondence, or this report) are excluded and are therefore not part of our services.

The provided scope of services was intended to provide a quarterly assessment of groundwater conditions at the Site. This work was not designed to identify all potential concerns or to eliminate all risk. This work only included services specifically described above.

Land use, site conditions (both on-site and off-site), and other factors will change over time. Since site activities and regulations beyond our control could change at any time after the completion of this report, our observations, findings, and opinions can be considered valid only as of the date of the site sampling.

This report is prepared for the sole use of our client and reviewing regulatory agencies. The scope of services performed during this assessment may not be appropriate for the needs of other users. Re-use of this document or the findings, conclusions, or recommendations presented herein, are at the sole risk of said user(s). Any party other than our client who would like to use this report shall notify G-Logics of such intended use by executing the "Permission and Conditions for Use and Copying" contained in this document. Based on the intended use of the report, G-Logics may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements will release G-Logics from any liability resulting from the use of this report by any unauthorized party.

No warranty, either express or implied, is made.

10.0 Closing

We appreciate this opportunity to provide our services on this project. Please contact us at your convenience with any questions regarding our work or findings.

Sincerely,
G-Logics, Inc.

Rory Galloway

State of Washington
Hydrogeologist
2222
Licensed Geologist
RORY GALLOWAY

Rory L. Galloway, LG, LHG
Principal

Karis Vandehey, LG, WSLWD
Staff Geologist

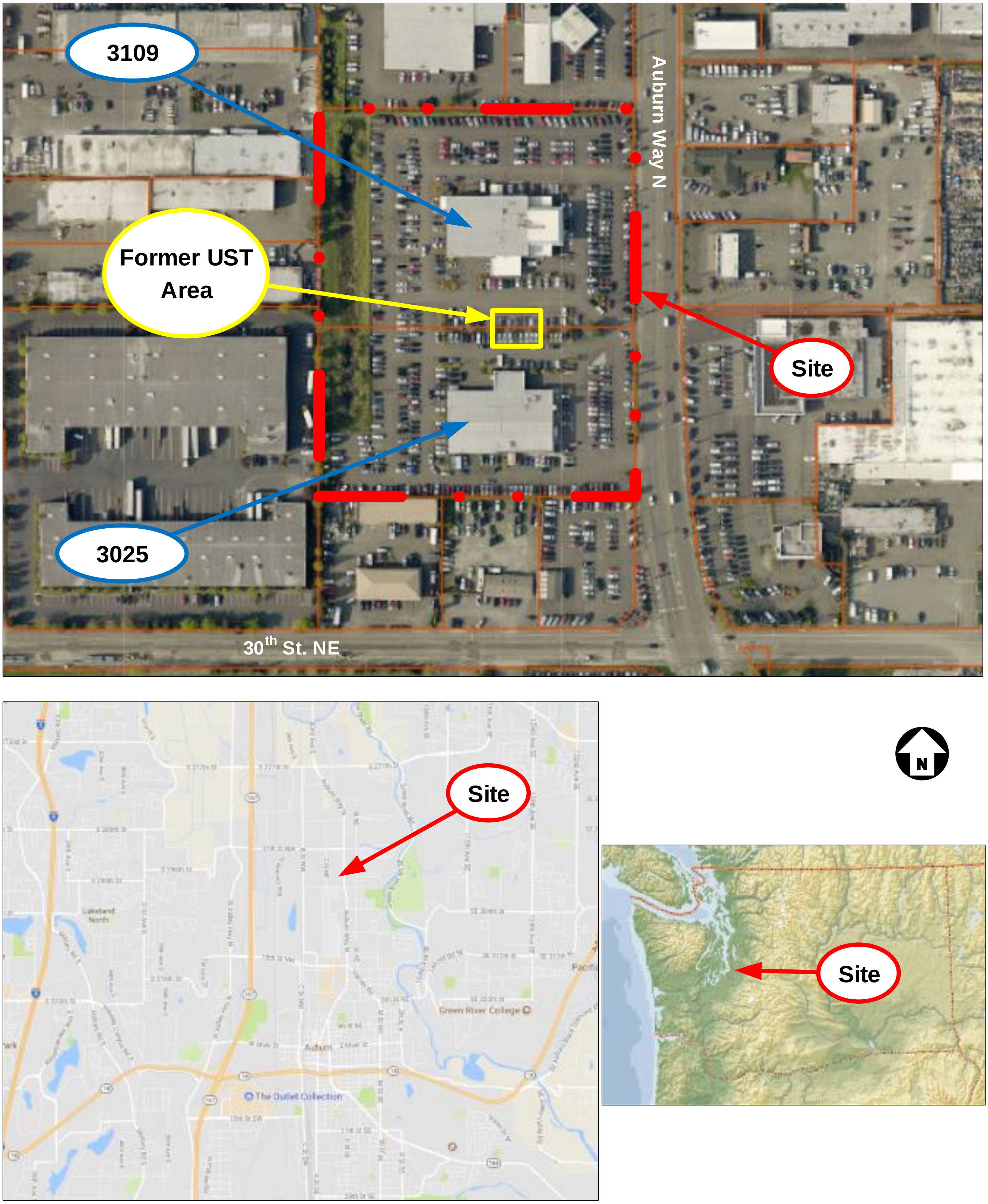
cc Greg Rairdon
Ken Lederman
Li Ma

FIGURES

TABLES

APPENDICES

ATTACHMENTS



Project File: 01-1140-F-F1.vsd

Site Location Maps

Auburn Way Property

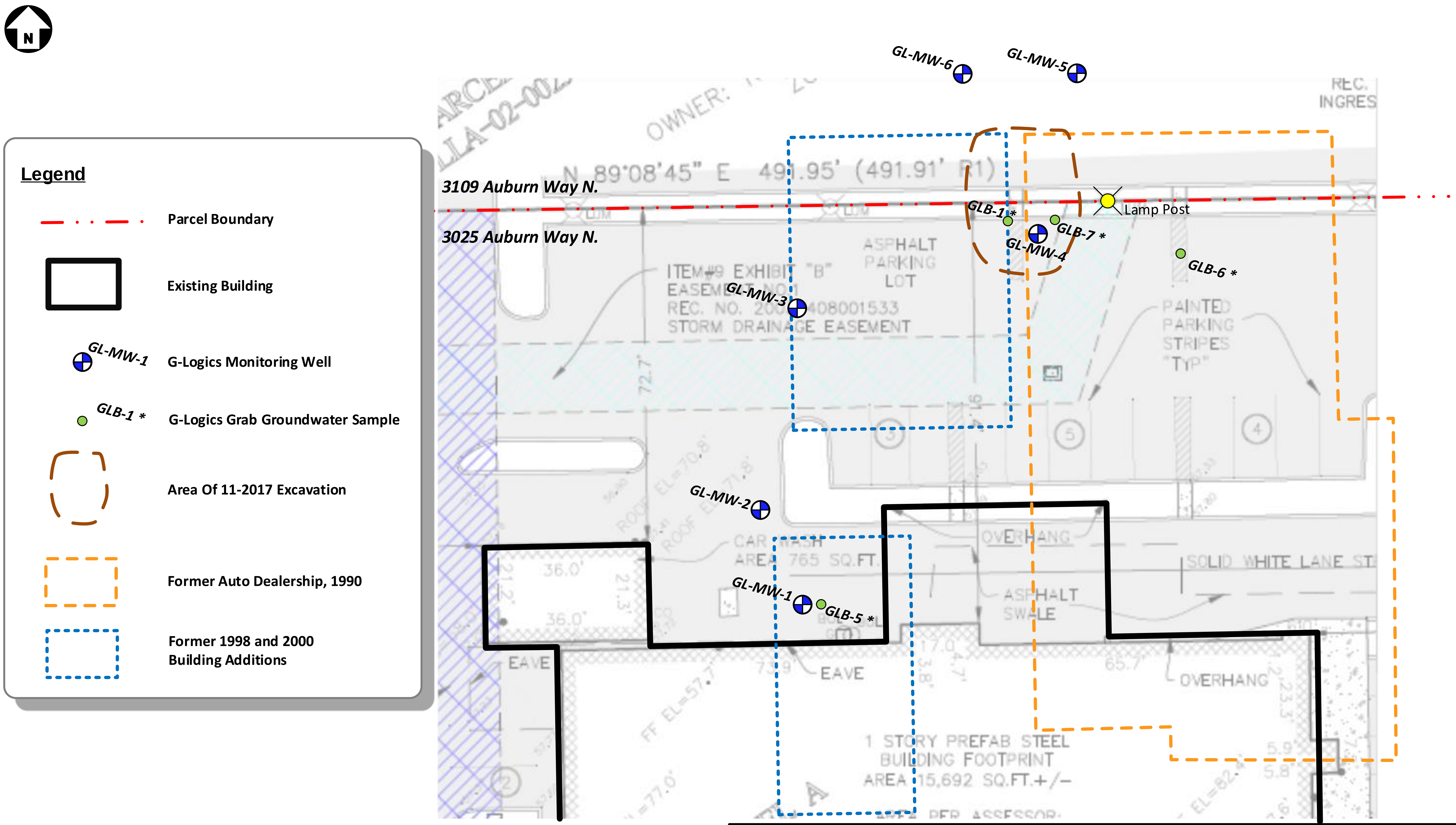
3025 and 3109 Auburn Way North

Auburn, Washington

Figure

1

Mapping Reference: King County iMap, Delorme, Google Maps, and G-Logics Site Visit Observations



Project File: 01-1140-F-F2.vsd

g-logics

Approximate Drawing Scale: 1" = 20'

0 ft. 12 ft. 20 ft. 40 ft.

Note: This figure contains information in color. Black & white photocopies may not be suitable for review.

Site Diagram, Groundwater Sample Locations

Auburn Way Properties

3025 and 3109 Auburn Way North

Auburn, Washington

Figure 2

Mapping Reference: ALTA/NSPS Land Title Survey 8/3/2017, Riley Phase I, and G-Logics Site Visit Observations and Measurements

Legend

Parcel Boundary

Existing Building

GL-MW-1 48.76' G-Logics Well Elevation

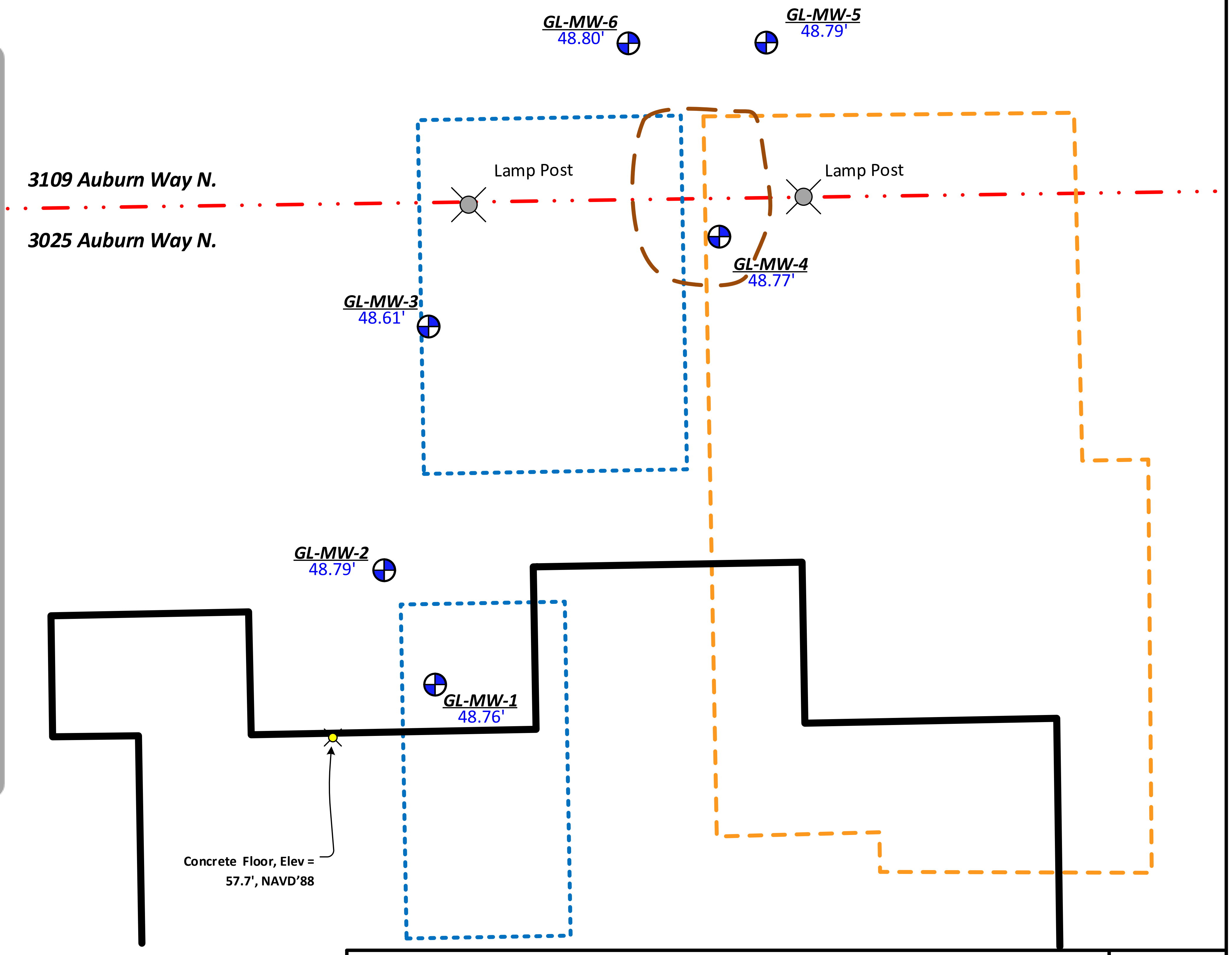
48.80' Inferred groundwater elevation contour (not shown given flat gradient)

Inferred groundwater flow direction (not shown given flat gradient)

Area Of 11-2017 Excavation

Former Auto Dealership, 1990

Former 1998 and 2000 Building Additions



Notes

1. Vertical datum: NAVD88.
2. The contours represent an interpretation of available data, for the indicated date. Site groundwater contours may change with additional measurements and/or data points, weather changes, construction activities, and/or other influences.

Project File: 01-1140-F-F3-December 2018.vsd

g-logics

Approximate Drawing Scale: 1" = 20'

0 ft. 12 ft. 20 ft. 40 ft.

Note: This figure contains information in color. Black & white photocopies may not be suitable for review.

Groundwater Elevations (12/27/2018)

Auburn Way Properties

3025 and 3109 Auburn Way North

Auburn, Washington

Figure 3

Mapping Reference: Terrane ALTA/NSPS Land Title Survey 8/3/2017, Riley Phase I, and G-Logics Site Visit Observations and Measurements

TABLE 1 (1)
Groundwater Sample Analyses

Auburn Way Property
3025 Auburn Way North
Auburn, Washington

Exploration Location	Sample Date	Sample Number	Sample Depth (ft)	Gasoline Range Organics (no detectable benzene)	Diesel Range Organics	Diesel Range Organics (SGT)	Heavy Oil Range Organics	Heavy Oil Range Organics (SGT)	Benzene	Toluene	Ethylbenzene	Xylenes	Arsenic (Total)	Arsenic (Dissolved)	Cadmium	Chromium (Total)	Lead	Mercury	Total PCBs (a)	VOCs (a)	2-Methylnaphthalene	cPAHs (a)
MTCA Cleanup Level (2)(3)				1,000	500	500	500	500	5.00	1,000	700	1,000	5	5	5	50	15	2	0.100	Various	32*	0.1
(units in ug/L)																						
Stemen Environmental Inc.																						
December, 2012																						
S1	12/12/2012	S1-W	8	<100	<250	---	<500	---	<1	<1	<1	<3	---	---	---	---	---	---	---	nd	---	---
S4 (b)	12/12/2012	S4-W	8	<100	<250	---	<500	---	<1	<1	<1	<3	---	---	---	---	---	---	---	---	---	---
S6	12/12/2012	S6-W	8	<100	<250	---	<500	---	<1	<1	<1	<3	---	---	---	---	---	---	---	---	---	---
Stemen Environmental Inc.																						
December, 2012																						
R2 (b)	6/2/2017	R2-W		<100	<250	---	<500	---	<1	<1	<1	<3	---	---	---	---	**15**	---	---	nd	---	---
R5 (b)	6/2/2017	R5-W		<100	<250	---	<500	---	<1	<1	<1	<3	---	---	---	---	---	---	---	---	---	---
G-Logics																						
July, 2017 (Pre Remedial Eacvation)																						
GLB-1-W (4)	7/21/2017	GLB-1-W	9-14ft	<50	<49.9	---	**1,670**	**1,210**	<1	<1	<1	<1	**2.44**	---	<0.200	**1.79**	**2.06**	<0.100	<0.100	nd	<0.0997	nd
GLB-5-W (4)	7/21/2017	GLB-5-W	9-14ft	<50	<49.9	---	**700**	**599**	<1	<1	<1	<1	**20.7**	**5.19**	<0.200	**8.68**	**0.592**	<0.100	---	nd	---	---
GLB-6-W (4)	7/21/2017	GLB-6-W	9-14ft	<50	<49.9	---	**161**	---	<1	<1	<1	<1	**6.25**	---	<0.200	**2.00**	**1.32**	<0.100	---	nd	---	---
GLB-7-W (4)	7/21/2017	GLB-7-W	9-14ft	<50	**1,200**	**857**	**4,370**	**3,090**	<1	<1	<1	<1	**19.0**	**6.94**	<0.200	**1.87**	**1.89**	<0.100	<0.999	nd	**0.143**	nd
GL-MW-1	7/31/2017	GL-MW-1	5-15ft	---	<49.9	---	**426**	---	---	---	---	---	**25.0**	**20.7**	---	---	---	---	---	---	---	---
	7/31/2017	GL-MW-100	Field Dup.	---	<49.8	---	**375**	---	---	---	---	---	**27.9**	**21.1**	---	---	---	---	---	---	---	---

TABLE 1 (1)

Groundwater Sample Analyses

Auburn Way Property
3025 Auburn Way North
Auburn, Washington

Exploration Location	Sample Date	Sample Number	Sample Depth (ft)	Gasoline Range Organics (no detectable benzene)	Diesel Range Organics	Diesel Range Organics (SGT)	Heavy Oil Range Organics	Heavy Oil Range Organics (SGT)	Benzene	Toluene	Ethylbenzene	Xylenes	Arsenic (Total)	Arsenic (Dissolved)	Cadmium	Chromium (Total)	Lead	Mercury	Total PCBs (a)	VOCs (a)	2-Methylnaphthalene	cPAHs (a)
MTCA Cleanup Level (2)(3)				1,000	500	500	500	500	5.00	1,000	700	1,000	5	5	5	50	15	2	0.100	Various	32*	0.1
(units in ug/L)																						
G-Logics																						
Post Remedial Excavation																						
GL-MW-1	3/20/2018	GL-MW-1	5-15ft	<50	**119**	---	**219**	---	<1	<1	<1	<1	**26.0**	**4.31**	---	---	---	---	---	---	---	---
	3/20/2018	GL-MW-A	Field Dup.	<50	**78.1**	---	**291**	---	<1	<1	<1	<1	**27.0**	**4.61**	---	---	---	---	---	---	---	---
	6/26/2018	GL-MW-1	5-15ft	<50	**78.9**	**63.3**	**307**	**232**	<1	<1	<1	<1	**30.8**	**3.00**	---	---	---	---	---	---	---	---
	9/24/2018	GL-MW-1	5-15ft	---	**97.5**	**81.2**	**255**	<99.6	---	---	---	---	**38.6**	**4.83**	---	---	---	---	---	---	---	---
	12/27/2018	GL-MW-1	5-15ft	---	<50	---	**323**	---	---	---	---	---	**37.4**	**3.87**	---	---	---	---	---	---	---	---
GL-MW-2	3/20/2018	GL-MW-2	5-15ft	<50	<49.9	---	**161**	---	<1	<1	<1	<1	**44.3**	**14.1**	---	---	---	---	---	---	---	---
	6/26/2018	GL-MW-2	5-15ft	<50	<50	<50	**209**	**156**	<1	<1	<1	<1	**100**	**4.24**	---	---	---	---	---	---	---	---
	9/24/2018	GL-MW-2	5-15ft	---	<50.4	<50.4	**208**	**142**	---	---	---	---	**113**	**11.70**	---	---	---	---	---	---	---	---
	12/27/2018	GL-MW-2	5-15ft	---	<49.7	---	**228**	---	---	---	---	---	**117**	**5.78**	---	---	---	---	---	---	---	---
	12/27/2018	GL-MW-B	Field Dup.	---	---	---	---	---	---	---	---	---	**122**	**5.75**	---	---	---	---	---	---	---	---
GL-MW-3	3/20/2018	GL-MW-3	5-15ft	<50	<49.9	---	<99.9	---	<1	<1	<1	<1	**25.7**	**4.56**	---	---	---	---	---	---	---	---
	6/26/2018	GL-MW-3	5-15ft	<50	<49.8	<49.8	**125**	<99.7	<1	<1	<1	<1	**24.2**	<1.75	---	---	---	---	---	---	---	---
	9/24/2018	GL-MW-3	5-15ft	---	**56.1**	<49.6	**127**	<99.1	---	---	---	---	**24.7**	**3.18**	---	---	---	---	---	---	---	---
	12/27/2018	GL-MW-3	5-15ft	---	<50.3	---	**155**	---	---	---	---	---	**25.2**	**1.97**	---	---	---	---	---	---	---	---
GL-MW-4	3/20/2018	GL-MW-4	5-15ft	<50	**152**	---	**259**	---	<1	<1	<1	<1	**6.16**	**6.15**	---	---	---	---	---	---	---	---
	6/26/2018	GL-MW-4	5-15ft	<50	**152**	**148**	**798**	**461**	<1	<1	<1	<1	**2.90**	---	---	---	---	---	---	---	---	---
	9/24/2018	GL-MW-4	5-15ft	---	**149**	**119**	**759**	**499**	---	---	---	---	**3.43**	---	---	---	---	---	---	---	---	---
	12/27/2018	GL-MW-4	5-15ft	---	<49.7	<49.7	**725**	**300**	---	---	---	---	**2.17**	---	---	---	---	---	---	---	---	---
	12/27/2018	GL-MW-A	Field Dup.	---	<50.1	<50.1	**489**	**234**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GL-MW-5	3/20/2018	GL-MW-5	5-15ft	<50	<50	---	<100	---	<1	<1	<1	<1	**1.80**	<1.75	---	---	---	---	---	---	---	---
	6/26/2018	GL-MW-5	5-15ft	<50	<49.9	---	<99.8	---	<1	<1	<1	<1	**2.54**	---	---	---	---	---	---	---	---	---
	9/24/2018	GL-MW-5	5-15ft	---	<49.7	<60.6	**114**	<121	---	---	---	---	**2.00**	---	---	---	---	---	---	---	---	---
	12/27/2018	GL-MW-5	5-15ft	---	<50	---	**117**	---	---	---	---	---	<1.75	---	---	---	---	---	---	---	---	---

Table is in color, black and white copies may not be suitable for review.

TABLE 1 (1)
Groundwater Sample Analyses
Auburn Way Property
3025 Auburn Way North
Auburn, Washington

Exploration Location	Sample Date	Sample Number	Sample Depth (ft)	Gasoline Range Organics (no detectable benzene)	Diesel Range Organics	Diesel Range Organics (SGT)	Heavy Oil Range Organics	Heavy Oil Range Organics (SGT)	Benzene	Toluene	Ethylbenzene	Xylenes	Arsenic (Total)	Arsenic (Dissolved)	Cadmium	Chromium (Total)	Lead	Mercury	Total PCBs (a)	VOCs (a)	2-Methylnaphthalene	cPAHs (a)
MTCA Cleanup Level (2)(3)				1,000	500	500	500	500	5.00	1,000	700	1,000	5	5	5	50	15	2	0.100	Various	32*	0.1
(units in ug/L)																						
GL-MW-6	3/20/2018	GL-MW-6	5-15ft	<50	**69.8**	---	**346**	---	<1	<1	<1	<1	**11.1**	**2.57**	---	---	---	---	---	---	---	---
	6/26/2018	GL-MW-6	5-15ft	<50	**102**	**81.3**	**608**	**438**	<1	<1	<1	<1	**8.96**	<1.75	---	---	---	---	---	---	---	---
	6/26/2018	GL-MW-A	Field Dup.	<50	**58.7**	<49.9	**658**	**441**	<1	<1	<1	<1	**8.82**	---	---	---	---	---	---	---	---	---
	9/24/2018	GL-MW-6	5-15ft	---	**128**	**100**	**510**	**276**	---	---	---	---	**9.41**	**2.85**	---	---	---	---	---	---	---	---
	9/24/2018	GL-MW-A	Field Dup.	---	**154**	**121**	**545**	**380**	---	---	---	---	**9.43**	---	---	---	---	---	---	---	---	---
	12/27/2018	GL-MW-6	5-15ft	---	<50.2	<50.2	**596**	**289**	---	---	---	---	**9.16**	**2.16**	---	---	---	---	---	---	---	---
	12/27/2018	GL-MW-6	Lab Dup.	---	<50.3	---	**499**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes:

(1)	Refer to site diagram(s) for sampling locations. Refer to laboratory reports for analytical methods.
(2)	Available Method A Cleanup Levels or Most Conservative Method B Cleanup Levels, MTCA, revised 2015. Exceeding Cleanup Levels does not necessarily trigger requirements for Cleanup Actions under MTCA. Refer to site diagram(s) for sampling locations.
(3)	Gasoline Analyses by Method NWTPH-Gx, Diesel and Heavy Oil by NWTPH-Dx/Dx Ext., MTCA 5 Metals by 200.8/245.1, VOCs by 8260C, PAH by 8270 (SIM), PCB by 8082.
(4)	Grab Groundwater Sample
(a)	Analytes were not detected. See attached analytical laboratory reports for details.
(b)	No analytical laboratory report included in the Stemen Environmental report to verify analytical data.
*	Method B Cleanup Level.
**	Not researched, no available data.
---	Sample not analyzed.
nd	Not Detected
Dup.	Duplicate Sample for QA/QC.
<50.0	Sample concentration below laboratory reporting limit.
27	Bold number(s) indicates contaminant detected, below cleanup level.
160	Bold number(s) and yellow shading indicates concentration exceeds MTCA Cleanup Level.
SGT	Silica Gel Treatment
12/27/2018	Indicates most recent sampling event.

Important Note: This Table Contains Information in color.
Black & white photocopies may not be suitable for review.

TABLE 2

Groundwater Elevation Measurements
Auburn Way Properties

Well Designation	Well Installation Date	Elevation Top of PVC Casing (ft.)* (1)	Depth to Top of Screen (ft.)	Depth to Bottom of Screen (ft.)	Well Diam. (in.)	Date Measured	Depth to Water (ft.)	Calculated GW Elevations (ft.)
GL-MW-01	7/31/18	57.20	5	15	2	03/14/18	8.11	49.09
						03/20/18	8.29	48.91
		57.24				06/26/18	9.67	47.57
						09/24/18	10.71	46.53
						12/27/18	8.48	48.76
GL-MW-02	3/12/18	56.64	5	15	2	03/14/18	7.53	49.11
						03/20/18	7.68	48.96
		56.66				06/26/18	9.08	47.58
						09/24/18	10.12	46.54
						12/27/18	7.87	48.79
GL-MW-03**	3/12/18	56.09	5	15	2	03/14/18	7.03	49.06
	3/20/18		5	15	2	03/20/18	7.21	48.88
		56.13				06/26/18	8.54	47.59
						09/24/18	9.59	46.54
						12/27/18	7.52	48.61
GL-MW-04	3/12/18	55.87	5	15	2	03/14/18	6.85	49.02
						03/20/18	7.02	48.85
		55.97				06/26/18	8.39	47.58
						09/24/18	9.45	46.52
						12/27/18	7.20	48.77
GL-MW-05	3/12/18	55.18	5	15	2	03/14/18	6.19	48.99
						03/20/18	6.35	48.83
		55.33				06/26/18	7.75	47.58
						09/24/18	8.79	46.54
						12/27/18	6.54	48.79
GL-MW-06	3/13/18	55.53	5	15	2	03/14/18	6.52	49.01
						03/20/18	6.7	48.83
		55.67				06/26/18	8.07	47.60
						09/24/18	9.12	46.55
						12/27/18	6.87	48.80

Notes:

(1) Original survey was completed on 3/13/2018, prior to the reinstallation of GL-MW-3. Updated survey of all wells was completed on 6/26/2018.

* Elevations based on a backsight to the concrete floor at the north entrance of the auto shop. The floor elevation at this location is 57.7’ (Figure 2).

** GL-MW-3 was installed on 3/12/18. Due to drillers sand continually coming into the well durring development (broken screen?), the original well was decommissioned and reinstalled on 3/20/18.

Depth not recorded.

-- Not Applicable.

Appendix B

1889

State of Washington
POLLUTION LIABILITY INSURANCE AGENCY
300 Desmond Drive SE • PO Box 40930 • Olympia, Washington 98504-0930
(360) 407-0520 • (800) 822-3905 • FAX (360) 407-0509
www.plia.wa.gov

May 6, 2019

Ms. Karis Vandehey
G-Logics, Inc.
40 2nd Ave SE
Issaquah, WA 98027

Re: No Further Action at the Following Site:

- **Site Name:** Auburn Way Properties
- **Site Address:** 3025 and 3109 Auburn Way N, Auburn, WA 98002
- **Facility/Site ID:** 57361549
- **PTAP Project ID:** PNW030

Dear Ms. Vandehey:

The Washington State Pollution Liability Insurance Agency (PLIA) received your request for an opinion on your independent cleanup of the Auburn Way Properties (Site), by G-Logics, Inc.

This letter constitutes an advisory opinion regarding a review of submitted documents/reports pursuant to the substantive requirements of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW and WAC 173-340-515 (Independent Remedial Actions), for characterizing and addressing releases discussed below at the Site.

Issue Presented and Opinion

Is further remedial action necessary to clean up contamination at the Site?

No. PLIA has determined that no further remedial action is necessary to clean up contamination at the Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

Description of the Site

This opinion applies only to the Site located at 3025 and 3109 Auburn Way N, Auburn, Washington and comprises two King County parcels described below (Fig. 1). This opinion does not apply to any other release(s) that may affect the Properties. Any such sites, if known, are identified separately below.

1. Description of the Properties and Tax Parcels within the Site.

The Properties include the following tax parcel(s) in King County, affected by the Site and addressed by your cleanup (Fig. 1):

- Tax Parcel No. 0004000039
- Tax Parcel No. 0004000041

2. Description of the Site.

The two parcels that make up the Site are defined by the nature and extent of contamination associated with the following release (Figs. 2 and 3):

- Total petroleum hydrocarbons (TPH-g, TPH-d, and TPH-o) and arsenic in the soil/groundwater/vapor.

3. Identification of Other Sites that may affect the Property.

Please note a parcel of real property can be affected by multiple sites. At this time, we have no information that these Properties were affected by other sites.

Enclosure A includes a detailed description and diagram of the Site, as currently known to PLIA.

Basis for the Opinion

This opinion is based on the information contained in the following documents:

- Natural Background Groundwater Arsenic Concentrations in Washington State. Toxics Cleanup Program. May 2018, Review Draft. Publication No. 14-09-044.
- Groundwater-Sampling Report, December 2018. Fourth Quarter Groundwater Sampling Results. Facility/Site No. 57361549. PTAP Project No. PNW030, Auburn Way Properties, 3025 and 3109 Auburn Way N, Auburn, WA 98002, G-Logics Project Number 1-1140-E, February 5, 2019.
- Groundwater-Sampling Report, September 2018. Third Quarter Groundwater Sampling Results. Facility/Site No. 57361549. PTAP Project No. PNW030, Auburn

Way Properties, 3025 and 3109 Auburn Way N, Auburn, WA 98002, G-Logics Project Number 1-1140-E, October 23, 2018.
- Groundwater-Sampling Report, December 2018. Second Quarter Groundwater Sampling Results. Facility/Site No. 57361549. PTAP Project No. PNW030, Auburn Way Properties, 3025 and 3109 Auburn Way N, Auburn, WA 98002, G-Logics Project Number 1-1140-E, August 20, 2018.
- Well Installation and Groundwater Sampling. Facility/Site No. 57361549, PTAP Project No. PNW030, Auburn Way Properties, 3025 and 3109 Auburn Way N, Auburn, WA 98002, G-Logics Project Number 01-1140-E, April 12, 2018.
- Environmental Media Management Report, Soil Removal and Sampling, Auburn Way Properties, 3025 and 3109 Auburn Way N, Auburn, WA 98002, G-Logics Project Number 01-1140-C, December 4, 2017.
- Additional Soil and Groundwater Sampling. Auburn Way Properties, 3025 and 3109 Auburn Way N, Auburn, WA 98002, G-Logics Project Number 01-1140-B, August 13, 2017.

Documents submitted to PLIA are subject to the Public Records Act (Chapter 42.56 RCW). To request public records, please email pliamail@plia.wa.gov.

This opinion is void if any information contained in those documents is materially false or misleading.

Analysis of the Cleanup

1. Cleanup of the Site

PLIA has concluded that **no further remedial action** is necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

a. Characterization of the Site

PLIA has determined that the characterization of the Site was sufficient to establish cleanup standards and select a cleanup action. That conclusion is based on the following analysis:

Conceptual Site Model (CSM)

i. **Direct Contact:** The completed borings were advanced to depths ranging from approximately 11.5’ to 15’ below ground surface (bgs), which generally encountered a structural-fill material from the surface to approximately a depth of 4’ to 5’. The fill consisted of a silty sand and gravel mix. Fine grain native soils were encountered below the fill, generally consisting of silt with clay to a depth of 8’ to 9’ followed by silty, fine grain sand to the bottom of the borings.

On the western edge of the former automobile dealership/service garage, a 550-gallon used-oil underground storage tank (UST) was discovered and subsequently removed. In 2012, Stemen Environmental conducted a phase II exploration in this area to determine if the former UST had impacted the soil and groundwater at the Site. Soil and groundwater samples were collected on both the 3025 and 3109 Properties, with results yielding concentrations of total petroleum hydrocarbons in the gasoline and heavy oil ranges (TPH-g/o), respectively, above the MTCA Method A cleanup levels for soil and groundwater. Soil boring S4 detected concentrations of 500 mg/kg TPH-g and 3,800 mg/kg TPH-o above the MTCA Method A cleanup level of 100 mg/kg TPH-g and 2,000 mg/kg TPH-o. Additional sampling work was performed again in 2017 with TPH-o as the only constituent of concern (COC) that was above MTCA Method A cleanup levels. G-Logics then mobilized to the Site to provide additional data for the former UST area. TPH-o was found exceeding the MTCA Method A cleanup levels on the 3025 Property at soil borings GLB-1 and GLB-7 with concentrations of TPH-o at 5,990 mg/kg and 3,250 mg/kg respectively.

The location of the PCS was within the depths (0 to 15’ bgs) that humans (utility workers and property developers) may come in contact with.

Result: The direct contact exposure pathway was a concern at the Site.

ii. **Vapor Exposure:** The 3025 and 3109 Properties building footprints and other nearby off-property buildings boundaries are about 70’ outside the lateral inclusion zone of 30’ from the edge of the contamination area (Fig. 2). The utility overlay showed the storm-water easement is about 45’ from the building (Fig. 2). The lateral inclusion zone is defined as the area surrounding a contaminant source through which vapor phase contamination might travel and intrude into buildings (ITRC 2018, EPA 2018, Ecology Draft VI Guidance update 2018).

Result: The vapor exposure pathway is not a concern at the Site.

iii. **Groundwater:** Depth to the shallow groundwater at the Site ranges from 6’ to 11’ bgs based on grab samples and groundwater level measurement from monitoring wells. Measured groundwater elevations indicate that groundwater flow is toward the northeast, with a flat gradient. TPH-d was detected above MTCA cleanup levels pre-excavation in GLB-7-W. TPH-o was detected above MTCA pre-excavation in GLB-1-W, GLB-5-W, and GLB-7-W. Arsenic (total) was detected above MTCA cleanup levels in GLB-5-W, GLB-6-W, GLB-7-W and GL-MW-1. Arsenic (dissolved) was detected above MTCA cleanup levels in GLB-5-W, GLB-7-W and GL-MW-1 (Table 4).

Result: The groundwater pathway was a concern at the Site.

iv. **Surface water:** The Green River is about 2,500' east of the Site.

Result: Surface water is not a concern at the Site.

b. **Establishment of cleanup standards.**

PLIA has determined the cleanup levels and points of compliance you established for the Site meet the substantive requirements of MTCA.

i. **Cleanup Levels**

Table 1. The COCs and cleanup levels are:

Contaminants of Concern (COCs)	Soil Cleanup Level mg/kg (**Method A**) Un-restricted Land Use	Groundwater Cleanup Level ug/l (Method A)	Sub-slab/soil gas Screening Levels ug/m^3 (Method B SL)	Indoor/Air Cleanup Levels ug/m^3 (Method B CUL)
TPH-d	2,000	500	-	-
TPH-o	2,000	500	-	-
TPH-g	100/30	1000/800	-	-
Benzene (carcinogen)	0.03	5	-	0.321
Toluene	7	1000	-	2290
Ethylbenzene	6	700	-	457
Xylenes, -m, -o	9	1000	-	45.7
Naphthalene (**carcinogen**) (does not include 1-methyl and 2-methyl naphthalene)	-	-		0.0735
Total Petroleum Hydrocarbon	-	-	-	140
APH [EC5-8 Aliphatics]	-	-	-	2,700
APH [EC9-12 Aliphatics]	-	-	-	140
APH [EC9-10 Aromatics]	-	-	-	180
Arsenic	20	5	-	-

* Based on the current attenuation factor of 0.03.

ii. Points of Compliance.

The proposed Points of Compliance are:

Soil-Direct Contact: For soil cleanup levels based on human exposure via direct contact, the point of compliance is: "*…throughout the Site from ground surface to 15 ft. below the ground surface.*"

Groundwater: For groundwater, the standard point of compliance as established under WAC 173-340-720(8) is: "*…throughout the Site from the uppermost level of the saturated zone extending vertically to the lowest most depth which could potentially be affected by the Site.*"

Vapor: Ambient and indoor air throughout the Site.

c. Selection of cleanup action.

PLIA has determined the cleanup action you selected for the Site meets the substantive requirements of MTCA.

i. Decommissioning of former USTs

- 550-gallon used-oil UST was removed.
- Excavation and removal of 384 tons of PCS at the Site.
- Conducted soil confirmation sampling post excavation to assess the effectiveness of the cleanup action.
- Conducted groundwater monitoring (2018) post excavation to confirm the effectiveness of the cleanup action.

2. Cleanup.

PLIA has determined the cleanup action you performed at the Site meets the substantive requirements of MTCA.

a. Direct contact, groundwater, surface water and vapor exposure pathways:

i. Decommissioning of former UST.
The former 550-gallon diesel UST was permanently decommissioned by removal.

ii. Excavation and removal of PCS at the Site:
The lateral and vertical extent of PCS detected at the Site was successfully excavated to levels below the MTCA Method A cleanup level for unrestricted land use of 2,000 mg/kg for TPH-d-o.

iii. **Conducted performance sampling** of the soil and groundwater to confirm effectiveness of the remedial action.

Soil Direct Contact - Points of Compliance: The limit of the excavation is bounded by the extent of PCS confirmation sampling results below cleanup levels: laterally, to the north it is bounded by Borings NWB-10, VW-3-7.5, NCS-5.5, and NEB-9. To the east it is bounded by Borings VW-5-7.5, PL-5-9.5, PL-3-7.5, PL-6-9, and SEW-5.5. The excavation is bound to the south by Borings GB-1-3, GB-1-4.5, and SWB-9. The excavation is bound to the west by Boring WS-5.5, WSB-10.5, VW-6-5.5 and VW-6-9. The base of the excavation is bound by Borings PL-7-9, PL-7-10, SWW-6.5, SB-7.5, SWW-5, SB2-9.5, PL-4-10, PL-3-7.5, PL-6-9, VW-2-3, VW-2-4.5, VW-2-8, VW-2-10, and NCB-10 (Fig. 3 and Table 2). The Performance sampling results for the PCS is below the MTCA Method A cleanup level for unrestricted land use of 2,000 mg/kg for TPH-d-o.

<u>Result: The soil direct contact pathway is no longer a concern at this Site.</u>

Groundwater Exposure Pathway- Points of Compliance: The effectiveness of the remedial action for groundwater is depicted by groundwater quality sampling results below cleanup levels: The Site wells (GL-MW-1 through GL-MW-6) were <u>below MTCA Method A cleanup Levels</u> for TPH-d, TPH-o and BTEX for four consecutive quarters.

Silica gel sample cleanup was utilized in all groundwater analytical samples submitted to remove interference from non-petroleum organic materials (peat, bark, leaf litter, etc.) that naturally occurred at the Site. This was done in accordance to NWTPH-d analytical methodology. The analytical results for samples prior to silica gel cleanup, and post silica gel cleanup are depicted in Tables 3 and 4.

Concentrations of dissolved arsenic in groundwater samples exceeded MTCA Method A cleanup levels prior to the remedial excavation and post remedial excavation. G-Logics performed a literature search that indicated the background level of arsenic in the groundwater at the Site is 8.0 µg/L (Fig. 5). When this background concentration is subtracted from the laboratory data for groundwater at the site, four quarters of sampling below <u>MTCA Method A cleanup levels</u> were observed regarding Arsenic at the Site.

<u>Result: The groundwater exposure pathway is no longer a concern at this Site.</u>

Limitations of the Opinion

1. Opinion does not settle liability with the state.

Under the MTCA, liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release(s) of hazardous substances at the Site. This opinion **does not:**

- Change the boundaries of the Site.
- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with the Office of the Attorney General and the Department of Ecology under RCW 70.105D.040 (4).

2. Opinion does not constitute a determination of substantial equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is equivalent. Courts make that determination (RCW 70.105D.080 and WAC 173-340-545).

3. State is immune from liability.

The state, PLIA, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion.

Termination of Agreement

Thank you for choosing to cleanup your Property under the Petroleum Technical Assistance Program (PTAP). This opinion terminates the PTAP Agreement governing Project #PNW030.

Contact Information

If you have any questions about this opinion, please contact us by phone at 1-800-822-3905, or by email at li.ma@plia.wa.gov or caleb.kaiser@plia.wa.gov.

Sincerely,

State of Washington
Hydrogeologist
1168
Licensed Geologist
Li Ma

Li Ma, PHD, LHG, CGWP
Hydrogeologist

Caleb Kaiser
Environmental Specialist

Enclosure A: Figure 1: Site Vicinity Map
Figure 2: Exploration Locations with Survey
Figure 3: Excavation Boundary and POCs
Figure 4: Groundwater Flow Direction
Figure 5: Groundwater Background Arsenic Concentrations in Washington State
Table 1: Soil Data Pre-Excavation
Table 2: Soil Data Post-Excavation
Table 3: Groundwater Data Pre-Excavation
Table 4: Groundwater Data Post-Excavation

cc: Mr. Roger Vermazen, R&E Investments, LLC.
Mr. Mike Scarff, M&M Ventures, LLC
Mr. Matthew Welsh, Conducere Investments, LLC.
Mr. Greg Rairdon, Rairdon Auto Group
Mr. Rory Galloway, G-Logics, Inc. (email only)
Ms. Shanyese Trujillo, PLIA (email only)
Mr. Nnamdi Madakor, PLIA (email only)
Ms. Kristin Evered, PLIA (email only)

Enclosure A

Auburn Way Properties Site – PNW030

Description of the Site:

Setting: The Site is composed of two properties, 3025 and 3109 Auburn Way N, occupying two King County tax parcels (0004000039 and 0004000041).

Historical Use: The area that the Site resides in was previously used as agricultural land prior to the 1970s. Since the early 1970s, the land was developed and used historically as an automobile dealership and a service garage. A former 550-gallon used oil UST was removed from the west side of the former dealership building located on the 3025 Property.

Current Use: The Site is located adjacent to several industrial properties and is currently an automobile dealership and service garage.

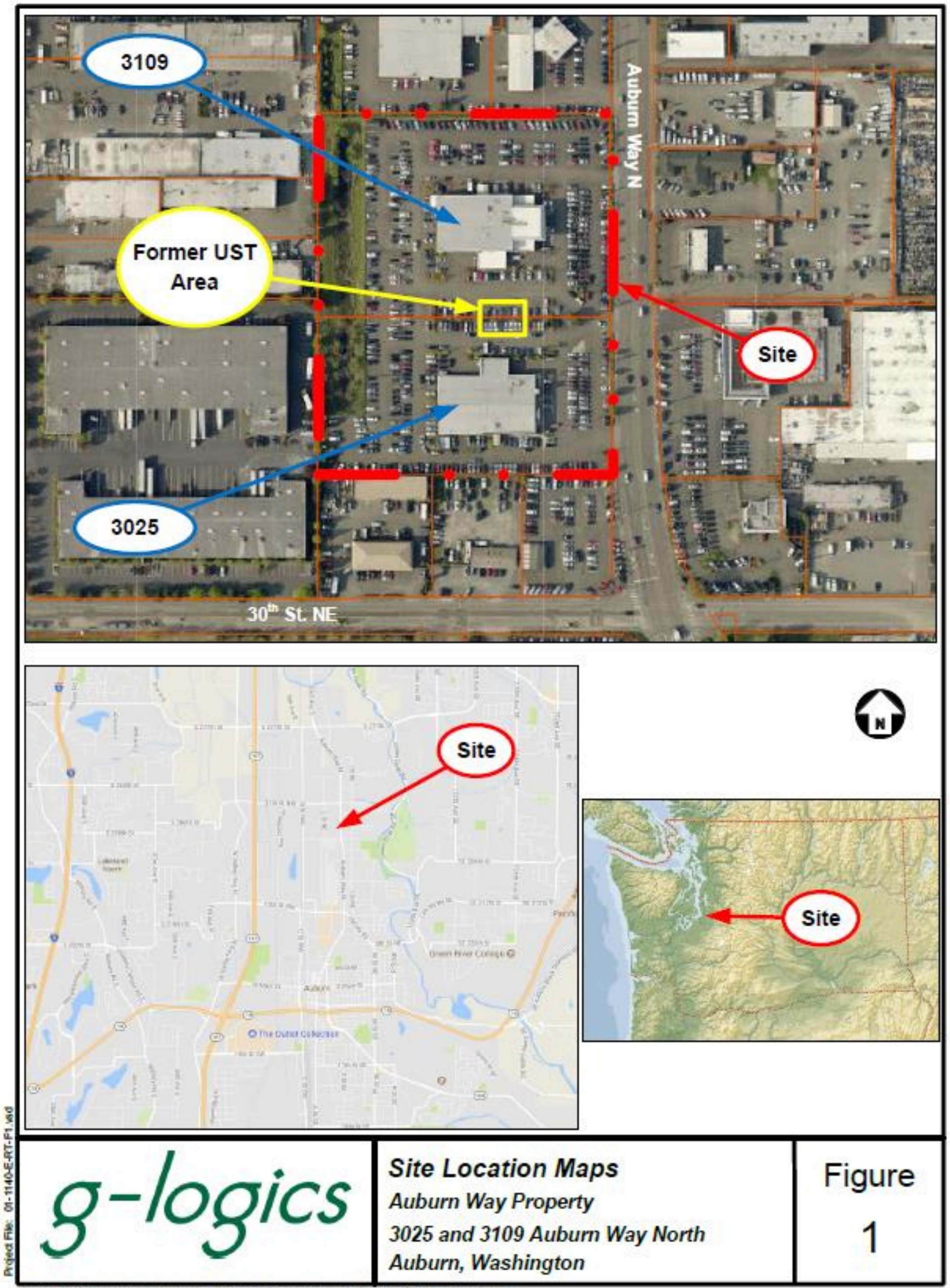
Geology: Soil at the Site consisted of a structural-fill material. The fill consisted of a silty sand and gravel mix from the surface to approximately 4.5'-5' bgs. Fine-grained native soils were found below the fill material, generally consisting of silt with clay to a depth of 8'-9' bgs. This layer was followed by silty, fine grained sand to the bottom of the excavation.

Hydrogeology: Groundwater was encountered at 8' bgs but was determined to fluctuate in between 6' and 11' bgs. Groundwater well elevations indicate that groundwater flow is to the northeast. The Green River is 2,500' east of the Site.

Site Investigations: In June 2017, Stemen Environmental, Inc. performed a Phase II exploration at the Site. TPH-g, TPH-d and TPH-o were found at the Site above MTCA Method A cleanup Levels. TPH-g and TPH-o were determined to be over MTCA Method A cleanup Levels on the Property boundary between the two Properties. Additional soil borings were obtained by G-Logics in August 2017 in order to bound the MTCA plume.

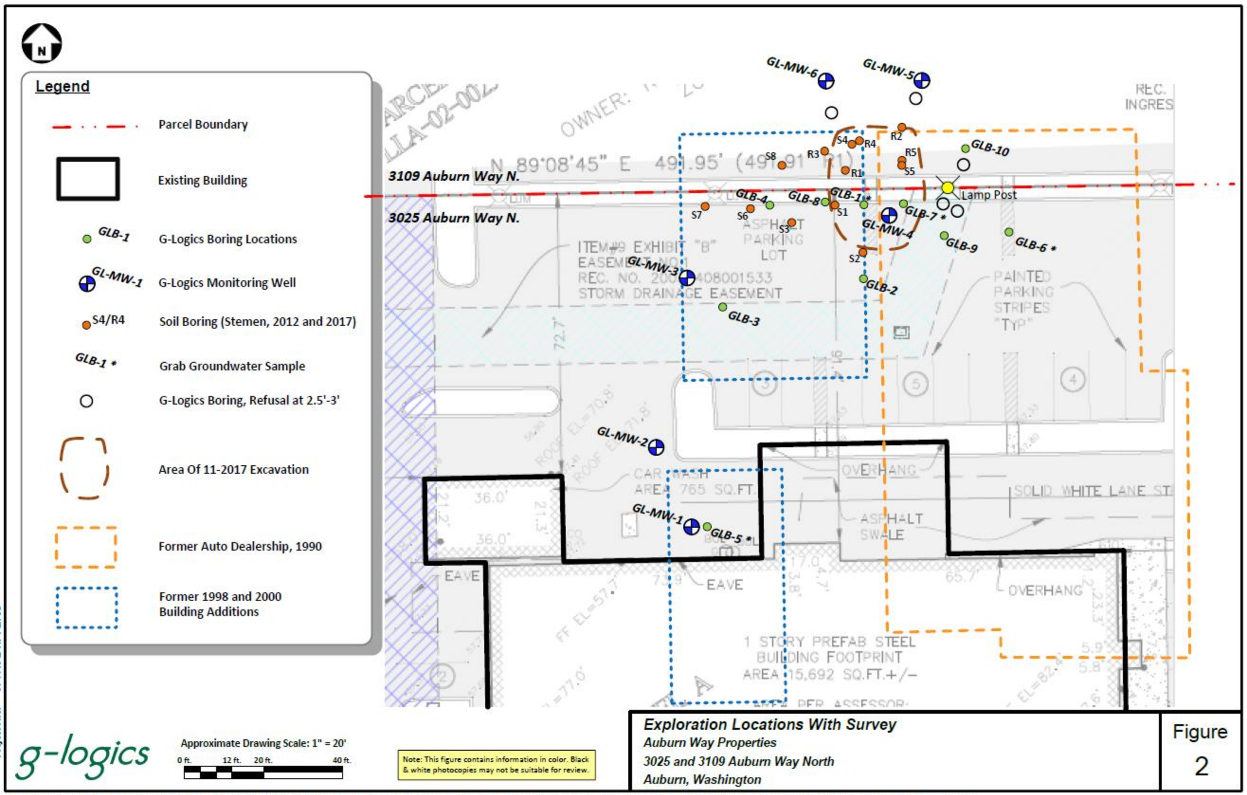
Remedial Efforts: A 550-gallon used oil UST was removed from the Site. A remedial excavation was performed, removing 348 tons of PCS. Twenty-eight soil samples were obtained below MTCA Method A cleanup Levels. Following the excavation, 200 pounds of oxygen-releasing compound was placed into the excavation pit and backfilled. Four quarters of groundwater monitoring were performed in order to determine if the cleanup action met the cleanup objective. Four quarters of groundwater monitoring yielded detected all COCs below MTCA Method A cleanup Levels using silica gel sample cleanup and a literature search for regional background arsenic groundwater concentrations.

Figure 1: Site Vicinity Map



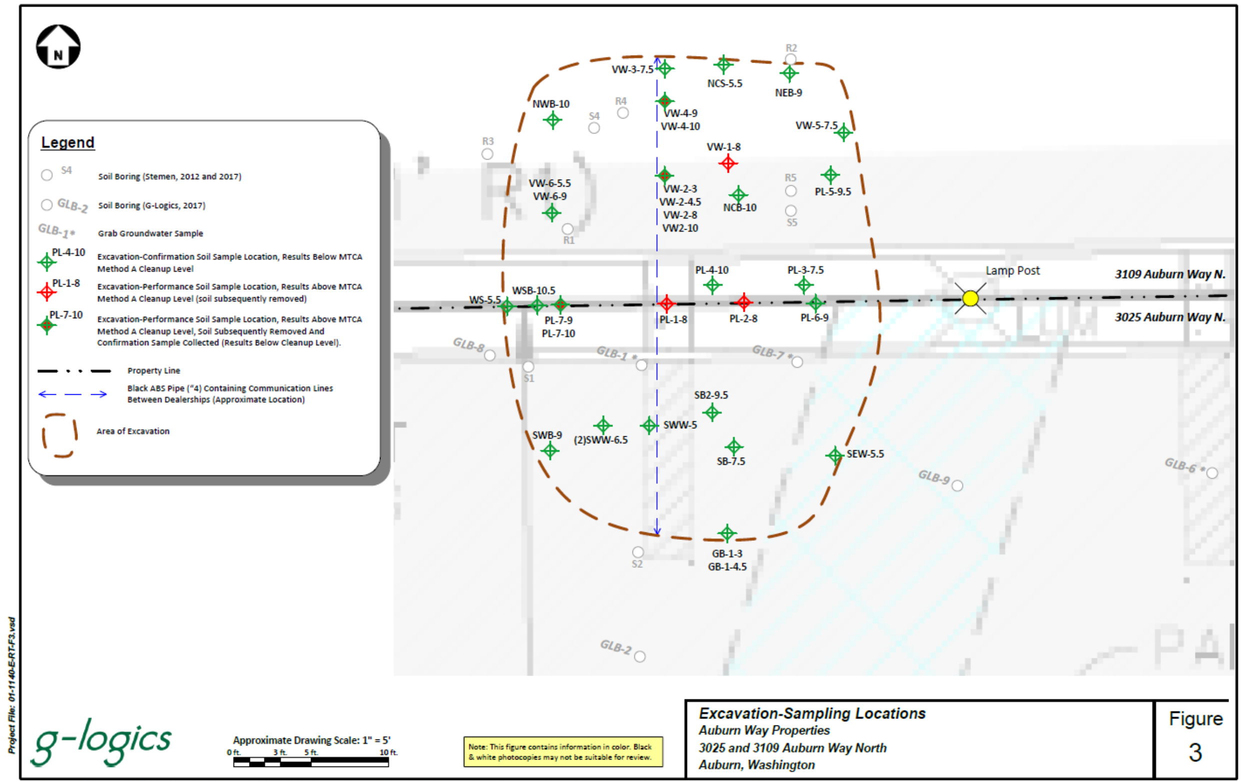
Mapping Reference: King County IMap, Delorme, Google Maps, and G-Logics Site Visit Observations

Figure 2: Exploration Locations with Survey



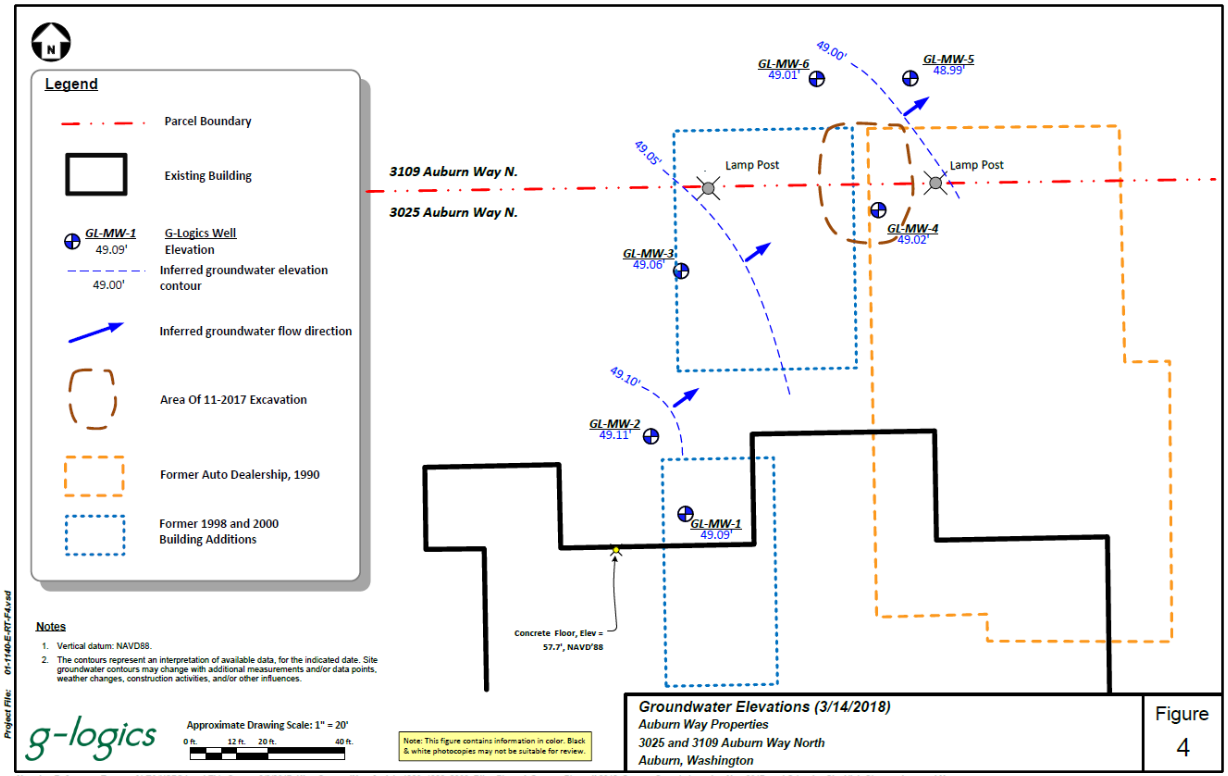
Mapping Reference: ALTA/NSPS Land Title Survey 8/3/2017, King County iMap Aerials 1990, 1998, 2000, Riley Phase I, Stemen Phase II 2012, Stemen Sample Location Map 2017, and G-Logics Site Visit Observations and Measurements

Figure 3: Excavation Boundary and POCs



Mapping Reference: ALTA/NSPS Land Title Survey 8/3/2017, Riley Phase I, Stemen Phase II 2012, Stemen Sample Location Map 2017, and G-Logics Site Visit Observations and Measurements

Figure 4: Groundwater Flow Direction



Notes

1. Vertical datum: NAVD88.
2. The contours represent an interpretation of available data, for the indicated date. Site groundwater contours may change with additional measurements and/or data points, weather changes, construction activities, and/or other influences.

Note: This figure contains information in color. Black & white photocopies may not be suitable for review.

Mapping Reference: Terrane ALTA/NSPS Land Title Survey 8/3/2017, King County iMap Aerials 1990, 1998, 2000, Riley Phase I, Stemen Phase II 2012, Stemen Sample Location Map 2017, and G-Logics Site Visit Observations and Measurements

Figure 5: Groundwater Background Arsenic Concentrations in Washington State

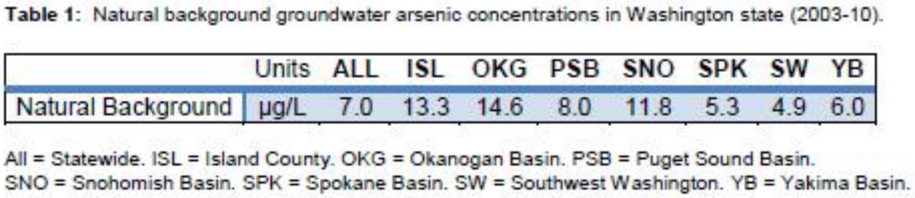
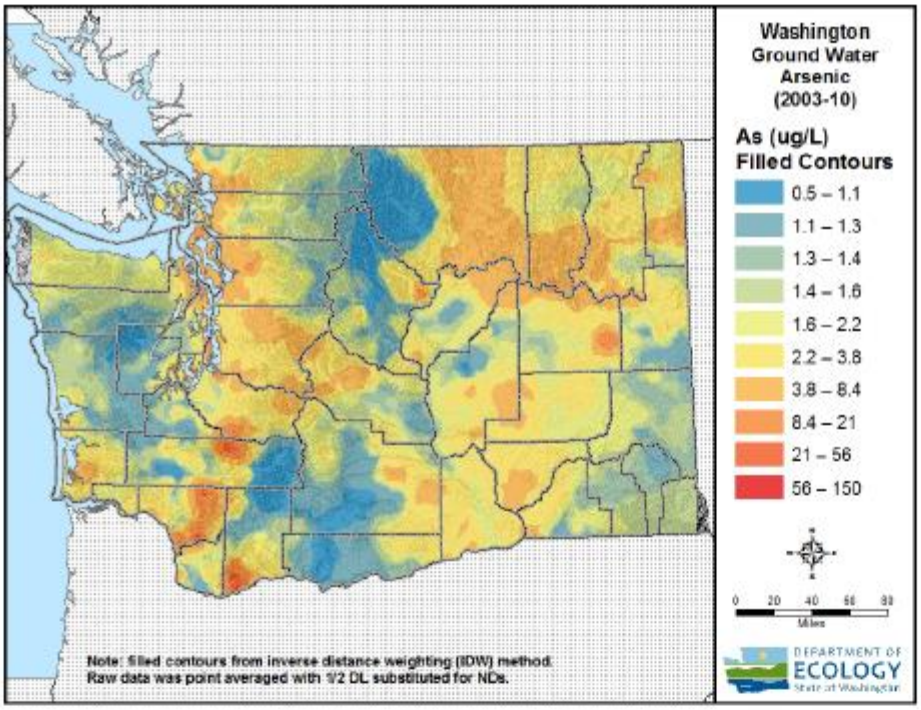


Table 1: Natural background groundwater arsenic concentrations in Washington state (2003-10).

	Units	ALL	ISL	OKG	PSB	SNO	SPK	SW	YB
Natural Background	µg/L	7.0	13.3	14.6	8.0	11.8	5.3	4.9	6.0

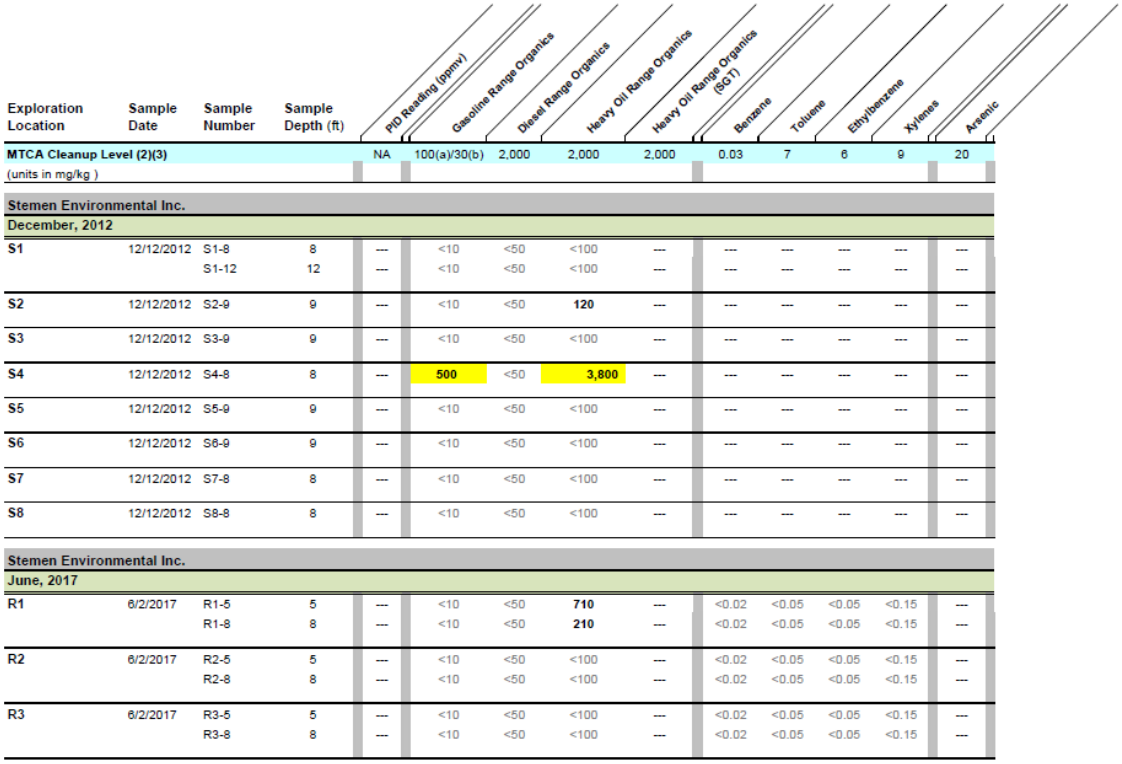
All = Statewide. ISL = Island County. OKG = Okanogan Basin. PSB = Puget Sound Basin.
SNO = Snohomish Basin. SPK = Spokane Basin. SW = Southwest Washington. YB = Yakima Basin.



Note: filled contours from inverse distance weighting (IDW) method.
Raw data was point averaged with 1/2 DL substituted for NDs.

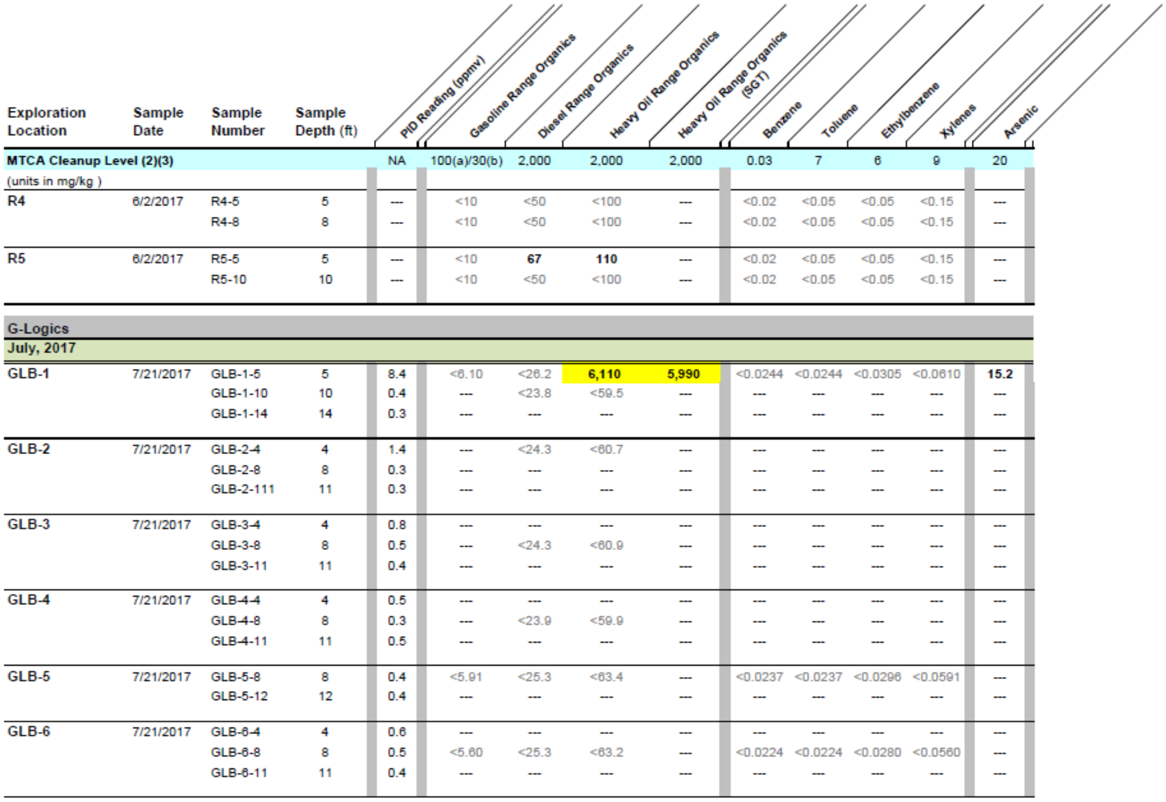
Figure 1: Natural background groundwater arsenic concentrations in Washington state (2000-10).

Table 1: Soil Data Pre-Excavation



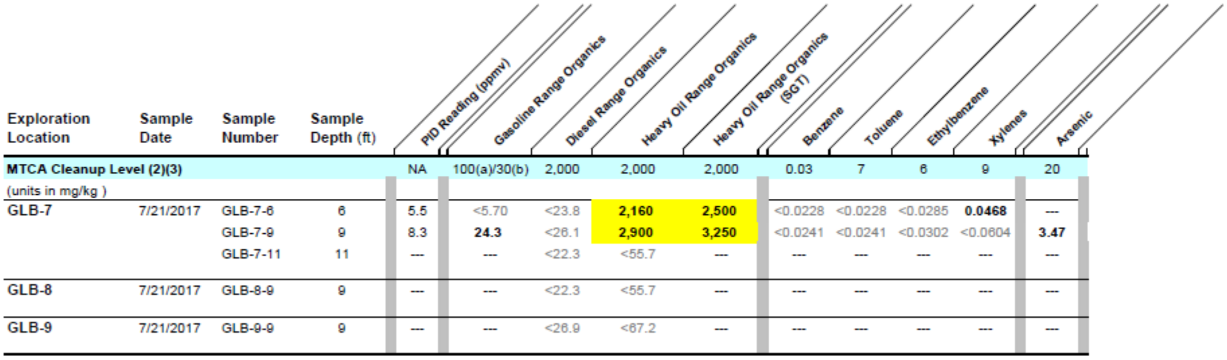
Exploration Location	Sample Date	Sample Number	Sample Depth (ft)	PID Reading (ppmv)	Gasoline Range Organics	Diesel Range Organics	Heavy Oil Range Organics	Heavy Oil Range Organics (SGT)	Benzene	Toluene	Ethylbenzene	Xylenes	Arsenic
MTCA Cleanup Level (2)(3) (units in mg/kg)				NA	100(a)/30(b)	2,000	2,000	2,000	0.03	7	6	9	20
Stemen Environmental Inc.													
December, 2012													
S1	12/12/2012	S1-8	8	---	<10	<50	<100	---	---	---	---	---	---
		S1-12	12	---	<10	<50	<100	---	---	---	---	---	---
S2	12/12/2012	S2-9	9	---	<10	<50	**120**	---	---	---	---	---	---
S3	12/12/2012	S3-9	9	---	<10	<50	<100	---	---	---	---	---	---
S4	12/12/2012	S4-8	8	---	**500**	<50	**3,800**	---	---	---	---	---	---
S5	12/12/2012	S5-9	9	---	<10	<50	<100	---	---	---	---	---	---
S6	12/12/2012	S6-9	9	---	<10	<50	<100	---	---	---	---	---	---
S7	12/12/2012	S7-8	8	---	<10	<50	<100	---	---	---	---	---	---
S8	12/12/2012	S8-8	8	---	<10	<50	<100	---	---	---	---	---	---
Stemen Environmental Inc.													
June, 2017													
R1	6/2/2017	R1-5	5	---	<10	<50	**710**	---	<0.02	<0.05	<0.05	<0.15	---
		R1-8	8	---	<10	<50	**210**	---	<0.02	<0.05	<0.05	<0.15	---
R2	6/2/2017	R2-5	5	---	<10	<50	<100	---	<0.02	<0.05	<0.05	<0.15	---
		R2-8	8	---	<10	<50	<100	---	<0.02	<0.05	<0.05	<0.15	---
R3	6/2/2017	R3-5	5	---	<10	<50	<100	---	<0.02	<0.05	<0.05	<0.15	---
		R3-8	8	---	<10	<50	<100	---	<0.02	<0.05	<0.05	<0.15	---

Table 1: Soil Data Pre-Excavation (continued)



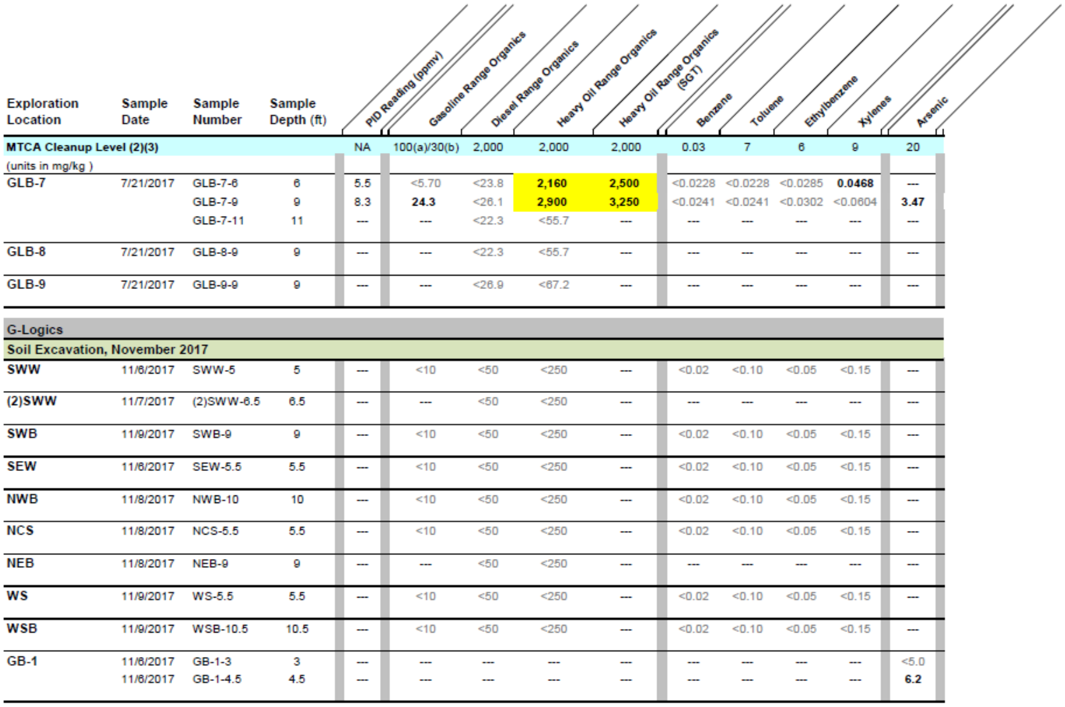
Exploration Location	Sample Date	Sample Number	Sample Depth (ft)	PID Reading (ppmv)	Gasoline Range Organics	Diesel Range Organics	Heavy Oil Range Organics	Heavy Oil Range Organics (SGT)	Benzene	Toluene	Ethylbenzene	Xylenes	Arsenic
MTCA Cleanup Level (2)(3)				NA	100(a)/30(b)	2,000	2,000	2,000	0.03	7	6	9	20
(units in mg/kg)													
R4	6/2/2017	R4-5	5	---	<10	<50	<100	---	<0.02	<0.05	<0.05	<0.15	---
		R4-8	8	---	<10	<50	<100	---	<0.02	<0.05	<0.05	<0.15	---
R5	6/2/2017	R5-5	5	---	<10	**67**	**110**	---	<0.02	<0.05	<0.05	<0.15	---
		R5-10	10	---	<10	<50	<100	---	<0.02	<0.05	<0.05	<0.15	---
G-Logics													
July, 2017													
GLB-1	7/21/2017	GLB-1-5	5	8.4	<6.10	<26.2	**6,110**	**5,990**	<0.0244	<0.0244	<0.0305	<0.0610	**15.2**
		GLB-1-10	10	0.4	---	<23.8	<59.5	---	---	---	---	---	---
		GLB-1-14	14	0.3	---	---	---	---	---	---	---	---	---
GLB-2	7/21/2017	GLB-2-4	4	1.4	---	<24.3	<60.7	---	---	---	---	---	---
		GLB-2-8	8	0.3	---	---	---	---	---	---	---	---	---
		GLB-2-111	11	0.3	---	---	---	---	---	---	---	---	---
GLB-3	7/21/2017	GLB-3-4	4	0.8	---	---	---	---	---	---	---	---	---
		GLB-3-8	8	0.5	---	<24.3	<60.9	---	---	---	---	---	---
		GLB-3-11	11	0.4	---	---	---	---	---	---	---	---	---
GLB-4	7/21/2017	GLB-4-4	4	0.5	---	---	---	---	---	---	---	---	---
		GLB-4-8	8	0.3	---	<23.9	<59.9	---	---	---	---	---	---
		GLB-4-11	11	0.5	---	---	---	---	---	---	---	---	---
GLB-5	7/21/2017	GLB-5-8	8	0.4	<5.91	<25.3	<63.4	---	<0.0237	<0.0237	<0.0296	<0.0591	---
		GLB-5-12	12	0.4	---	---	---	---	---	---	---	---	---
GLB-6	7/21/2017	GLB-6-4	4	0.6	---	---	---	---	---	---	---	---	---
		GLB-6-8	8	0.5	<5.60	<25.3	<63.2	---	<0.0224	<0.0224	<0.0280	<0.0560	---
		GLB-6-11	11	0.4	---	---	---	---	---	---	---	---	---

Table 1: Soil Data Pre-Excavation (continued)



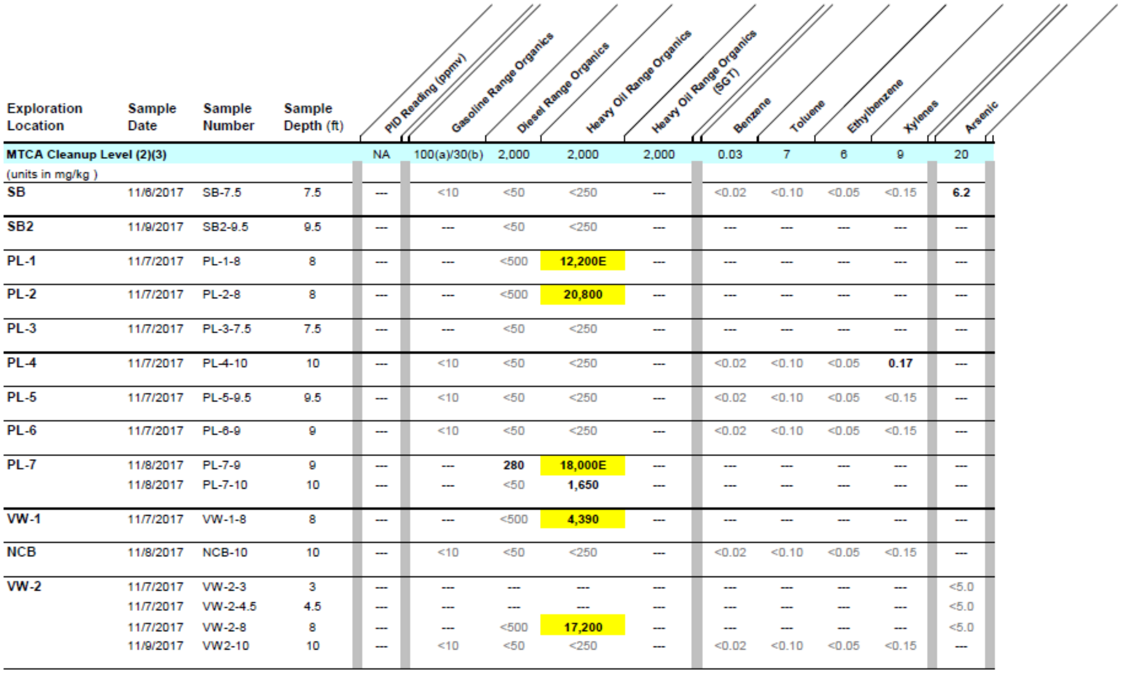
Exploration Location	Sample Date	Sample Number	Sample Depth (ft)	PID Reading (ppmv)	Gasoline Range Organics	Diesel Range Organics	Heavy Oil Range Organics	Heavy Oil Range Organics (SGT)	Benzene	Toluene	Ethylbenzene	Xylenes	Arsenic
MTCA Cleanup Level (2)(3)				NA	100(a)/30(b)	2,000	2,000	2,000	0.03	7	6	9	20
(units in mg/kg)													
GLB-7	7/21/2017	GLB-7-6	6	5.5	<5.70	<23.8	**2,160**	**2,500**	<0.0228	<0.0228	<0.0285	**0.0468**	---
		GLB-7-9	9	8.3	**24.3**	<26.1	**2,900**	**3,250**	<0.0241	<0.0241	<0.0302	<0.0604	**3.47**
		GLB-7-11	11	---	---	<22.3	<55.7	---	---	---	---	---	---
GLB-8	7/21/2017	GLB-8-9	9	---	---	<22.3	<55.7	---	---	---	---	---	---
GLB-9	7/21/2017	GLB-9-9	9	---	---	<26.9	<67.2	---	---	---	---	---	---

Table 2: Soil Data Post-Excavation



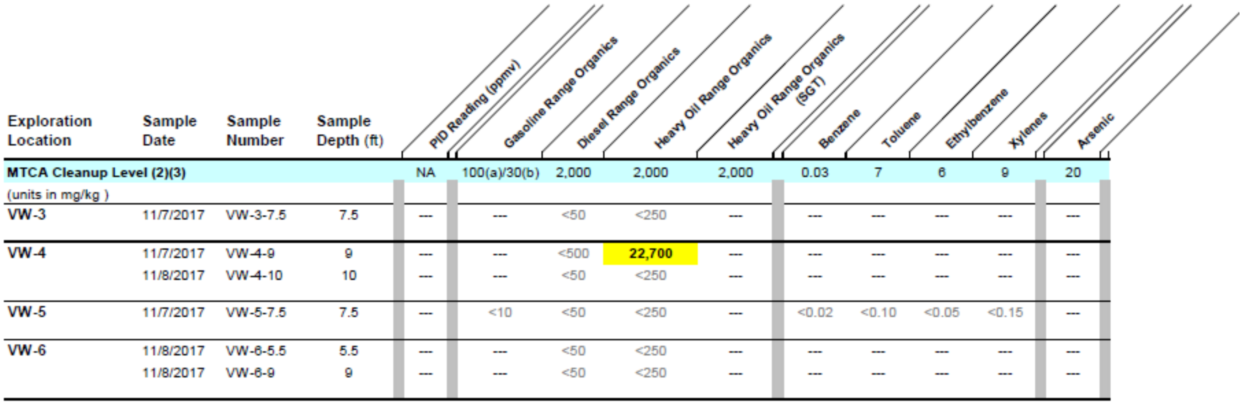
Exploration Location	Sample Date	Sample Number	Sample Depth (ft)	PID Reading (ppmv)	Gasoline Range Organics	Diesel Range Organics	Heavy Oil Range Organics	Heavy Oil Range Organics (SGT)	Benzene	Toluene	Ethylbenzene	Xylenes	Arsenic
MTCA Cleanup Level (2)(3)				NA	100(a)/30(b)	2,000	2,000	2,000	0.03	7	6	9	20
(units in mg/kg)													
GLB-7	7/21/2017	GLB-7-6	6	5.5	<5.70	<23.8	**2,160**	**2,500**	<0.0228	<0.0228	<0.0285	**0.0468**	---
		GLB-7-9	9	8.3	**24.3**	<26.1	**2,900**	**3,250**	<0.0241	<0.0241	<0.0302	<0.0604	**3.47**
		GLB-7-11	11	---	---	<22.3	<55.7	---	---	---	---	---	---
GLB-8	7/21/2017	GLB-8-9	9	---	---	<22.3	<55.7	---	---	---	---	---	---
GLB-9	7/21/2017	GLB-9-9	9	---	---	<26.9	<67.2	---	---	---	---	---	---
G-Logics													
Soil Excavation, November 2017													
SWW	11/6/2017	SWW-5	5	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---
(2)SWW	11/7/2017	(2)SWW-6.5	6.5	---	---	<50	<250	---	---	---	---	---	---
SWB	11/9/2017	SWB-9	9	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---
SEW	11/6/2017	SEW-5.5	5.5	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---
NWB	11/8/2017	NWB-10	10	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---
NCS	11/8/2017	NCS-5.5	5.5	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---
NEB	11/8/2017	NEB-9	9	---	---	<50	<250	---	---	---	---	---	---
WS	11/9/2017	WS-5.5	5.5	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---
WSB	11/9/2017	WSB-10.5	10.5	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---
GB-1	11/6/2017	GB-1-3	3	---	---	---	---	---	---	---	---	---	<5.0
	11/6/2017	GB-1-4.5	4.5	---	---	---	---	---	---	---	---	---	**6.2**

Table 2: Soil Data Post-Excavation (continued)



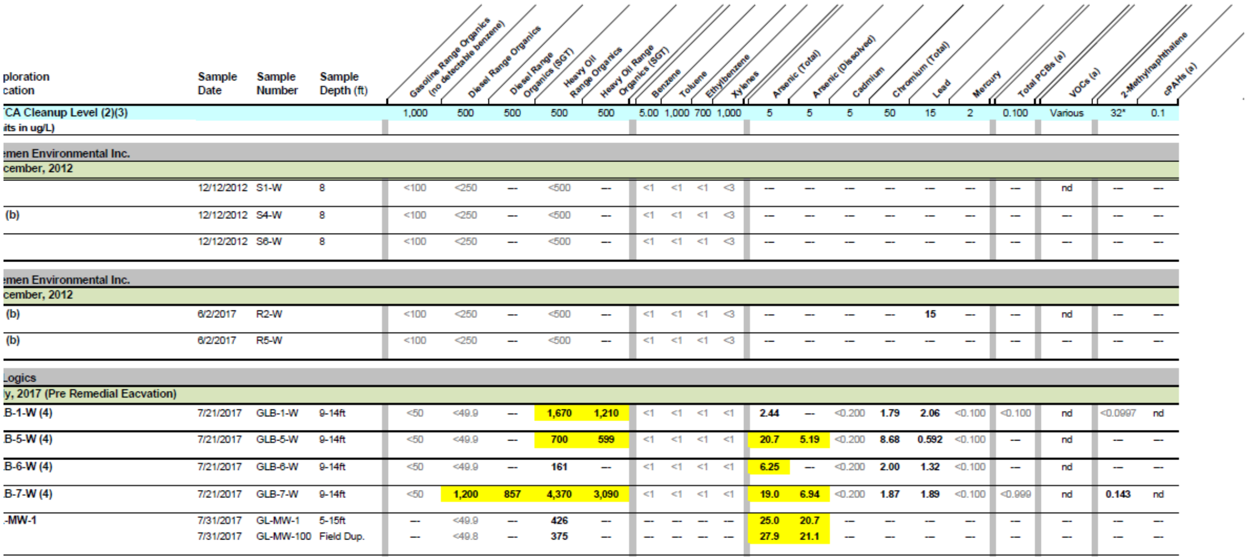
Exploration Location	Sample Date	Sample Number	Sample Depth (ft)	PID Reading (ppmv)	Gasoline Range Organics	Diesel Range Organics	Heavy Oil Range Organics	Heavy Oil Range Organics (SGT)	Benzene	Toluene	Ethylbenzene	Xylenes	Arsenic
MTCA Cleanup Level (2)(3)				NA	100(a)/30(b)	2,000	2,000	2,000	0.03	7	6	9	20
(units in mg/kg)													
SB	11/6/2017	SB-7.5	7.5	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	**6.2**
SB2	11/9/2017	SB2-9.5	9.5	---	---	<50	<250	---	---	---	---	---	---
PL-1	11/7/2017	PL-1-8	8	---	---	<500	**12,200E**	---	---	---	---	---	---
PL-2	11/7/2017	PL-2-8	8	---	---	<500	**20,800**	---	---	---	---	---	---
PL-3	11/7/2017	PL-3-7.5	7.5	---	---	<50	<250	---	---	---	---	---	---
PL-4	11/7/2017	PL-4-10	10	---	<10	<50	<250	---	<0.02	<0.10	<0.05	**0.17**	---
PL-5	11/7/2017	PL-5-9.5	9.5	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---
PL-6	11/7/2017	PL-6-9	9	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---
PL-7	11/8/2017	PL-7-9	9	---	---	**280**	**18,000E**	---	---	---	---	---	---
	11/8/2017	PL-7-10	10	---	---	<50	**1,650**	---	---	---	---	---	---
VW-1	11/7/2017	VW-1-8	8	---	---	<500	**4,390**	---	---	---	---	---	---
NCB	11/8/2017	NCB-10	10	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---
VW-2	11/7/2017	VW-2-3	3	---	---	---	---	---	---	---	---	---	<5.0
	11/7/2017	VW-2-4.5	4.5	---	---	---	---	---	---	---	---	---	<5.0
	11/7/2017	VW-2-8	8	---	---	<500	**17,200**	---	---	---	---	---	<5.0
	11/9/2017	VW2-10	10	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---

Table 2: Soil Data Post-Excavation (continued)



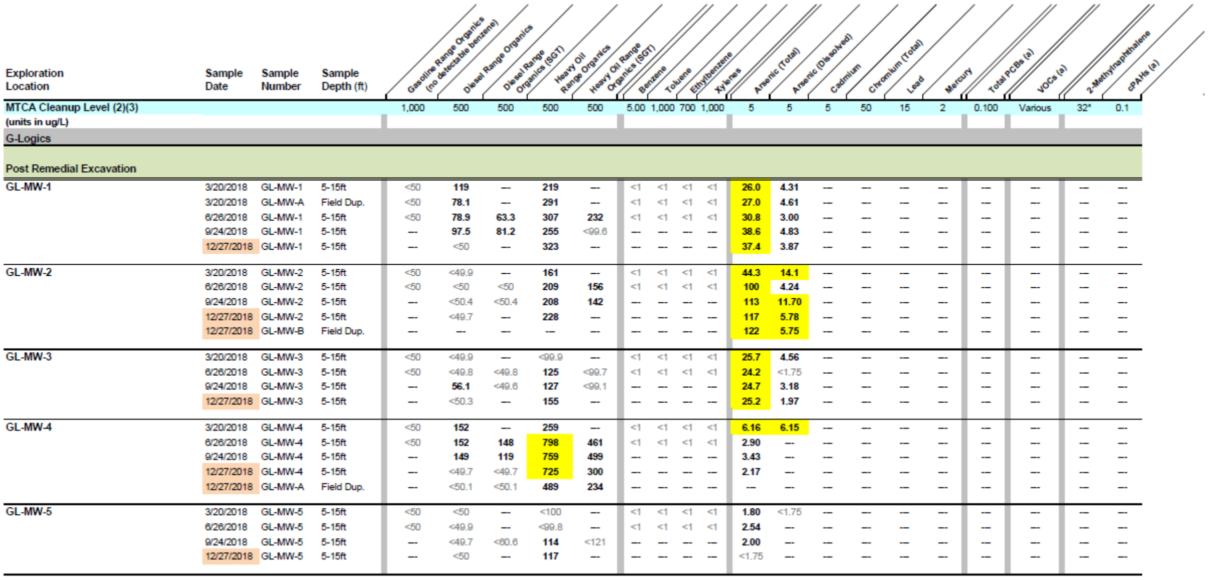
Exploration Location	Sample Date	Sample Number	Sample Depth (ft)	PID Reading (ppmv)	Gasoline Range Organics	Diesel Range Organics	Heavy Oil Range Organics	Heavy Oil Range Organics (SGT)	Benzene	Toluene	Ethylbenzene	Xylenes	Arsenic
MTCA Cleanup Level (2)(3)				NA	100(a)/30(b)	2,000	2,000	2,000	0.03	7	6	9	20
(units in mg/kg)													
VW-3	11/7/2017	VW-3-7.5	7.5	---	---	<50	<250	---	---	---	---	---	---
VW-4	11/7/2017	VW-4-9	9	---	---	<500	**22,700**	---	---	---	---	---	---
	11/8/2017	VW-4-10	10	---	---	<50	<250	---	---	---	---	---	---
VW-5	11/7/2017	VW-5-7.5	7.5	---	<10	<50	<250	---	<0.02	<0.10	<0.05	<0.15	---
VW-6	11/8/2017	VW-6-5.5	5.5	---	---	<50	<250	---	---	---	---	---	---
	11/8/2017	VW-6-9	9	---	---	<50	<250	---	---	---	---	---	---

Table 3: Groundwater Data Pre-Excavation



ploration cation	Sample Date	Sample Number	Sample Depth (ft)	Gasoline Range Organics (no detectable benzene)	Diesel Range Organics	Diesel Range Organics (SGT)	Heavy Oil Range Organics	Heavy Oil Range Organics (SGT)	Benzene	Toluene	Ethylbenzene	Xylenes	Arsenic (Total)	Arsenic (Dissolved)	Cadmium	Chromium (Total)	Lead	Mercury	Total PCBs (a)	VOCs (a)	2-Methylnaphthalene	cPAHs (a)
'CA Cleanup Level (2)(3)				1,000	500	500	500	500	5.00	1,000	700	1,000	5	5	5	50	15	2	0.100	Various	32*	0.1
its in ug/L)																						
:men Environmental Inc.																						
cember, 2012																						
	12/12/2012	S1-W	8	<100	<250	---	<500	---	<1	<1	<1	<3	---	---	---	---	---	---	---	nd	---	---
(b)	12/12/2012	S4-W	8	<100	<250	---	<500	---	<1	<1	<1	<3	---	---	---	---	---	---	---	---	---	---
	12/12/2012	S6-W	8	<100	<250	---	<500	---	<1	<1	<1	<3	---	---	---	---	---	---	---	---	---	---
:men Environmental Inc.																						
cember, 2012																						
(b)	6/2/2017	R2-W		<100	<250	---	<500	---	<1	<1	<1	<3	---	---	---	---	**15**	---	---	nd	---	---
(b)	6/2/2017	R5-W		<100	<250	---	<500	---	<1	<1	<1	<3	---	---	---	---	---	---	---	---	---	---
Logics																						
y, 2017 (Pre Remedial Eacvation)																						
B-1-W (4)	7/21/2017	GLB-1-W	9-14ft	<50	<49.9	---	**1,670**	**1,210**	<1	<1	<1	<1	**2.44**	---	<0.200	**1.79**	**2.06**	<0.100	<0.100	nd	<0.0997	nd
B-5-W (4)	7/21/2017	GLB-5-W	9-14ft	<50	<49.9	---	**700**	**599**	<1	<1	<1	<1	**20.7**	**5.19**	<0.200	**8.68**	**0.592**	<0.100	---	nd	---	---
B-6-W (4)	7/21/2017	GLB-6-W	9-14ft	<50	<49.9	---	**161**	---	<1	<1	<1	<1	**6.25**	---	<0.200	**2.00**	**1.32**	<0.100	---	nd	---	---
B-7-W (4)	7/21/2017	GLB-7-W	9-14ft	<50	**1,200**	**857**	**4,370**	**3,090**	<1	<1	<1	<1	**19.0**	**6.94**	<0.200	**1.87**	**1.89**	<0.100	<0.999	nd	**0.143**	nd
-MW-1	7/31/2017 7/31/2017	GL-MW-1 GL-MW-100	5-15ft Field Dup.	--- ---	<49.9 <49.8	--- ---	**426** **375**	--- ---	--- ---	--- ---	--- ---	--- ---	**25.0** **27.9**	**20.7** **21.1**	--- ---	--- ---	--- ---	--- ---	--- ---	--- ---	--- ---	--- ---

Table 4: Groundwater Data Post-Excavation



Exploration Location	Sample Date	Sample Number	Sample Depth (ft)	Gasoline Range Organics (no detectable benzene)	Diesel Range Organics	Diesel Range Organics (SGT)	Heavy Oil Range Organics	Heavy Oil Range Organics (SGT)	Benzene	Toluene	Ethylbenzene	Xylenes	Arsenic (Total)	Arsenic (Dissolved)	Cadmium	Chromium (Total)	Lead	Mercury	Total PCBs (a)	VOCs (a)	2-Methylnaphthalene	cPAHs (a)
MTCA Cleanup Level (2)(3)				1,000	500	500	500	500	5.00	1,000	700	1,000	5	5	5	50	15	2	0.100	Various	32*	0.1
(units in ug/L)																						
G-Logics																						
Post Remedial Excavation																						
GL-MW-1	3/20/2018	GL-MW-1	5-15ft	<50	**119**	---	**219**	---	<1	<1	<1	<1	**26.0**	**4.31**	---	---	---	---	---	---	---	---
	3/20/2018	GL-MW-A	Field Dup.	<50	**78.1**	---	**291**	---	<1	<1	<1	<1	**27.0**	**4.61**	---	---	---	---	---	---	---	---
	6/26/2018	GL-MW-1	5-15ft	<50	**78.9**	**63.3**	**307**	**232**	<1	<1	<1	<1	**30.8**	**3.00**	---	---	---	---	---	---	---	---
	9/24/2018	GL-MW-1	5-15ft	---	**97.5**	**81.2**	**255**	<99.6	---	---	---	---	**38.6**	**4.83**	---	---	---	---	---	---	---	---
	12/27/2018	GL-MW-1	5-15ft	---	<50	---	**323**	---	---	---	---	---	**37.4**	**3.87**	---	---	---	---	---	---	---	---
GL-MW-2	3/20/2018	GL-MW-2	5-15ft	<50	<49.9	---	**161**	---	<1	<1	<1	<1	**44.3**	**14.1**	---	---	---	---	---	---	---	---
	6/26/2018	GL-MW-2	5-15ft	<50	<50	<50	**209**	**156**	<1	<1	<1	<1	**100**	**4.24**	---	---	---	---	---	---	---	---
	9/24/2018	GL-MW-2	5-15ft	---	<50.4	<50.4	**208**	**142**	---	---	---	---	**113**	**11.70**	---	---	---	---	---	---	---	---
	12/27/2018	GL-MW-2	5-15ft	---	<49.7	---	**228**	---	---	---	---	---	**117**	**5.78**	---	---	---	---	---	---	---	---
	12/27/2018	GL-MW-B	Field Dup.	---	---	---	---	---	---	---	---	---	**122**	**5.75**	---	---	---	---	---	---	---	---
GL-MW-3	3/20/2018	GL-MW-3	5-15ft	<50	<49.9	---	<99.9	---	<1	<1	<1	<1	**25.7**	**4.56**	---	---	---	---	---	---	---	---
	6/26/2018	GL-MW-3	5-15ft	<50	<49.8	<49.8	**125**	<99.7	<1	<1	<1	<1	**24.2**	<1.75	---	---	---	---	---	---	---	---
	9/24/2018	GL-MW-3	5-15ft	---	**56.1**	<49.6	**127**	<99.1	---	---	---	---	**24.7**	**3.18**	---	---	---	---	---	---	---	---
	12/27/2018	GL-MW-3	5-15ft	---	<50.3	---	**155**	---	---	---	---	---	**25.2**	**1.97**	---	---	---	---	---	---	---	---
GL-MW-4	3/20/2018	GL-MW-4	5-15ft	<50	**152**	---	**259**	---	<1	<1	<1	<1	**6.16**	**6.15**	---	---	---	---	---	---	---	---
	6/26/2018	GL-MW-4	5-15ft	<50	**152**	**148**	**798**	**461**	<1	<1	<1	<1	**2.90**	---	---	---	---	---	---	---	---	---
	9/24/2018	GL-MW-4	5-15ft	---	**149**	**119**	**759**	**499**	---	---	---	---	**3.43**	---	---	---	---	---	---	---	---	---
	12/27/2018	GL-MW-4	5-15ft	---	<49.7	<49.7	**725**	**300**	---	---	---	---	**2.17**	---	---	---	---	---	---	---	---	---
	12/27/2018	GL-MW-A	Field Dup.	---	<50.1	<50.1	**489**	**234**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GL-MW-5	3/20/2018	GL-MW-5	5-15ft	<50	<50	---	<100	---	<1	<1	<1	<1	**1.80**	<1.75	---	---	---	---	---	---	---	---
	6/26/2018	GL-MW-5	5-15ft	<50	<49.9	---	<99.8	---	<1	<1	<1	<1	**2.54**	---	---	---	---	---	---	---	---	---
	9/24/2018	GL-MW-5	5-15ft	---	<49.7	<60.6	**114**	<121	---	---	---	---	**2.00**	---	---	---	---	---	---	---	---	---
	12/27/2018	GL-MW-5	5-15ft	---	<50	---	**117**	---	---	---	---	---	<1.75	---	---	---	---	---	---	---	---	---

Table 4: Groundwater Data Post-Excavation (continued)

Exploration Location	Sample Date	Sample Number	Sample Depth (ft)	Gasoline Range Organics (no detectable benzene)	Diesel Range Organics	Diesel Range Organics (SGT)	Heavy Oil Range Organics	Heavy Oil Range Organics (SGT)	Benzene	Toluene	Ethylbenzene	Xylenes	Arsenic (Total)	Arsenic (Dissolved)	Cadmium	Chromium (Total)	Lead	Mercury	Total PCBs (a)	VOCs (a)	2-Methylnaphthalene	cPAHs (a)
MTCA Cleanup Level (2)(3)				1,000	500	500	500	500	5.00	1,000	700	1,000	5	5	5	50	15	2	0.100	Various	32*	0.1
(units in ug/L)																						
GL-MW-6	3/20/2018	GL-MW-6	5-15ft	<50	**69.8**	---	**346**	---	<1	<1	<1	<1	**11.1**	**2.57**	---	---	---	---	---	---	---	---
	6/26/2018	GL-MW-6	5-15ft	<50	**102**	**81.3**	**608**	**438**	<1	<1	<1	<1	**8.96**	<1.75	---	---	---	---	---	---	---	---
	6/26/2018	GL-MW-A	Field Dup.	<50	**58.7**	<49.9	**658**	**441**	<1	<1	<1	<1	**8.82**	---	---	---	---	---	---	---	---	---
	9/24/2018	GL-MW-6	5-15ft	---	**128**	**100**	**510**	**276**	---	---	---	---	**9.41**	**2.85**	---	---	---	---	---	---	---	---
	9/24/2018	GL-MW-A	Field Dup.	---	**154**	**121**	**545**	**380**	---	---	---	---	**9.43**	---	---	---	---	---	---	---	---	---
	12/27/2018	GL-MW-6	5-15ft	---	<50.2	<50.2	**596**	**289**	---	---	---	---	**9.16**	**2.16**	---	---	---	---	---	---	---	---
	12/27/2018	GL-MW-6	Lab Dup.	---	<50.3	---	**499**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes:

(1)	Refer to site diagram(s) for sampling locations. Refer to laboratory reports for analytical methods.
(2)	Available Method A Cleanup Levels or Most Conservative Method B Cleanup Levels, MTCA, revised 2015. Exceeding Cleanup Levels does not necessarily trigger requirements for Cleanup Actions under MTCA. Refer to site diagram(s) for sampling locations.
(3)	Gasoline Analyses by Method NWTPH-Gx, Diesel and Heavy Oil by NWTPH-Dx/Dx Ext., MTCA 5 Metals by 200.8/245.1, VOCs by 8260C, PAH by 8270 (SIM), PCB by 8082.
(4)	Grab Groundwater Sample
(a)	Analytes were not detected. See attached analytical laboratory reports for details.
(b)	No analytical laboratory report included in the Stemen Environmental report to verify analytical data.
*	Method B Cleanup Level.
**	Not researched, no available data.
—	Sample not analyzed.
nd	Not Detected
Dup.	Duplicate Sample for QA/QC.
<50.0	Sample concentration below laboratory reporting limit.
27	Bold number(s) indicates contaminant detected, below cleanup level.
160	Bold number(s) and yellow shading indicates concentration exceeds MTCA Cleanup Level.
SGT	Silica Gel Treatment
12/27/2018	Indicates most recent sampling event.

Important Note: This Table Contains information in color.
Black & white photocopies may not be suitable for review.

Appendix C

b-1.vsdx

Depth in feet	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
				Surface: Asphalt				
0				0-3': FILL (silt, sand, gravel), brown, dry, loose, no odor.	60	FILL		Temporary Boring. Backfilled with Bentonite
			B-1-5'	3-5': SILTY SAND, fine grained, gray, dry, loose, no odor.		SM	0.0	
5				5-13': SANDY SILT interbedded with silty sand lenses, gray, moist to wet at 12', loose, no odor.	70	ML		
			B-1-10'				0.0	
10								
			B-1-13'	13-15': SAND, fine to medium grained, dark brown, wet, loose, no odor.	100	SP	0.0	
			B-1-15'				0.0	
15				EOB at 15'				
20								
25								
30								

Drilling Method: Direct Push	**Date:** 4/24/2022	**Other Information:**
Drilling Company: Holocene	**Weather:** Sunny, mid 60s	Grab groundwater sample (B-1-W) collected from open boring. Stainless steel screen placed from 8-12'.
Boring Diameter: Two inches	**Page** 1 **of** 1	
Logged By: Dan Hatch		

BLUESTONE ENVIRONMENTAL, NW

Boring Log
Auburn VW
3109 Auburn Way North
Auburn, WA

B-1

b-2.vsdx

Depth in feet	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
				Surface-6": Concrete				
0				6"-3': FILL (silt, sand, gravel), brown, dry, loose, no odor.	60	FILL		Temporary Boring. Backfilled with Bentonite
			B-2-5'	3-5': SILTY SAND, fine grained, gray, dry, loose, no odor.		SM	0.0	
5				5-13': SANDY SILT interbedded with silty sand lenses, light gray, moist to wet at 12', loose, no odor.	70	ML		
			B-2-10'				0.0	
10								
			B-2-13'	▽ 13-15': SAND, fine to medium grained, dark brown, wet, loose, no odor.	100		0.0	
			B-2-15'			SP	0.0	
15				EOB at 15'				
20								
25								
30								

Drilling Method: Direct Push

Drilling Company: Holocene

Boring Diameter: Two inches

Logged By: Dan Hatch

Date: 4/24/2022

Weather: Sunny, mid 60s

Page 1 **of** 1

Other Information:

Grab groundwater sample (B-2-W) collected from open boring. Stainless steel screen placed from 8-12'.

BLUESTONE ENVIRONMENTAL, NW

Boring Log
Auburn VW
3109 Auburn Way North
Auburn, WA

B-2

b-3.vsdx

	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
				Surface-6": Concrete				
0				6"-3': FILL (silt, sand, gravel), brown, dry, loose, no odor.	40	FILL		Temporary Boring. Backfilled with Bentonite
			B-3-5'	3-5': SILTY SAND, fine grained, gray, dry, loose, no odor.		SM	0.0	
5				5-12': SANDY SILT interbedded with silty sand lenses, light gray, moist to wet at 12', loose, no odor.	70	ML		
			B-3-10'				0.0	
10			B-3-12'	12-15': SAND, fine to medium grained, dark gray, wet, loose, no odor.	90	SP	0.2	
			B-3-15'				0.0	
15				EOB at 15'				
20								
25								
30								

Depth in feet

Drilling Method: Direct Push	**Date:** 4/24/2022	**Other Information:**
Drilling Company: Holocene	**Weather:** Sunny, mid 60s	
Boring Diameter: Two inches	**Page** 1 **of** 1	
Logged By: Dan Hatch		

BLUESTONE ENVIRONMENTAL, NW

Boring Log
Auburn VW
3109 Auburn Way North
Auburn, WA

B-3

b-4.vsdx

Depth in feet	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
				Surface-6": Concrete				
0				6"-3': FILL (silt, sand, gravel), brown, dry, loose, no odor.	60	FILL		Temporary Boring. Backfilled with Bentonite
			B-4-5'	3-5': SILTY SAND, fine grained, light gray, dry, loose, no odor.		SM	0.0	
5				5-14': SANDY SILT interbedded with silty sand lenses, light gray, moist to wet at 12', loose, no odor.	70	ML		
			B-4-10'				0.0	
10					100		0.0	
			B-4-14'					
			B-4-15'	14-15': SAND, fine to medium grained, dark brown, wet, loose, no odor.		SP	0.3	
15				EOB at 15'				
20								
25								
30								

Drilling Method: Direct Push	**Date:** 4/24/2022	**Other Information:**
Drilling Company: Holocene	**Weather:** Sunny, mid 60s	Grab groundwater sample (B-4-W) collected from open boring. Stainless steel screen placed from 8-12'.
Boring Diameter: Two inches	**Page** 1 **of** 1	
Logged By: Dan Hatch		

BLUESTONE
ENVIRONMENTAL, NW

Boring Log
Auburn VW
3109 Auburn Way North
Auburn, WA

B-4

b-5.vsdx

Depth in feet	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
				Surface-6": Concrete				
0				6"-3': FILL (silt, sand, gravel), brown, dry, loose, no odor.	60	FILL		**Temporary Boring. Backfilled with Bentonite**
			B-5-5'	3-5': SILTY SAND, fine grained, light gray, dry, loose, no odor.		SM	0.0	
5				5-13': SANDY SILT interbedded with silty sand lenses, light gray, moist to wet at 12', loose, no odor.	70	ML		
			B-5-10'				0.0	
10			B-5-12'	▽	100		0.0	
			B-5-15'	14-15': SAND, fine to medium grained, dark gray, wet, loose, no odor.		SP	0.3	
15				EOB at 15'				
20								
25								
30								

Drilling Method: Direct Push	**Date:** 4/24/2022	**Other Information:**
Drilling Company: Holocene	**Weather:** Sunny, mid 60s	Grab groundwater sample (B-5-W) collected from open boring. Stainless steel screen placed from 8-12'.
Boring Diameter: Two inches	**Page** 1 **of** 1	
Logged By: Dan Hatch		

BLUESTONE ENVIRONMENTAL, NW

Boring Log
Auburn VW
3109 Auburn Way North
Auburn, WA

B-5

b-6.vsdx

	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
				Surface-6": Concrete				
0				6"-3': FILL (silt, sand, gravel), brown, dry, loose, no odor.	40	FILL		Temporary Boring. Backfilled with Bentonite
			B-6-5'	3-5': SILTY SAND, fine grained, light gray, dry, loose, no odor.		SM	0.0	
5				5-13': SANDY SILT interbedded with silty sand lenses, light gray, moist to wet at 12', loose, no odor.	80	ML		
			B-6-10'				0.0	
10				▽			0.0	
			B-6-13'	13-15': SAND, fine to medium grained, dark gray, wet, loose, no odor.	90	SP		
			B-6-15'				0.0	
15				EOB at 15'				
20								
25								
30								

Depth in feet

Drilling Method: Direct Push

Drilling Company: Holocene

Boring Diameter: Two inches

Logged By: Dan Hatch

Date: 4/24/2022

Weather: Sunny, mid 60s

Page 1 **of** 1

Other Information:

Grab groundwater sample (B-6-W) collected from open boring. Stainless steel screen placed from 8-12'.

BLUESTONE
ENVIRONMENTAL, NW

Boring Log
Auburn VW
3109 Auburn Way North
Auburn, WA

B-6

b-7.vsdx

	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
				Surface-6": Concrete				
0				6"-3': FILL (silt, sand, gravel), brown, dry, loose, no odor.	50	FILL		**Temporary Boring. Backfilled with Bentonite**
			B-7-3'	3-4': SILTY SAND, fine grained, dark gray, dry, loose, no odor.			0.0	
			B-7-5'	4-7': SILTY SAND, fine grained with wood debris and a gravel layer from 4.5 to 5', dark gray, moist, medium stiff, no odor.	100	SM	0.0	
5								
			B-7-8'	7-8': SILT, with wood debris, dark gray, moist, medium stiff, no odor. EOB at 8'		ML	0.0	
10								
15								
20								
25								
30								

Depth in feet

Drilling Method: Direct Push

Drilling Company: Holocene

Boring Diameter: Two inches

Logged By: Haley Carter

Date: 7/20/2022

Weather: Sunny, mid 70s

Page 1 **of** 1

Other Information:

BLUESTONE ENVIRONMENTAL, NW

Boring Log
Auburn VW
3109 Auburn Way North
Auburn, WA

B-7

b-8.vsdx

	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
				Surface-6": Concrete				
0				6"-3': FILL (silt, sand, gravel), brown, dry, loose, no odor.	50	FILL		Temporary Boring. Backfilled with Bentonite
			B-8-3'	3-4': SILTY SAND, fine grained, dark gray, dry, loose, no odor.			0.1	
			B-8-5'	4-7': SILTY SAND, fine grained and a gravel layer from 4.5 to 5', dark gray, moist, medium stiff, no odor.		SM	0.0	
5					100			
			B-8-8'	7-8': SILT, dark gray, moist, medium stiff, no odor.		ML	0.0	
				EOB at 8'				
10								
15								
20								
25								
30								

Depth in feet

Drilling Method: Direct Push	**Date:** 7/20/2022	**Other Information:**
Drilling Company: Holocene	**Weather:** Sunny, mid 70s	
Boring Diameter: Two inches	**Page** 1 **of** 1	
Logged By: Haley Carter		

BLUESTONE
ENVIRONMENTAL, NW

Boring Log
Auburn VW
3109 Auburn Way North
Auburn, WA

B-8

Depth in feet	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
				Surface-6": Concrete				
0				6"-3': FILL (silt, sand, gravel), brown, dry, loose, no odor.	50	FILL		Temporary Boring. Backfilled with Bentonite
			B-9-3'	3-4': SILTY SAND, fine grained, dark gray, dry, loose, no odor.			0.1	
			B-9-5'	4-7': SILTY SAND, fine grained and a gravel layer from 4 to 4.25', dark gray, moist, medium stiff, no odor.		SM	0.0	
5					100			
			B-9-8'	7-8': SILT, dark gray, moist, medium stiff, no odor.		ML	0.0	
				EOB at 8'				
10								
15								
20								
25								
30								

Drilling Method: Direct Push

Drilling Company: Holocene

Boring Diameter: Two inches

Logged By: Haley Carter

Date: 7/20/2022

Weather: Sunny, mid 70s

Page 1 **of** 1

Other Information:

BLUESTONE
ENVIRONMENTAL, NW

Boring Log
Auburn VW
3109 Auburn Way North
Auburn, WA

B-9

b-10.vsdx

	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
				Surface-6": Concrete				
0				6"-3': FILL (silt, sand, gravel), brown, dry, loose, no odor.	50	FILL		**Temporary Boring. Backfilled with Bentonite**
			B-10-3'	3-4': SILTY SAND, fine grained with plastic debris, dark gray, dry, loose, no odor.			0.0	
			B-10-5'	4-7': SILT with fine grained sand and a gravel layer from 4.5 to 4.75' and an asphalt layer from 5 to 5.2', dark gray, moist, medium stiff, no odor.			4.9	
5			B-10-6'		100	**ML**	0.0	
			B-10-8'	7-8': SILT, dark gray, moist, medium stiff, no odor.			0.0	
				EOB at 8'				
10								
15								
20								
25								
30								

Depth in feet

Drilling Method: Direct Push

Drilling Company: Holocene

Boring Diameter: Two inches

Logged By: Haley Carter

Date: 7/20/2022

Weather: Sunny, mid 70s

Page 1 **of** 1

Other Information:

BLUESTONE ENVIRONMENTAL, NW

Boring Log
Auburn VW
3109 Auburn Way North
Auburn, WA

B-10

b-11.vsdx

	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
				Surface-6": Concrete				
0				6"-3': FILL (silt, sand, gravel), brown, dry, loose, no odor.	40	FILL		Temporary Boring. Backfilled with Bentonite
			B-11-3'	3-4': SILTY SAND, fine grained, dark gray, dry, loose, no odor.		SM	0.0	
			B-11-5'	4-7': SILT with fine grained sand and wood debris, gravel layer from 4 to 4.25', dark gray, moist, medium stiff, no odor.			0.0	
5					100	ML		
			B-11-8'	7-8': SILT, dark gray, moist, medium stiff, no odor.			0.0	
				EOB at 8'				
10								
15								
20								
25								
30								

Depth in feet

Drilling Method: Direct Push
Drilling Company: Holocene
Boring Diameter: Two inches
Logged By: Haley Carter

Date: 7/20/2022
Weather: Sunny, mid 70s
Page 1 **of** 1

Other Information:

BLUESTONE ENVIRONMENTAL, NW

Boring Log
Auburn VW
3109 Auburn Way North
Auburn, WA

B-11

b-12.vsdx

	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
				Surface-6": Concrete				
0				6"-3': FILL (silt, sand, gravel), brown, dry, loose, no odor.	40	FILL		Temporary Boring. Backfilled with Bentonite
			B-12-3'	3-4': SILTY SAND, fine grained, dark gray, dry, loose, no odor.		SM	0.0	
			B-12-5'	4-7': SILT with fine grained sand with wood and asphalt debris, gravel layer from 4 to 4.25', dark gray, dry, medium stiff, no odor.	100	ML	0.0	
5								
			B-12-8'	7-8': SILT, dark gray, moist, medium stiff, no odor.			0.0	
				EOB at 8'				
10								
15								
20								
25								
30								

Depth in feet

Drilling Method: Direct Push	**Date:** 7/20/2022	**Other Information:**
Drilling Company: Holocene	**Weather:** Sunny, mid 70s	
Boring Diameter: Two inches	**Page** 1 **of** 1	
Logged By: Haley Carter		

BLUESTONE ENVIRONMENTAL, NW

Boring Log
Auburn VW
3109 Auburn Way North
Auburn, WA

B-12

b-13.vsdx

	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
				Surface-6": Concrete				
0				6"-3': FILL (silt, sand, gravel), brown, dry, loose, no odor.	50	FILL		Temporary Boring. Backfilled with Bentonite
			B-13-3'	3-4': SILTY SAND, fine grained, dark gray, dry, loose, no odor.		SM	0.0	
			B-13-5'	4-8': SILT with fine grained sand, gravel layer from 4 to 4.5', dark gray, dry, medium stiff, no odor.	100	ML	0.0	
5								
			B-13-8'				0.0	
				EOB at 8'				
10								
15								
20								
25								
30								

Depth in feet

Drilling Method: Direct Push

Drilling Company: Holocene

Boring Diameter: Two inches

Logged By: Haley Carter

Date: 7/20/2022

Weather: Sunny, mid 70s

Page 1 **of** 1

Other Information:

BLUESTONE ENVIRONMENTAL, NW

Boring Log
Auburn VW
3109 Auburn Way North
Auburn, WA

B-13

b-14.vsdx

Depth	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
				Surface-6": Concrete				
0				6"-3': FILL (silt, sand, gravel), brown, dry, loose, no odor.	40	FILL		Temporary Boring. Backfilled with Bentonite
			B-14-3'	3-4': SILTY SAND, fine grained, dark gray, dry, loose, no odor.		SM	0.0	
			B-14-5'	4-7': SILT with fine grained sand and a gravel layer from 4 to 4.5', dark gray, dry, medium stiff, no odor.		ML	0.0	
5					100			
			B-14-8'	7-8': SILT, dark gray, moist, medium stiff, no odor.			0.0	
				EOB at 8'				
10								
15								
20								
25								
30								

Depth in feet

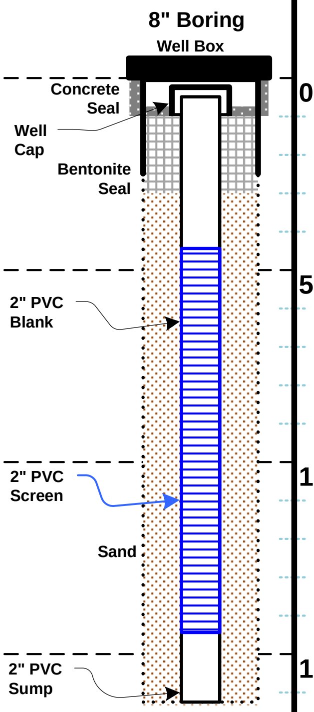
Drilling Method: Direct Push	**Date:** 7/20/2022	**Other Information:**
Drilling Company: Holocene	**Weather:** Sunny, mid 70s	
Boring Diameter: Two inches	**Page** 1 **of** 1	
Logged By: Haley Carter		

BLUESTONE ENVIRONMENTAL, NW

Boring Log
Auburn VW
3109 Auburn Way North
Auburn, WA

B-14

mw-1.vsdx

Depth in feet	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
				Surface: Asphalt				
0				0-3': FILL (silt, sand, gravel), brown, dry, loose, no odor.	50	FILL		
			MW-1-5	3-5': SILTY SAND, fine grained with gravel, gray, moist, medium dense, no odor.		SM	0.0	
5			MW-1-7	5-12': SANDY SILT interbedded with silty sand lenses, gray, moist to wet at 7', medium dense, no odor.	65	ML	0.0	
10			MW-1-12				0.0	
				13-17': SAND, fine to medium grained, dark gray, wet, loose, no odor.	90	SP		
			MW-1-15				0.0	
15				EOB at 17'				
20								
25								
30								

Drilling Method: Direct Push

Drilling Company: Holocene

Boring Diameter: Two inches

Logged By: Dan Hatch

Date: 5/23/2022

Weather: Sunny, mid 60s

Page 1 **of** 1

Other Information:

DOE Well Tag Number: BPK-204

BLUESTONE ENVIRONMENTAL, NW

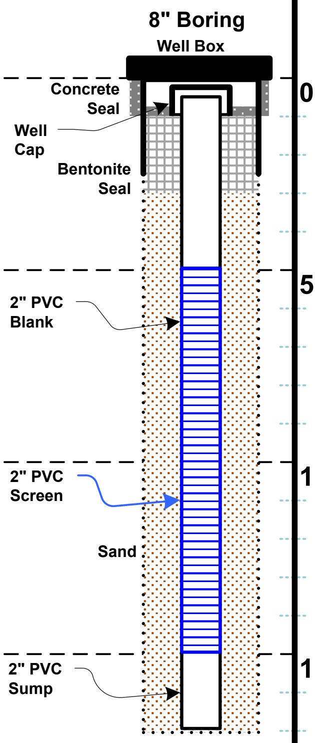
Boring Log
Auburn VW
3109 Auburn Way North
Auburn, WA

MW-1

mw-2.vsdx

Depth in feet	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)
				Surface: Asphalt			
0				0-3': FILL (silt, sand, gravel), brown, dry, loose, no odor.	50	FILL	
			MW-2-5	3-5': SILTY SAND, fine grained with gravel and wood debris at 5', gray, moist, medium dense, no odor.			0.0
5			MW-2-8	5-12.5': SILTY SAND, interbedded with silt lenses, gray, moist to wet at 8', medium dense, no odor.	90	SM	0.0
10			MW-2-12	12.5-14.5': SAND with silt, fine grained, gray, wet, loose, no odor.	100	SM	0.0
15			MW-2-15	14.5-17': SAND, fine to medium grained, dark gray, wet, loose, no odor.	100	SP	0.0
				EOB at 17'			
20							
25							
30							

WELL CONSTRUCTION



Depth in feet

Drilling Method: Direct Push

Drilling Company: Holocene

Boring Diameter: Two inches

Logged By: Dan Hatch

Date: 5/23/2022

Weather: Sunny, mid 60s

Page 1 **of** 1

Other Information:

DOE Well Tag Number: BPK-205

BLUESTONE ENVIRONMENTAL, NW

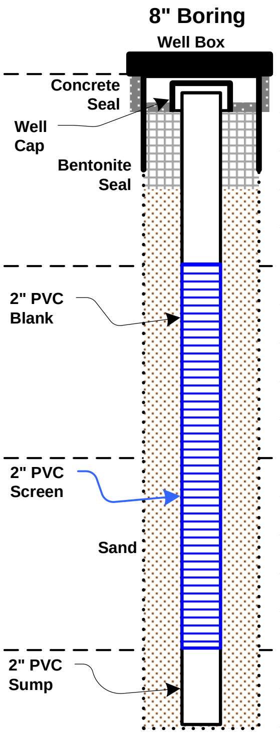
Boring Log
Auburn VW
3109 Auburn Way North
Auburn, WA

MW-2

mw-3.vsdx

Depth in feet	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)
				Surface-6": Cement			
0			MW-3-3	6"-3': FILL (silt, sand, gravel), brown, dry, loose, no odor.	50	FILL	0.0
			MW-3-5	3-5': SILTY SAND, fine grained with gravel, gray, moist, medium dense, no odor.			0.0
5			MW-3-10	5-13.5': SILTY SAND, interbedded with sandy silt lenses, gray, moist to wet at 7', medium dense, no ▽ odor.	75	SM/ ML	0.0
10					100	SM/ ML	
			MW-3-15	13.5-15': SAND, fine to medium grained with trace silt, dark gray, wet, loose, no odor.		SP	0.0
15				15-17': SAND, fine to medium grained, dark gray, wet, loose, no odor.	100		
				EOB at 17'			
20							
25							
30							

WELL CONSTRUCTION



Depth in feet

Drilling Method: Direct Push

Drilling Company: Holocene

Boring Diameter: Two inches

Logged By: Dan Hatch

Date: 5/23/2022

Weather: Sunny, mid 60s

Page 1 **of** 1

Other Information:

DOE Well Tag Number: BPK-206

BLUESTONE ENVIRONMENTAL, NW

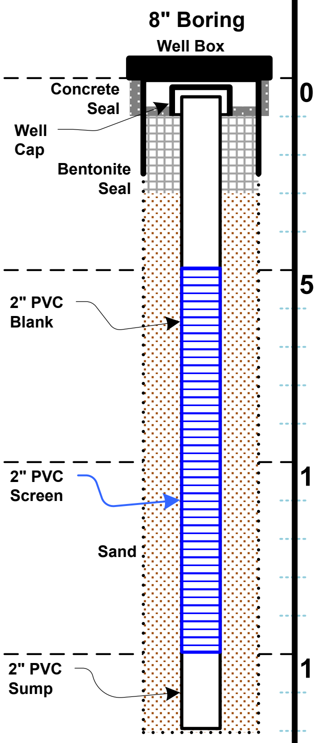
Boring Log
Auburn VW
3109 Auburn Way North
Auburn, WA

MW-3

mw-4.vsdx

Depth in feet	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)
				Surface-6": Cement			
0			MW-4-3	6"-3': FILL (silt, sand, gravel), brown, dry, loose, very slight odor at 3'.	50	FILL	0.6
			MW-4-5	3-5': SILTY SAND, fine grained with gravel, gray, moist, medium dense, no odor.			0.0
5			MW-4-10	5-14.5': SILTY SAND, interbedded with sandy silt lenses, gray, moist to wet at 7', medium dense, no ▽ odor.	100	SM/ ML	0.0
10			MW-4-15		75	SM/ ML	0.0
15				14.5-17': SAND, fine to medium grained, dark gray, wet, loose, no odor.	100	SP	
				EOB at 17'			
20							
25							
30							

WELL CONSTRUCTION



Drilling Method: Direct Push
Drilling Company: Holocene
Boring Diameter: Two inches
Logged By: Dan Hatch

Date: 5/23/2022
Weather: Sunny, mid 60s
Page 1 of 1

Other Information:
DOE Well Tag Number: BPK-207

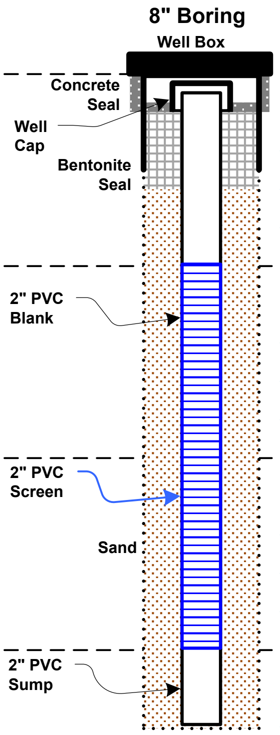
BLUESTONE
ENVIRONMENTAL, NW

Boring Log
Auburn VW
3109 Auburn Way North
Auburn, WA

MW-4

mw-5.vsdx

Depth in feet	BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
				Surface-6": Cement				8" Boring
0			MW-5-3	6"-3': FILL (silt, sand, gravel), brown, dry, loose, very slight odor at 3'.	50	FILL	0.5	
			MW-5-5	3-5': SILTY SAND, fine grained with gravel, gray, moist, medium dense, no odor.			0.0	
5			MW-5-10	5-12.5': SILTY SAND, interbedded with sandy silt lenses, gray, moist to wet at 7', medium dense, no ▽ odor.	100	SM/ ML	0.0	
10			MW-5-15	12.5-17': SAND, fine to coarse grained, dark gray, wet, loose, no odor.	100	SM/ ML SP	0.0	
15					100			
				EOB at 17'				
20								
25								
30								



Depth in feet

Drilling Method: Direct Push

Drilling Company: Holocene

Boring Diameter: Two inches

Logged By: Dan Hatch

Date: 5/23/2022

Weather: Sunny, mid 60s

Page 1 **of** 1

Other Information:

DOE Well Tag Number: BPK-208

BLUESTONE ENVIRONMENTAL, NW

Boring Log
Auburn VW
3109 Auburn Way North
Auburn, WA

MW-4

Appendix D

Appendix D

FIELD EXPLORATION METHODS

Bluestone conducted the sampling in general accordance with Ecology's guidelines and regulations.

Underground Utility Clearance

Before conducting subsurface exploration and excavation remediation, Bluestone contacted the Washington Utilities Locate Center, a service that notifies public utilities of proposed subsurface investigations. Site public utilities were located and marked prior to the start of subsurface work. All below-grade utility locations were identified by marking their inferred location on the ground surface. This information was used to aid in identifying sampling locations.

Quality Assurance Quality Control

Quality Assurance/Quality Control (QA/QC) for the presented scope of work included generally accepted procedures for sample collection, storage, tracking, and documentation. All sampling equipment was washed and water rinse before the collection of the samples. Samples were placed into laboratory supplied containers. All samples were labeled with a project identifier, sample number, date, time, sampler name, and analytical method. Samples were placed and stored inside a cooler/shipping container packed with ice or an ice substitute. Appropriate chain-of-custody documentation was completed. All samples were delivered to an Ecology-certified analytical laboratory under chain-of-custody (COC) within their required holding times after being collected.

Direct Push Soil Sampling

Subsurface soil sampling was accomplished utilizing direct push technology. Soil samples were recovered from each boring using a 60-inch long macro-core sampler. Inside the sampler is a disposable, PVC single-use sample tube. A core catcher was attached to the sampler to keep loose soil from escaping the liner when the sampler was withdrawn from the ground. The liner was removed from the sampler and cut open to allow logging and sampling of the soil core. The core sampler, including the cutting tip and rods, was decontaminated, and a new liner placed in the core sampler between each use.

After the liner was cut, the soil type was evaluated by the Bluestone field representative and recorded into a soil boring log. Soils were observed and categorized for grain-size, color, presence of artifacts, moisture, odor, staining, sheen, and any other indications of contamination. The soil core retained in the sample liner was field-screened by visually inspecting the soil for staining and other evidence of contaminants. Soil samples were collected where indications of contamination were observed or from where contamination would likely be present (i.e. at the groundwater interface). All soil samples were collected in accordance with U.S. Environmental Protection Agency (EPA) Method 5035A.

Collected samples were labeled with a sample number, date, time, and sampler's name and stored in an ice chest containing frozen “blue ice.” Chain-of-custody procedures were followed to document sample handling. Samples were transported to an Ecology approved laboratory within 48 hours.

Upon completion of each soil boring the resulting hole was either backfilled with bentonite (hydrated with a small amount of water) and the ground surface restored to match original or a monitoring well was installed.

Groundwater Monitoring Well Construction

If installed, groundwater monitoring wells were completed in the following manner:

- The well casing materials consisted of 2-inch-diameter, flush-threaded, schedule 40 PVC pipe.
- The screened interval of the well casing was perforated with either 0.010 or 0.020-inch factory-cut slots.
- The filter pack for the well consisted of clean, 10/20 Colorado Silica Sand.
- The annular seal of the well consisted of granulated Wyoming Bentonite.
- All PVC casing materials were cleaned at the factory before installation.
- The bottom of the well casing was sealed with a threaded or slip sediment cup. Blank (non-slotted) riser casing was used to extend the well from the top of the screened interval to ground surface. The length of the screened interval is identified on the boring logs.
- Well construction was accomplished by lowering the casing, into the completed boring, through the inside of the hollow-stem augers. The augers were withdrawn from the boring about three feet at a time, allowing for the resulting annular space around the well screen to be backfilled with sand (poured through the top of the hollow-stem augers). This process was repeated until the filter pack was installed to about two feet above the top of the screened interval. The augers were completely withdrawn from the boring, and the annular space around the blank riser was backfilled with granulated bentonite to the depth shown on the boring logs.
- The well casing was sealed at the ground surface with a watertight expansion cap or PVC slip cap.

- A tamper-resistant steel cover was set over the well, flush to the ground surface. The cover was grouted in place with concrete.
- A reference point was marked on the top of the PVC well casing for consistent groundwater depth measurements.
- The well identification was written on a waterproof tag and placed inside the well box.

Well Development, Surge Block / Over Pumping

Well development efforts were completed on the newly installed groundwater monitoring well after a minimum of 24-hours. This allowed sufficient time for the well materials to cure before development procedures were initiated. The main purpose of developing new monitoring wells is to remove the residual materials remaining in the wells after installation has been completed, and to establish the natural hydraulic flow conditions of the formations which may have been disturbed by well construction. Each new monitoring well was developed by continuous pumping until the pump discharge was free of visible turbidity. The main purpose of developing new monitoring wells is to re-establish the natural hydraulic flow conditions of the formations which may have been disturbed during well construction. Over pumping or removing water from the well at a rapid rate, was the devolvement technique used. Well development continued until the initially turbid water turned nearly clear.

Water Level Measurements in Wells

Water level measurements were referenced to the top of the well casing. The static water level was measured in each monitoring well using a water level indicator or an interface probe. The water level probe was lowered into the well until the instrument detected water. The cable on the indicator is laser-marked in 0.01-foot graduations with labels at 0.1-foot and 1.0-foot intervals.

Temporary Well Sampling, Direct-Push Method

Upon completion of the soil boring, well casing materials consisted of 1-inch PVC pipe with a five-foot section of screen at the bottom, was placed in the open borehole. A 1/4 inch-diameter, disposable, flexible polyethylene tubing was lowered into the well casing for the collection of the groundwater sample. A peristaltic pump was used to purge and sample each well. Purging was performed to remove suspended sediments and to stabilize well-screen materials.

Upon completion of the groundwater sampling, all well material was extracted. The resulting hole was backfilled with bentonite (hydrated with a small amount of water) and the ground surface restored to match original surface. The extracted Strata-probe rod was washed between boring locations and new tubing was used between sampling locations.

Monitoring Well Purging & Sampling

Purging and Sampling was completed in general accordance with Ecology's *Standard Operation Procedure EAP099, Version 1.*0, *Purging and Sampling Monitoring Wells for General Chemistry Parameters*, dated April 2018 and EPA's Region 4 *Groundwater Sampling Operating Procedure*, dated April 26, 2017.

Prior to purging, the caps on the monitoring wells were removed, exposing the wells to the atmosphere, allowing the well to equilibrate for minimum of 5 to 10 minutes before collecting an initial depth to groundwater measurement and beginning purging activities.

The water-level meter or interface probe was slowly lowered into the well to assess the depth to water and/or depth to product. If product was present, the thickness was measure via the interface probe and recorded on the purge log.

Purging Methods

The wells were purged using a low-flow purge method, in which minimal drawdown was achieved by low-flow rates. The tubing was centrally located within the screen interval or approximately in the position correlating to the top one-half to one-third of the water column. Water quality parameters were observed and recorded using a YSI-556 multiparameter instrument. Water quality parameters were measured until they were observed to stabilize, specifically within 5%~ for pH and 10%~ for other parameters, e.g., DO and conductivity, for three consecutive readings, adequately low turbidity was achieved, and the drawdown change in water level was stabilized.

During purging, sheen was assessed at each measurement interval by collecting a small quantity of purge water into a clean container.

Sampling Methods

Groundwater sampled using a peristaltic pump was completed using the following protocol:

- The thickness of the water column within the well was calculated by subtracting the depth to water from the total depth of the well.
- Water samples were obtained from the well casing following EPA low stress and purging procedures.
- The tubing was located within the top one-half to one-third of screen interval or approximately in a position correlating to the top one-half to one-third of the water column if water was found below the top of the well screen.
- The contract laboratory prepared the sample containers to conform to EPA-recommended preservation techniques for the analytes of concern.
- Sample containers were open only as long as necessary to collect the samples.
- Dedicated tubing was used at each sampling location.
- All purge water was collected for proper disposal (determined by analytical results).

Additionally, as a general practice, where applicable, sample containers for the more turbidity-sensitive analyses were filled first. Specifically, poly containers for metals analyses were filled first, followed by glass bottles for SVOCs, and finally40-ml VOAs for VOC analyses were filled last.

Purging and sampling equipment were cleaned/decontaminated between each sampling location/well using laboratory grade detergent in a water solution followed by rinsing in clean water.

Monitoring Well Purging and Sampling, Low Yield Wells Sample Method

For wells that experience significant drawdown and/or run dry even while using low pumping rates, the following protocol was utilized:

- For this sampling event, a peristaltic pump was used to sample all on-site monitoring wells.
- Due to low yield conditions, samples were collected without prior purging.
- Sample containers were open only as long as necessary to collect the samples.
- The contract laboratory prepared the sample containers to conform to EPA-recommended preservation techniques for the analytes of concern.
- Collected samples were labeled with a sample number, date, and time, and stored in an ice chest containing frozen “blue ice”. Chain-of-custody procedures were followed to document sample handling.
- Dedicated tubing was used at each sampling location.
- Before use, the sampling equipment was washed and rinsed.

Appendix E

Well Purge and Development Form
Bluestone Environmental

Client: Auburn VW
Location: **Auburn**
Well Name: MW-1
Date: 5/26/2022

Well depth (ft): 17'
Well diameter (in): 2
Initial Depth to Water: **8.17**
Time of measurement: 9:45
Tubing/Pump Depth
Purging method: **Peristaltic**
Screen Interval (ft)
Water column within Screen Interval:
Volume per foot: 3/4"=.0229 // 1"=0.045 // 2"= 0.174 // 3"=0.384 // 4"=0.661
Water quality meter used: YSI 556 Multimeter with flow cell
Well volume purged:

Time	Purge Rate (ml/min)	Purge Volume (Gallon)	Temperature (C)	Conductivity ms/cm2	Conductivity µS/cm	Dissolved Oxygen %	Dissolved Oxygen mg/L	pH	ORP (mv)	Water Level
11:08			15.42		991	31.60	3.13	8.00	-113.0	
11:12			15.41		988	25.00	2.49	7.66	-107.8	
11:16			15.44		994	25.00	2.49	7.59	-106.4	
11:20			15.37		997	22.20	2.21	7.46	-106.1	

	Color	Odor	Particulate	Sheen	Notes
11:08	Gray	No	Carbon	No	Weather: Sunny
11:12	Gray	No	Carbon	No	Sampled at:10:30
11:16					Sample Bottles: 5
11:20					Very low recharge rate.
0:00					
0:00					
0:00					
0:00					
0:00					
0:00					

Well Purge and Development Form
Bluestone Environmental

Client:	Auburn VW	**Location**	**Auburn**
Well Name:	MW-2	**Date**	5/23/2022

Well depth (ft):	17'		**Initial Depth to Water:**	**7.44**	**Tubing/Pump Depth**	**12'**
Well diameter (in):	2		**Time of measurement:**	8:30	**Purging method**	**Peristaltic**
Screen Interval (ft)	**10**	**Water column within Screen Interval:**	10	**Volume per foot:**	3/4"=.0229 // 1"=0.045 // 2"= 0.174 // 3"=0.384 // 4"=0.661	
Water quality meter used:	YSI 556 Multimeter with flow cell				**Well volume purged:**	

Time	Purge Rate	Purge Volume	Temperature (C)	Conductivity		Dissolved Oxygen		pH	ORP (mv)	Water Level
	(ml/min)	(Gallon)		ms/cm2	µS/cm	%	mg/L			
8:45			14.14		695	289.00	29.34	6.71	-74.0	
8:49			14.10		690	134.80	13.62	6.67	-72.2	
8:53			14.12		691	117.40	12.04	6.64	-70.9	
8:57			14.12		699	103.00	10.52	6.62	-85.5	
9:01			14.12		698	100.00	10.24	6.62	-86.3	

	Color	Odor	Particulate	Sheen	Notes
8:45	Clr	Petroleum	Algae	No	Weather:
8:49	Clr	Petroleum	No	No	Sampled at: 08:00
8:53	Clr	Petroleum	No	No	Sample Bottles: 5
8:57					
9:01					
0:00					
0:00					
0:00					
0:00					
0:00					

Well Purge and Development Form
Bluestone Environmental

Client: Auburn VW
Location Auburn
Well Name: MW-3
Date 5/26/2022

Well depth (ft): 17'
Well diameter (in): 2
Initial Depth to Water: 8.1
Time of measurement: 9:45
Tubing/Pump Depth
Purging method Peristaltic
Screen Interval (ft)
Water column within Screen Interval:
Volume per foot: 3/4"=.0229 // 1"=0.045 // 2"= 0.174 // 3"=0.384 // 4"=0.661
Water quality meter used: YSI 556 Multimeter with flow cell
Well volume purged:

Time	Purge Rate	Purge Volume	Temperature (C)	Conductivity		Dissolved Oxygen		pH	ORP (mv)	Water Level
	(ml/min)	(Gallon)		ms/cm2	µS/cm	%	mg/L			
10:34			16.89		1,138	121.40	11.62	6.82	-96.6	
10:38			16.75		1,188	81.30	7.85	6.81	-98.7	
10:42			16.73		1,220	61.70	5.95	6.83	-90.5	
10:46			16.70		1,237	48.00	4.60	6.86	-91.9	
10:50			16.70		1,254	40.00	3.87	6.85	-95.8	
10:54			16.70		1,259	38.50	3.68	6.84	-96.2	

	Color	Odor	Particulate	Sheen	Notes
10:34	Clear	Petroleum	Orange Algae	No	Weather:
10:38	Clear	Petroleum	No	No	Sampled at: 1:00pm
10:42	Clear	Petroleum	No	No	Sample Bottles: 5
10:46					DUP-1
10:50					
10:54					
0:00					
0:00					
0:00					
0:00					

Well Purge and Development Form
Bluestone Environmental

Client:	Auburn VW	**Location**	**Auburn**
Well Name:	MW-4	**Date**	5/26/2022

Well depth (ft):	17'		**Initial Depth to Water:**	**8.2**	**Tubing/Pump Depth**	
Well diameter (in):	2		**Time of measurement:**	9:45	**Purging method**	**Peristaltic**
Screen Interval (ft)		**Water column within Screen Interval:**		**Volume per foot:**	3/4"=.0229 // 1"=0.045 // 2"= 0.174 // 3"=0.384 // 4"=0.661	
Water quality meter used:	YSI 556 Multimeter with flow cell				**Well volume purged:**	

Time	Purge Rate	Purge Volume	Temperature (C)	Conductivity		Dissolved Oxygen		pH	ORP (mv)	Water Level
	(ml/min)	(Gallon)		ms/cm2	µS/cm	%	mg/L			
9:52			16.77		648	38.20	3.68	6.88	-77.8	
9:56			16.70		645	32.40	3.14	6.77	-69.1	
10:00			16.65		654	31.30	3.04	6.80	-68.6	
10:04			16.65		665	32.10	3.12	6.74	-72.6	

	Color	Odor	Particulate	Sheen	Notes
9:52	Clr	No	No	No	Weather: Sunny
9:56	Clr	No	No	No	Sampled at: 14:00
10:00	Clr	No	No	No	Sample Bottles: 5
10:04	Clr	No	No	No	
0:00					
0:00					
0:00					
0:00					
0:00					
0:00					

Well Purge and Development Form
Bluestone Environmental

Client:	Auburn VW	**Location**	**Auburn**
Well Name:	MW-5	**Date**	5/26/2022

Well depth (ft):	17'		**Initial Depth to Water:**	**8.12**	**Tubing/Pump Depth**	
Well diameter (in):	2		**Time of measurement:**	9:45	**Purging method**	**Peristaltic**
Screen Interval (ft)		**Water column within Screen Interval:**		**Volume per foot:**	3/4"=.0229 // 1"=0.045 // 2"= 0.174 // 3"=0.384 // 4"=0.661	
Water quality meter used:	YSI 556 Multimeter with flow cell				**Well volume purged:**	

Time	Purge Rate	Purge Volume	Temperature (C)	Conductivity		Dissolved Oxygen		pH	ORP (mv)	Water Level
	(ml/min)	(Gallon)		ms/cm2	µS/cm	%	mg/L			
9:26			16.77		1,077	57.60	5.57	7.12	-112.2	
9:30			16.77		963	54.60	5.28	6.75	-116.4	
9:34			16.79		924	52.50	5.08	6.73	-117.1	
9:38			16.80		896	50.10	4.84	6.73	-112.6	

	Color	Odor	Particulate	Sheen	Notes
9:26	Clr	No	No	No	Weather:
9:30	Clr	No	No	No	Sampled at:13:30
9:34	Clr	No	No	No	Sample Bottles:
9:38					
0:00					
0:00					
0:00					
0:00					
0:00					

Well Purge and Development Form
Bluestone Environmental

Client: Auburn VW
Location **Auburn**
Well Name: MW-2
Date 7/26/2022

Well depth (ft):	17'		**Initial Depth to Water:**	**9.85**	**Tubing/Pump Depth**	**12'**
Well diameter (in):	2		**Time of measurement:**	8:00	**Purging method**	**Peristaltic**
Screen Interval (ft)	**10**	**Water column within Screen Interval:**	10	**Volume per foot:**	3/4"=.0229 // 1"=0.045 // 2"= 0.174 // 3"=0.384 // 4"=0.661	
Water quality meter used:	YSI 556 Multimeter with flow cell				**Well volume purged:**	

Time	Purge Rate	Purge Volume	Temperature (C)	Conductivity		Dissolved Oxygen		pH	ORP (mv)	Water Level
	(ml/min)	(Gallon)		ms/cm2	µS/cm	%	mg/L			
8:06			14.40	0.935	745	31.50	3.21	6.73	-124.4	
8:10			13.98	0.928	734	27.40	2.80	6.74	-135.6	
8:14			13.90	0.931	733	25.10	2.56	6.74	-138.6	
8:18			13.87	0.928	731	22.90	2.30	6.74	-136.8	

	Color	Odor	Particulate	Sheen	Notes
8:06	Clr	Petroleum	Algae	No	Weather:
8:10	Clr	Petroleum	No	No	Sampled at: 08:20
8:14	Clr	Petroleum	No	No	Sample Bottles: 5
8:18					
0:00					
0:00					
0:00					
0:00					
0:00					
0:00					

Appendix F

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 05/09/22
Site Name: Auburn VW
Sample Name: B-2-5

Notes for Data Entry | **Set Default Hydrogeology**
Clear All Soil Concentration Data Entry Cells
Restore All Soil Concentration Data cleared previously

REMARK:
Boring B-2-5

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0	0.00%
AL_EC >6-8	0	0.00%
AL_EC >8-10	0	0.00%
AL_EC >10-12	0	0.00%
AL_EC >12-16	0	0.00%
AL_EC >16-21	0	0.00%
AL_EC >21-34	0	0.00%
AR_EC >8-10	0	0.00%
AR_EC >10-12	0	0.00%
AR_EC >12-16	0	0.00%
AR_EC >16-21	0	0.00%
AR_EC >21-34	0	0.00%
Benzene	0	0.00%
Toluene	0	0.00%
Ethylbenzene	0	0.00%
Total Xylenes	0	0.00%
Naphthalene	0	0.00%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0	0.00%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	2.1	19.39%
Benzo(b)fluoranthene	2.3	21.24%
Benzo(k)fluoranthene	0.72	6.65%
Benzo(a)pyrene	2.6	24.01%
Chrysene	2	18.47%
Dibenz(a,h)anthracene	0.17	1.57%
Indeno(1,2,3-cd)pyrene	0.94	8.68%
Sum	10.83	100.00%

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 5/9/2022
Site Name: Auburn VW
Sample Name: B-2-5
Measured Soil TPH Concentration, mg/kg: **10.830**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	3	4.17E-06	1.39E-01	Fail
	Method C	109	9.95E-07	9.97E-03	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	100% NAPL	3.33E-07	3.89E-03	Pass
	Target TPH GW Conc. @ 500 ug/L	100% NAPL	NA	NA	Pass

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**2.60**	**108.90**
Most Stringent Criterion	**Risk of cPAHs mixture= 1E-6**	**Total Risk=1E-5**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	*NO*	7.77E+01	2.99E-05	1.00E+00	*NO*	1.09E+03	9.98E-05	1.00E+00
Total Risk=1E-5	*NO*	2.60E+01	1.00E-05	3.34E-01	YES	1.09E+02	1.00E-05	1.00E-01
Risk of Benzene= 1E-6	NA	NA	NA	NA	NA			
Risk of cPAHs mixture= 1E-6	YES	2.60E+00	1.00E-06	3.34E-02				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**NA**
Protective Ground Water Concentration, ug/L	**NA**
Protective Soil Concentration, mg/kg	**Soil-to-Ground Water is not a critical pathway!**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	1.57E-01	3.53E-07	3.93E-03	100% NAPL
Total Risk = 1E-5	YES	1.57E-01	3.53E-07	3.93E-03	100% NAPL
Total Risk = 1E-6	YES	1.57E-01	3.53E-07	3.93E-03	100% NAPL
Risk of cPAHs mixture= 1E-5	YES	1.57E-01	3.53E-07	3.93E-03	100% NAPL
Benzene MCL = 5 ug/L	NA	NA	NA	NA	NA
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 113000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	1.57E-01	3.53E-07	3.93E-03	**100% NAPL**

Appendix G

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
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www.friedmanandbruya.com

May 4, 2022

Dan Hatch, Project Manager
Bluestone Environmental NW
20204 SE 284th St
Kent, WA 98042

Dear Mr Hatch:

Included are the results from the testing of material submitted on April 25, 2022 from the Auburn VW BE-0107-B, F&BI 204418 project. There are 64 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
BST0504R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on April 25, 2022 by Friedman & Bruya, Inc. from the Bluestone Environmental NW Auburn VW BE-0107-B project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Bluestone Environmental NW
204418 -01	B-1-5
204418 -02	B-1-10
204418 -03	B-1-13
204418 -04	B-1-15
204418 -05	B-1-W
204418 -06	B-2-5
204418 -07	B-2-10
204418 -08	B-2-13
204418 -09	B-2-15
204418 -10	B-2-W
204418 -11	B-3-5
204418 -12	B-3-10
204418 -13	B-3-12
204418 -14	B-3-15
204418 -15	B-4-5
204418 -16	B-4-10
204418 -17	B-4-14
204418 -18	B-4-15
204418 -19	B-4-W
204418 -20	B-5-5
204418 -21	B-5-10
204418 -22	B-5-12
204418 -23	B-5-15
204418 -24	B-5-W
204418 -25	B-6-5
204418 -26	B-6-10
204418 -27	B-6-13
204418 -28	B-6-15
204418 -29	B-6-W

The 8260D calibration standard failed the acceptance criteria for several analytes. The data were flagged accordingly.

The 8260D matrix spike and matrix spike duplicate failed the relative percent difference for dichlorofluoromethane. The analyte was not detected therefore the data were acceptable.

All other quality control requirements were acceptable.

Date of Report: 05/04/22
Date Received: 04/25/22
Project: Auburn VW BE-0107-B, F&BI 204418
Date Extracted: 04/29/22
Date Analyzed: 04/29/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
B-1-10 204418-02	<5	82
B-1-13 204418-03	<5	87
B-2-5 204418-06	<5	80
B-3-5 204418-11	<5	68
B-3-12 204418-13	<5	82
B-4-10 204418-16	<5	79
B-4-14 204418-17	<5	81
B-6-13 204418-27	<5	81
Method Blank 02-894 MB	<5	83

Date of Report: 05/04/22
Date Received: 04/25/22
Project: Auburn VW BE-0107-B, F&BI 204418
Date Extracted: 04/28/22
Date Analyzed: 04/29/22

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
B-1-W 204418-05	<100	83
B-2-W 204418-10	<100	78
B-4-W 204418-19	<100	88
B-5-W 204418-24	<100	86
B-6-W 204418-29	<100	82
Method Blank 02-0893 MB	<100	81

Date of Report: 05/04/22
Date Received: 04/25/22
Project: Auburn VW BE-0107-B, F&BI 204418
Date Extracted: 04/26/22
Date Analyzed: 04/26/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 56-165)
B-1-10 204418-02	<50	<250	99
B-1-13 204418-03	<50	<250	99
B-2-5 204418-06	<50	<250	93
B-2-13 204418-08	<50	<250	100
B-3-5 204418-11	<50	<250	96
B-3-12 204418-13	<50	<250	98
B-4-10 204418-16	<50	<250	102
B-4-14 204418-17	<50	<250	96
B-5-10 204418-21	<50	<250	104
B-5-15 204418-23	<50	<250	102
B-6-10 204418-26	<50	<250	99

Date of Report: 05/04/22
Date Received: 04/25/22
Project: Auburn VW BE-0107-B, F&BI 204418
Date Extracted: 04/26/22
Date Analyzed: 04/26/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 56-165)
B-6-13 204418-27	<50	<250	95
Method Blank 02-1033 MB	<50	<250	102

Date of Report: 05/04/22
Date Received: 04/25/22
Project: Auburn VW BE-0107-B, F&BI 204418
Date Extracted: 04/27/22
Date Analyzed: 04/27/22

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID	Diesel Range	Motor Oil Range	Surrogate (% Recovery)
Laboratory ID	(C_{10}-C_{25})	(C_{25}-C_{36})	(Limit 41-152)
B-1-W 204418-05 1/0.8	88 x	<200	81
B-2-W 204418-10 1/0.8	180 x	<200	105
B-4-W 204418-19	2,500 x	370 x	112
B-5-W 204418-24	240 x	<250	100
B-6-W 204418-29	110 x	<250	103
Method Blank 02-1024 MB2	<50	<250	136

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-1-13	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/26/22	Lab ID:	204418-03
Date Analyzed:	04/26/22	Data File:	204418-03.053
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.14
Cadmium	<1
Chromium	11.8
Lead	2.89
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-2-5	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/26/22	Lab ID:	204418-06
Date Analyzed:	04/26/22	Data File:	204418-06.054
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.22
Cadmium	<1
Chromium	10.8
Lead	4.73
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-4-14	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/26/22	Lab ID:	204418-17
Date Analyzed:	04/26/22	Data File:	204418-17.055
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.15
Cadmium	<1
Chromium	9.17
Lead	1.82
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-5-15	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/26/22	Lab ID:	204418-23
Date Analyzed:	04/26/22	Data File:	204418-23.056
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.27
Cadmium	<1
Chromium	8.95
Lead	1.27
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-6-13	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/26/22	Lab ID:	204418-27
Date Analyzed:	04/26/22	Data File:	204418-27.057
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.27
Cadmium	<1
Chromium	9.23
Lead	1.99
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	NA	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/26/22	Lab ID:	I2-309 mb2
Date Analyzed:	04/26/22	Data File:	I2-309 mb2.048
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-1-W	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/28/22	Lab ID:	204418-05
Date Analyzed:	04/28/22	Data File:	204418-05.079
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	70.2
Cadmium	<1
Chromium	5.64
Lead	1.37
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-2-W	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/28/22	Lab ID:	204418-10
Date Analyzed:	04/28/22	Data File:	204418-10.080
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	13.9
Cadmium	<1
Chromium	7.57
Lead	1.82
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-4-W	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/28/22	Lab ID:	204418-19
Date Analyzed:	04/28/22	Data File:	204418-19.081
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	104
Cadmium	<1
Lead	9.27
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-4-W	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/28/22	Lab ID:	204418-19 x10
Date Analyzed:	04/28/22	Data File:	204418-19 x10.093
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Chromium	77.7

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-5-W	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/28/22	Lab ID:	204418-24
Date Analyzed:	04/28/22	Data File:	204418-24.085
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	18.1
Cadmium	<1
Lead	3.27
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-5-W	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/28/22	Lab ID:	204418-24 x10
Date Analyzed:	04/28/22	Data File:	204418-24 x10.094
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Chromium	22.9

Analysis For Total Metals By EPA Method 6020B

Client ID:	B-6-W	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/28/22	Lab ID:	204418-29
Date Analyzed:	04/28/22	Data File:	204418-29.086
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	29.2
Cadmium	<1
Chromium	7.02
Lead	1.27
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	NA	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/28/22	Lab ID:	I2-321 mb
Date Analyzed:	04/28/22	Data File:	I2-321 mb.072
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	B-1-10	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/27/22	Lab ID:	204418-02
Date Analyzed:	04/27/22	Data File:	042706.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	90	109
Toluene-d8	97	89	112
4-Bromofluorobenzene	98	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	0.073	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	B-1-13	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/27/22	Lab ID:	204418-03
Date Analyzed:	04/27/22	Data File:	042710.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	90	109
Toluene-d8	96	89	112
4-Bromofluorobenzene	97	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	B-2-5	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/27/22	Lab ID:	204418-06
Date Analyzed:	04/27/22	Data File:	042711.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	90	109
Toluene-d8	98	89	112
4-Bromofluorobenzene	102	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	B-2-13	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/27/22	Lab ID:	204418-08
Date Analyzed:	04/27/22	Data File:	042712.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	90	109
Toluene-d8	100	89	112
4-Bromofluorobenzene	100	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	B-3-5	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/27/22	Lab ID:	204418-11
Date Analyzed:	04/27/22	Data File:	042713.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	90	109
Toluene-d8	99	89	112
4-Bromofluorobenzene	100	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	B-3-12	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/27/22	Lab ID:	204418-13
Date Analyzed:	04/27/22	Data File:	042714.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	90	109
Toluene-d8	96	89	112
4-Bromofluorobenzene	96	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B-4-10
Date Received: 04/25/22
Date Extracted: 04/27/22
Date Analyzed: 04/27/22
Matrix: Soil
Units: mg/kg (ppm) Dry Weight

Client: Bluestone Environmental NW
Project: BE-0107-B, F&BI 204418
Lab ID: 204418-16
Data File: 042715.D
Instrument: GCMS4
Operator: RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	90	109
Toluene-d8	99	89	112
4-Bromofluorobenzene	104	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	B-4-14	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/27/22	Lab ID:	204418-17
Date Analyzed:	04/27/22	Data File:	042716.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	90	109
Toluene-d8	100	89	112
4-Bromofluorobenzene	100	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	B-5-10	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/27/22	Lab ID:	204418-21
Date Analyzed:	04/27/22	Data File:	042717.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	90	109
Toluene-d8	98	89	112
4-Bromofluorobenzene	98	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	B-5-15	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/27/22	Lab ID:	204418-23
Date Analyzed:	04/27/22	Data File:	042718.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	90	109
Toluene-d8	98	89	112
4-Bromofluorobenzene	99	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	B-6-10	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/27/22	Lab ID:	204418-26
Date Analyzed:	04/27/22	Data File:	042719.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	90	109
Toluene-d8	99	89	112
4-Bromofluorobenzene	100	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	B-6-13	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/27/22	Lab ID:	204418-27
Date Analyzed:	04/27/22	Data File:	042720.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	90	109
Toluene-d8	100	89	112
4-Bromofluorobenzene	99	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	Not Applicable	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/27/22	Lab ID:	02-991 mb
Date Analyzed:	04/27/22	Data File:	042705.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	90	109
Toluene-d8	98	89	112
4-Bromofluorobenzene	97	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B-1-W	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/29/22	Lab ID:	204418-05
Date Analyzed:	04/29/22	Data File:	042936.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	85	117
Toluene-d8	99	88	112
4-Bromofluorobenzene	93	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10 ca	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5 ca	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B-2-W	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/29/22	Lab ID:	204418-10
Date Analyzed:	04/29/22	Data File:	042937.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	85	117
Toluene-d8	103	88	112
4-Bromofluorobenzene	98	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10 ca	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5 ca	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B-4-W	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/29/22	Lab ID:	204418-19
Date Analyzed:	05/02/22	Data File:	050228.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	85	117
Toluene-d8	103	88	112
4-Bromofluorobenzene	97	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10 ca	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B-5-W	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/29/22	Lab ID:	204418-24
Date Analyzed:	04/29/22	Data File:	042938.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	85	117
Toluene-d8	99	88	112
4-Bromofluorobenzene	98	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10 ca	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5 ca	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B-6-W	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/29/22	Lab ID:	204418-29
Date Analyzed:	04/29/22	Data File:	042942.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	85	117
Toluene-d8	100	88	112
4-Bromofluorobenzene	94	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10 ca	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5 ca	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	Not Applicable	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/29/22	Lab ID:	02-1000 MB
Date Analyzed:	04/29/22	Data File:	042907.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	85	117
Toluene-d8	105	88	112
4-Bromofluorobenzene	94	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10 ca	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5 ca	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-1-13	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/26/22	Lab ID:	204418-03 1/5
Date Analyzed:	04/27/22	Data File:	042721.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	56	24	111
Phenol-d6	72	37	116
Nitrobenzene-d5	62	38	117
2-Fluorobiphenyl	76	45	117
2,4,6-Tribromophenol	84	11	158
Terphenyl-d14	105	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-2-5	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/26/22	Lab ID:	204418-06 1/25
Date Analyzed:	04/27/22	Data File:	042711.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	67 d	39	103
Phenol-d6	80 d	48	109
Nitrobenzene-d5	73 d	23	138
2-Fluorobiphenyl	82 d	50	150
2,4,6-Tribromophenol	79 d	40	127
Terphenyl-d14	96 d	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.074
2-Methylnaphthalene	0.17
1-Methylnaphthalene	0.17
Acenaphthylene	0.093
Acenaphthene	0.18
Fluorene	0.85
Phenanthrene	6.9
Anthracene	1.2
Fluoranthene	5.3
Pyrene	5.8
Benz(a)anthracene	2.1
Chrysene	2.0
Benzo(a)pyrene	2.6
Benzo(b)fluoranthene	2.3
Benzo(k)fluoranthene	0.72
Indeno(1,2,3-cd)pyrene	0.94
Dibenz(a,h)anthracene	0.17
Benzo(g,h,i)perylene	0.81

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-4-14	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/26/22	Lab ID:	204418-17 1/5
Date Analyzed:	04/27/22	Data File:	042722.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	58	24	111
Phenol-d6	72	37	116
Nitrobenzene-d5	67	38	117
2-Fluorobiphenyl	75	45	117
2,4,6-Tribromophenol	87	11	158
Terphenyl-d14	98	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-5-10	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/26/22	Lab ID:	204418-21 1/5
Date Analyzed:	04/27/22	Data File:	042723.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	67	24	111
Phenol-d6	79	37	116
Nitrobenzene-d5	76	38	117
2-Fluorobiphenyl	87	45	117
2,4,6-Tribromophenol	83	11	158
Terphenyl-d14	103	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-6-13	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/26/22	Lab ID:	204418-27 1/5
Date Analyzed:	04/27/22	Data File:	042724.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	75	24	111
Phenol-d6	88	37	116
Nitrobenzene-d5	83	38	117
2-Fluorobiphenyl	91	45	117
2,4,6-Tribromophenol	87	11	158
Terphenyl-d14	113	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	Not Applicable	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/26/22	Lab ID:	02-1026 mb2 1/5
Date Analyzed:	04/27/22	Data File:	042720.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	80	24	111
Phenol-d6	95	37	116
Nitrobenzene-d5	92	38	117
2-Fluorobiphenyl	97	45	117
2,4,6-Tribromophenol	104	11	158
Terphenyl-d14	118	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-1-W	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/26/22	Lab ID:	204418-05 1/2
Date Analyzed:	04/27/22	Data File:	042715.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	53	10	60
Phenol-d6	43	10	49
Nitrobenzene-d5	82	15	144
2-Fluorobiphenyl	75	25	128
2,4,6-Tribromophenol	83	10	142
Terphenyl-d14	94	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.4
2-Methylnaphthalene	<0.4
1-Methylnaphthalene	<0.4
Acenaphthylene	<0.04
Acenaphthene	<0.04
Fluorene	<0.04
Phenanthrene	<0.04
Anthracene	<0.04
Fluoranthene	<0.04
Pyrene	<0.04
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04
Benzo(g,h,i)perylene	<0.08

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-2-W	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/26/22	Lab ID:	204418-10 1/2
Date Analyzed:	04/27/22	Data File:	042716.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	37	10	60
Phenol-d6	37	10	49
Nitrobenzene-d5	71	15	144
2-Fluorobiphenyl	69	25	128
2,4,6-Tribromophenol	63	10	142
Terphenyl-d14	87	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.4
2-Methylnaphthalene	<0.4
1-Methylnaphthalene	<0.4
Acenaphthylene	<0.04
Acenaphthene	<0.04
Fluorene	<0.04
Phenanthrene	<0.04
Anthracene	<0.04
Fluoranthene	<0.04
Pyrene	<0.04
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04
Benzo(g,h,i)perylene	<0.08

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-4-W	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/26/22	Lab ID:	204418-19 1/2
Date Analyzed:	04/27/22	Data File:	042717.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	52	10	60
Phenol-d6	45	10	49
Nitrobenzene-d5	80	15	144
2-Fluorobiphenyl	77	25	128
2,4,6-Tribromophenol	97	10	142
Terphenyl-d14	99	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.4
2-Methylnaphthalene	<0.4
1-Methylnaphthalene	<0.4
Acenaphthylene	<0.04
Acenaphthene	<0.04
Fluorene	<0.04
Phenanthrene	0.092
Anthracene	<0.04
Fluoranthene	<0.04
Pyrene	<0.04
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04
Benzo(g,h,i)perylene	<0.08

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-5-W	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/26/22	Lab ID:	204418-24 1/2
Date Analyzed:	04/27/22	Data File:	042718.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	49	10	60
Phenol-d6	46	10	49
Nitrobenzene-d5	91	15	144
2-Fluorobiphenyl	87	25	128
2,4,6-Tribromophenol	88	10	142
Terphenyl-d14	106	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.4
2-Methylnaphthalene	<0.4
1-Methylnaphthalene	<0.4
Acenaphthylene	<0.04
Acenaphthene	<0.04
Fluorene	<0.04
Phenanthrene	<0.04
Anthracene	<0.04
Fluoranthene	<0.04
Pyrene	<0.04
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04
Benzo(g,h,i)perylene	<0.08

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-6-W	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/26/22	Lab ID:	204418-29 1/2
Date Analyzed:	04/27/22	Data File:	042719.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	48	10	60
Phenol-d6	46	10	49
Nitrobenzene-d5	84	15	144
2-Fluorobiphenyl	78	25	128
2,4,6-Tribromophenol	84	10	142
Terphenyl-d14	104	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.4
2-Methylnaphthalene	<0.4
1-Methylnaphthalene	<0.4
Acenaphthylene	<0.04
Acenaphthene	<0.04
Fluorene	<0.04
Phenanthrene	<0.04
Anthracene	<0.04
Fluoranthene	<0.04
Pyrene	<0.04
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04
Benzo(g,h,i)perylene	<0.08

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	Not Applicable	Project:	BE-0107-B, F&BI 204418
Date Extracted:	04/26/22	Lab ID:	02-1032 mb2
Date Analyzed:	04/26/22	Data File:	042617.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	27	11	65
Phenol-d6	18	11	65
Nitrobenzene-d5	97	50	150
2-Fluorobiphenyl	95	44	108
2,4,6-Tribromophenol	95	10	140
Terphenyl-d14	117	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Date of Report: 05/04/22
Date Received: 04/25/22
Project: Auburn VW BE-0107-B, F&BI 204418

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 204418-02 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	100	71-131

Date of Report: 05/04/22
Date Received: 04/25/22
Project: Auburn VW BE-0107-B, F&BI 204418

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 204465-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	108	69-134

Date of Report: 05/04/22
Date Received: 04/25/22
Project: Auburn VW BE-0107-B, F&BI 204418

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 204415-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	390	87	88	63-146	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	90	79-144

Date of Report: 05/04/22
Date Received: 04/25/22
Project: Auburn VW BE-0107-B, F&BI 204418

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	112	100	63-142	11

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 204314-03 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	83	81	75-125	2
Cadmium	mg/kg (ppm)	10	<5	87	86	75-125	1
Chromium	mg/kg (ppm)	50	10.8	80	78	75-125	3
Lead	mg/kg (ppm)	50	51.1	92	81	75-125	13
Mercury	mg/kg (ppm	5	<5	86	87	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	80	80-120
Cadmium	mg/kg (ppm)	10	91	80-120
Chromium	mg/kg (ppm)	50	90	80-120
Lead	mg/kg (ppm)	50	88	80-120
Mercury	mg/kg (ppm)	5	94	80-120

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 204454-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<1	114	108	75-125	5
Cadmium	ug/L (ppb)	5	<1	102	96	75-125	6
Chromium	ug/L (ppb)	20	<1	112	107	75-125	5
Lead	ug/L (ppb)	10	1.43	93	88	75-125	6
Mercury	ug/L (ppb)	5	<1	96	100	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	99	80-120
Cadmium	ug/L (ppb)	5	97	80-120
Chromium	ug/L (ppb)	20	95	80-120
Lead	ug/L (ppb)	10	93	80-120
Mercury	ug/L (ppb)	5	97	80-120

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 204418-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	1	<0.5	18	13	10-142	32 vo
Chloromethane	mg/kg (ppm)	1	<0.5	45	43	10-126	5
Vinyl chloride	mg/kg (ppm)	1	0.066	44	40	10-138	10
Bromomethane	mg/kg (ppm)	1	<0.5	77	66	10-163	15
Chloroethane	mg/kg (ppm)	1	<0.5	60	58	10-176	3
Trichlorofluoromethane	mg/kg (ppm)	1	<0.5	57	51	10-176	11
Acetone	mg/kg (ppm)	5	<5	79	84	10-163	6
1,1-Dichloroethene	mg/kg (ppm)	1	<0.05	66	63	10-160	5
Hexane	mg/kg (ppm)	1	<0.25	51	44	10-137	15
Methylene chloride	mg/kg (ppm)	1	<0.5	84	85	10-156	1
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	1	<0.05	80	80	21-145	0
trans-1,2-Dichloroethene	mg/kg (ppm)	1	<0.05	73	71	14-137	3
1,1-Dichloroethane	mg/kg (ppm)	1	<0.05	75	74	19-140	1
2,2-Dichloropropane	mg/kg (ppm)	1	<0.05	106	97	10-158	9
cis-1,2-Dichloroethene	mg/kg (ppm)	1	<0.05	77	76	25-135	1
Chloroform	mg/kg (ppm)	1	<0.05	84	81	21-145	4
2-Butanone (MEK)	mg/kg (ppm)	5	<1	78	81	19-147	4
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	<0.05	78	78	12-160	0
1,1,1-Trichloroethane	mg/kg (ppm)	1	<0.05	79	77	10-156	3
1,1-Dichloropropene	mg/kg (ppm)	1	<0.05	77	74	17-140	4
Carbon tetrachloride	mg/kg (ppm)	1	<0.05	78	76	9-164	3
Benzene	mg/kg (ppm)	1	<0.03	76	75	29-129	1
Trichloroethene	mg/kg (ppm)	1	<0.02	77	76	21-139	1
1,2-Dichloropropane	mg/kg (ppm)	1	<0.05	74	78	30-135	5
Bromodichloromethane	mg/kg (ppm)	1	<0.05	85	85	23-155	0
Dibromomethane	mg/kg (ppm)	1	<0.05	82	82	23-145	0
4-Methyl-2-pentanone	mg/kg (ppm)	5	<1	86	90	24-155	5
cis-1,3-Dichloropropene	mg/kg (ppm)	1	<0.05	83	86	28-144	4
Toluene	mg/kg (ppm)	1	<0.05	80	80	35-130	0
trans-1,3-Dichloropropene	mg/kg (ppm)	1	<0.05	87	90	26-149	3
1,1,2-Trichloroethane	mg/kg (ppm)	1	<0.05	86	89	10-205	3
2-Hexanone	mg/kg (ppm)	5	<0.5	87	91	15-166	4
1,3-Dichloropropane	mg/kg (ppm)	1	<0.05	83	87	31-137	5
Tetrachloroethene	mg/kg (ppm)	1	<0.025	80	82	20-133	2
Dibromochloromethane	mg/kg (ppm)	1	<0.05	88	89	28-150	1
1,2-Dibromoethane (EDB)	mg/kg (ppm)	1	<0.05	85	85	28-142	0
Chlorobenzene	mg/kg (ppm)	1	<0.05	86	87	32-129	1
Ethylbenzene	mg/kg (ppm)	1	<0.05	85	87	32-137	2
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	1	<0.05	93	93	31-143	0
m,p-Xylene	mg/kg (ppm)	2	<0.1	86	87	34-136	1
o-Xylene	mg/kg (ppm)	1	<0.05	89	88	33-134	1
Styrene	mg/kg (ppm)	1	<0.05	89	88	35-137	1
Isopropylbenzene	mg/kg (ppm)	1	<0.05	90	90	31-142	0
Bromoform	mg/kg (ppm)	1	<0.05	89	92	21-156	3
n-Propylbenzene	mg/kg (ppm)	1	<0.05	88	89	23-146	1
Bromobenzene	mg/kg (ppm)	1	<0.05	85	88	34-130	3
1,3,5-Trimethylbenzene	mg/kg (ppm)	1	<0.05	87	89	18-149	2
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	1	<0.05	91	96	28-140	5
1,2,3-Trichloropropane	mg/kg (ppm)	1	<0.05	89	93	25-144	4
2-Chlorotoluene	mg/kg (ppm)	1	<0.05	87	90	31-134	3
4-Chlorotoluene	mg/kg (ppm)	1	<0.05	86	90	31-136	5
tert-Butylbenzene	mg/kg (ppm)	1	<0.05	90	92	30-137	2
1,2,4-Trimethylbenzene	mg/kg (ppm)	1	<0.05	88	89	10-182	1
sec-Butylbenzene	mg/kg (ppm)	1	<0.05	91	92	23-145	1
p-Isopropyltoluene	mg/kg (ppm)	1	<0.05	92	92	21-149	0
1,3-Dichlorobenzene	mg/kg (ppm)	1	<0.05	88	91	30-131	3
1,4-Dichlorobenzene	mg/kg (ppm)	1	<0.05	88	92	29-129	4
1,2-Dichlorobenzene	mg/kg (ppm)	1	<0.05	89	92	31-132	3
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	1	<0.5	93	97	11-161	4
1,2,4-Trichlorobenzene	mg/kg (ppm)	1	<0.25	93	92	22-142	1
Hexachlorobutadiene	mg/kg (ppm)	1	<0.25	98	94	10-142	4
Naphthalene	mg/kg (ppm)	1	<0.05	92	92	14-157	0
1,2,3-Trichlorobenzene	mg/kg (ppm)	1	<0.25	92	92	20-144	0

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	1	40	10-146
Chloromethane	mg/kg (ppm)	1	59	27-133
Vinyl chloride	mg/kg (ppm)	1	64	22-139
Bromomethane	mg/kg (ppm)	1	78	38-114
Chloroethane	mg/kg (ppm)	1	69	9-163
Trichlorofluoromethane	mg/kg (ppm)	1	73	10-196
Acetone	mg/kg (ppm)	5	95	52-141
1,1-Dichloroethene	mg/kg (ppm)	1	79	47-128
Hexane	mg/kg (ppm)	1	88	43-142
Methylene chloride	mg/kg (ppm)	1	96	10-184
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	1	91	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	1	89	67-129
1,1-Dichloroethane	mg/kg (ppm)	1	86	68-115
2,2-Dichloropropane	mg/kg (ppm)	1	111	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	1	85	72-127
Chloroform	mg/kg (ppm)	1	88	66-120
2-Butanone (MEK)	mg/kg (ppm)	5	81	30-197
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	84	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	1	88	62-131
1,1-Dichloropropene	mg/kg (ppm)	1	85	69-128
Carbon tetrachloride	mg/kg (ppm)	1	90	60-139
Benzene	mg/kg (ppm)	1	83	71-118
Trichloroethene	mg/kg (ppm)	1	84	63-121
1,2-Dichloropropane	mg/kg (ppm)	1	82	72-127
Bromodichloromethane	mg/kg (ppm)	1	91	57-126
Dibromomethane	mg/kg (ppm)	1	87	62-123
4-Methyl-2-pentanone	mg/kg (ppm)	5	87	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	1	89	67-122
Toluene	mg/kg (ppm)	1	83	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	1	89	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	1	81	64-115
2-Hexanone	mg/kg (ppm)	5	80	33-152
1,3-Dichloropropane	mg/kg (ppm)	1	83	72-130
Tetrachloroethene	mg/kg (ppm)	1	85	72-114
Dibromochloromethane	mg/kg (ppm)	1	86	55-121
1,2-Dibromoethane (EDB)	mg/kg (ppm)	1	84	74-132
Chlorobenzene	mg/kg (ppm)	1	83	76-111
Ethylbenzene	mg/kg (ppm)	1	83	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	1	89	64-121
m,p-Xylene	mg/kg (ppm)	2	85	78-122
o-Xylene	mg/kg (ppm)	1	83	77-124
Styrene	mg/kg (ppm)	1	85	74-126
Isopropylbenzene	mg/kg (ppm)	1	86	76-127
Bromoform	mg/kg (ppm)	1	87	56-132
n-Propylbenzene	mg/kg (ppm)	1	85	74-124
Bromobenzene	mg/kg (ppm)	1	83	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	1	82	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	1	87	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	1	84	61-137
2-Chlorotoluene	mg/kg (ppm)	1	83	74-121
4-Chlorotoluene	mg/kg (ppm)	1	83	75-122
tert-Butylbenzene	mg/kg (ppm)	1	85	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	1	83	76-125
sec-Butylbenzene	mg/kg (ppm)	1	85	71-130
p-Isopropyltoluene	mg/kg (ppm)	1	85	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	1	82	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	1	84	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	1	83	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	1	88	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	1	87	64-135
Hexachlorobutadiene	mg/kg (ppm)	1	85	50-153
Naphthalene	mg/kg (ppm)	1	84	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	1	86	63-138

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 204474-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	110	50-150
Chloromethane	ug/L (ppb)	10	<10	87	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	89	16-176
Bromomethane	ug/L (ppb)	10	<5	106	10-193
Chloroethane	ug/L (ppb)	10	<1	101	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	104	50-150
Acetone	ug/L (ppb)	50	<50	84	15-179
1,1-Dichloroethene	ug/L (ppb)	10	<1	112	50-150
Hexane	ug/L (ppb)	10	<5	71	49-161
Methylene chloride	ug/L (ppb)	10	<5	106	40-143
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	108	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	97	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	99	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	80	10-335
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	98	50-150
Chloroform	ug/L (ppb)	10	<1	104	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	81	34-168
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	119	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	112	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	95	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	109	50-150
Benzene	ug/L (ppb)	10	<0.35	96	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	97	43-133
1,2-Dichloropropane	ug/L (ppb)	10	<1	87	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	101	50-150
Dibromomethane	ug/L (ppb)	10	<1	101	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	99	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	85	48-145
Toluene	ug/L (ppb)	10	<1	90	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	83	37-152
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	89	50-150
2-Hexanone	ug/L (ppb)	50	<10	83	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	90	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	98	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	96	33-164
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	96	50-150
Chlorobenzene	ug/L (ppb)	10	<1	96	50-150
Ethylbenzene	ug/L (ppb)	10	<1	104	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	107	50-150
m,p-Xylene	ug/L (ppb)	20	<2	102	50-150
o-Xylene	ug/L (ppb)	10	<1	96	50-150
Styrene	ug/L (ppb)	10	<1	98	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	102	50-150
Bromoform	ug/L (ppb)	10	<5	92	23-161
n-Propylbenzene	ug/L (ppb)	10	<1	88	50-150
Bromobenzene	ug/L (ppb)	10	<1	93	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	92	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	87	10-235
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	84	33-151
2-Chlorotoluene	ug/L (ppb)	10	<1	90	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	90	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	93	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	92	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	90	46-139
p-Isopropyltoluene	ug/L (ppb)	10	<1	94	46-140
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	93	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	92	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	95	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	84	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	90	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	86	42-150
Naphthalene	ug/L (ppb)	10	<1	89	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	90	44-155

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	90	84	70-130	7
Chloromethane	ug/L (ppb)	10	102	104	70-130	2
Vinyl chloride	ug/L (ppb)	10	110	109	70-130	1
Bromomethane	ug/L (ppb)	10	126	112	28-182	12
Chloroethane	ug/L (ppb)	10	119	117	70-130	2
Trichlorofluoromethane	ug/L (ppb)	10	97	88	70-130	10
Acetone	ug/L (ppb)	50	86	89	42-155	3
1,1-Dichloroethene	ug/L (ppb)	10	94	89	70-130	5
Hexane	ug/L (ppb)	10	82	81	50-161	1
Methylene chloride	ug/L (ppb)	10	97	88	29-192	10
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	98	94	70-130	4
trans-1,2-Dichloroethene	ug/L (ppb)	10	94	88	70-130	7
1,1-Dichloroethane	ug/L (ppb)	10	97	92	70-130	5
2,2-Dichloropropane	ug/L (ppb)	10	94	88	70-130	7
cis-1,2-Dichloroethene	ug/L (ppb)	10	96	90	70-130	6
Chloroform	ug/L (ppb)	10	98	90	70-130	9
2-Butanone (MEK)	ug/L (ppb)	50	94	87	50-157	8
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	95	89	70-130	7
1,1,1-Trichloroethane	ug/L (ppb)	10	97	92	70-130	5
1,1-Dichloropropene	ug/L (ppb)	10	96	88	70-130	9
Carbon tetrachloride	ug/L (ppb)	10	96	88	70-130	9
Benzene	ug/L (ppb)	10	96	93	70-130	3
Trichloroethene	ug/L (ppb)	10	93	87	70-130	7
1,2-Dichloropropane	ug/L (ppb)	10	93	91	70-130	2
Bromodichloromethane	ug/L (ppb)	10	94	85	70-130	10
Dibromomethane	ug/L (ppb)	10	95	89	70-130	7
4-Methyl-2-pentanone	ug/L (ppb)	50	92	93	70-130	1
cis-1,3-Dichloropropene	ug/L (ppb)	10	90	89	70-130	1
Toluene	ug/L (ppb)	10	94	95	70-130	1
trans-1,3-Dichloropropene	ug/L (ppb)	10	96	98	70-130	2
1,1,2-Trichloroethane	ug/L (ppb)	10	95	98	70-130	3
2-Hexanone	ug/L (ppb)	50	95	103	69-130	8
1,3-Dichloropropane	ug/L (ppb)	10	95	100	70-130	5
Tetrachloroethene	ug/L (ppb)	10	94	93	70-130	1
Dibromochloromethane	ug/L (ppb)	10	94	97	63-142	3
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	98	97	70-130	1
Chlorobenzene	ug/L (ppb)	10	97	96	70-130	1
Ethylbenzene	ug/L (ppb)	10	100	99	70-130	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	102	99	70-130	3
m,p-Xylene	ug/L (ppb)	20	100	99	70-130	1
o-Xylene	ug/L (ppb)	10	100	98	70-130	2
Styrene	ug/L (ppb)	10	102	100	70-130	2
Isopropylbenzene	ug/L (ppb)	10	105	101	70-130	4
Bromoform	ug/L (ppb)	10	97	95	50-157	2
n-Propylbenzene	ug/L (ppb)	10	101	99	70-130	2
Bromobenzene	ug/L (ppb)	10	95	94	70-130	1
1,3,5-Trimethylbenzene	ug/L (ppb)	10	102	97	52-150	5
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	104	99	70-130	5
1,2,3-Trichloropropane	ug/L (ppb)	10	96	96	70-130	0
2-Chlorotoluene	ug/L (ppb)	10	100	97	70-130	3
4-Chlorotoluene	ug/L (ppb)	10	100	97	70-130	3
tert-Butylbenzene	ug/L (ppb)	10	101	96	70-130	5
1,2,4-Trimethylbenzene	ug/L (ppb)	10	103	98	70-130	5
sec-Butylbenzene	ug/L (ppb)	10	102	98	70-130	4
p-Isopropyltoluene	ug/L (ppb)	10	102	97	70-130	5
1,3-Dichlorobenzene	ug/L (ppb)	10	100	96	70-130	4
1,4-Dichlorobenzene	ug/L (ppb)	10	97	94	70-130	3
1,2-Dichlorobenzene	ug/L (ppb)	10	100	96	70-130	4
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	99	96	70-130	3
1,2,4-Trichlorobenzene	ug/L (ppb)	10	96	87	70-130	10
Hexachlorobutadiene	ug/L (ppb)	10	93	86	70-130	8
Naphthalene	ug/L (ppb)	10	103	95	70-130	8
1,2,3-Trichlorobenzene	ug/L (ppb)	10	101	91	69-143	10

Date of Report: 05/04/22
Date Received: 04/25/22
Project: Auburn VW BE-0107-B, F&BI 204418

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 204385-02 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	<0.01	78	79	50-150	1
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	79	81	50-150	2
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	78	80	50-150	3
Acenaphthylene	mg/kg (ppm)	0.83	<0.01	84	87	50-150	4
Acenaphthene	mg/kg (ppm)	0.83	<0.01	83	92	50-150	10
Fluorene	mg/kg (ppm)	0.83	<0.01	84	84	50-150	0
Phenanthrene	mg/kg (ppm)	0.83	<0.01	84	87	50-150	4
Anthracene	mg/kg (ppm)	0.83	<0.01	86	89	50-150	3
Fluoranthene	mg/kg (ppm)	0.83	<0.01	89	93	50-150	4
Pyrene	mg/kg (ppm)	0.83	<0.01	90	88	50-150	2
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	87	89	50-150	2
Chrysene	mg/kg (ppm)	0.83	<0.01	88	89	50-150	1
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	93	95	50-150	2
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	95	97	50-150	2
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	91	94	50-150	3
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	100	93	50-150	7
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	100	93	50-150	7
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	<0.01	98	89	50-150	10

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	80	61-102
2-Methylnaphthalene	mg/kg (ppm)	0.83	83	62-108
1-Methylnaphthalene	mg/kg (ppm)	0.83	82	62-108
Acenaphthylene	mg/kg (ppm)	0.83	89	61-111
Acenaphthene	mg/kg (ppm)	0.83	93	61-110
Fluorene	mg/kg (ppm)	0.83	88	62-114
Phenanthrene	mg/kg (ppm)	0.83	88	64-112
Anthracene	mg/kg (ppm)	0.83	90	63-111
Fluoranthene	mg/kg (ppm)	0.83	94	66-115
Pyrene	mg/kg (ppm)	0.83	95	65-112
Benz(a)anthracene	mg/kg (ppm)	0.83	93	64-116
Chrysene	mg/kg (ppm)	0.83	93	66-119
Benzo(a)pyrene	mg/kg (ppm)	0.83	98	62-116
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	96	61-118
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	96	65-119
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	108	64-130
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	108	67-131
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	106	67-126

Date of Report: 05/04/22
Date Received: 04/25/22
Project: Auburn VW BE-0107-B, F&BI 204418

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample 1/0.5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	2.5	74	78	62-90	5
2-Methylnaphthalene	ug/L (ppb)	2.5	80	86	64-93	7
1-Methylnaphthalene	ug/L (ppb)	2.5	80	84	64-93	5
Acenaphthylene	ug/L (ppb)	2.5	82	88	70-130	7
Acenaphthene	ug/L (ppb)	2.5	80	86	70-130	7
Fluorene	ug/L (ppb)	2.5	85	95	70-130	11
Phenanthrene	ug/L (ppb)	2.5	83	92	70-130	10
Anthracene	ug/L (ppb)	2.5	85	93	70-130	9
Fluoranthene	ug/L (ppb)	2.5	90	99	70-130	10
Pyrene	ug/L (ppb)	2.5	89	96	70-130	8
Benz(a)anthracene	ug/L (ppb)	2.5	87	99	70-130	13
Chrysene	ug/L (ppb)	2.5	88	98	70-130	11
Benzo(a)pyrene	ug/L (ppb)	2.5	92	105	70-130	13
Benzo(b)fluoranthene	ug/L (ppb)	2.5	91	105	70-130	14
Benzo(k)fluoranthene	ug/L (ppb)	2.5	89	102	70-130	14
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	2.5	99	113	70-130	13
Dibenz(a,h)anthracene	ug/L (ppb)	2.5	100	118	70-130	17
Benzo(g,h,i)perylene	ug/L (ppb)	2.5	97	113	70-130	15

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

204418
[redacted]

SAMPLE CHAIN OF CUSTODY

04/25/22 VS-B4 / ~~A03~~ / VW3 / BI4

Page # 1 of 3

E03

Report To Dan Hatch

Company Bluestone Environmental

Address

City, State, ZIP

Phone ____ Email danh@bluestoneenv.com

SAMPLERS (*signature*) [redacted]	
PROJECT NAME Auburn VW	PO # BE-0107-B
REMARKS Project specific RLs? - Yes [✓ No]	INVOICE TO Bluestone

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MTCA 5 Metals				Notes
B-1-5	01 A-E	4/24/22	9:40	S	5												
B-1-10	02	↓	9:45	↓	↓	X	X			X							
B-1-13	03		9:50			X	X			X	X		X				
B-1-15	04		9:55														
B-1-W	05 A-F		10:10	W	6	X	X			X	X		X				4-6 voa + poly
B-2-5	06 A-E		10:30	S	5	X	X			X	X		X				
B-2-10	07		10:35	↓	↓												
B-2-13	08		10:40			X				X							
B-2-15	09		10:45														
B-2-W	10	↓	10:55	W	6	X	X			X	X		X				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Dan Hatch	Bluestone	4/25/22	13:00
Received by:	Eric Young	F&B	4/25/22	~~1035~~ 1835
Relinquished by:				
Received by:		Samples received at 4 °C		

204418 [redacted]

SAMPLE CHAIN OF CUSTODY

04/25/22 [redacted] BD4/VS-B4/VW3/E03

Page # 2 of 3

Report To Dan Hatch

Company Bluestone

Address

City, State, ZIP

Phone Email

SAMPLERS (signature)

PROJECT NAME	PO #
Auburn VW	BE-0102-B
REMARKS Project specific RLs? - Yes / No	INVOICE TO Bluestone

TURNAROUND TIME
☑ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MTCA 5 metals				Notes
B-3-5	11 A-E	4/24/22	11:10	S	5	X	X			X							
B-3-10	12		11:15														
B-3-12	13		11:20			X	X			X							
B-3-15	14		11:25														
~~[illegible]~~ B-4-5	15		11:50														
B-4-10	16		11:55			X	X			X							
B-4-14	17		12:00			X	X			X	X		X				
B-4-15	18		12:05	↓	↓												
B-4-W	19 A-F		12:10	W	6	X	X			X	X		X				
		↓															

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Dan Hatch	Bluestone	4/25/22	1300
Received by:		Eric Young	F&B	4/25/22	~~1845~~ 1835
Relinquished by:					
Received by:			Samples received at		4 °C

204418

[redacted]

SAMPLE CHAIN OF CUSTODY

04/25/22 ~~A23~~ / BI4 / VS-B4 E03 / ww3

Report To Bluestone

Company

Address

City, State, ZIP

Phone Email

SAMPLERS (signature) [redacted]

PROJECT NAME Auburn UW

PO # BE0107-B

REMARKS

Project specific RLs? - Yes / No

INVOICE TO Bluestone

Page # 3 of 3

TURNAROUND TIME
☑ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Metals metals				Notes
B-5-5	20 A-E	4/24/22	12:55	S	5												✓ - per DH
B-5-10	21		13:00			X				X	X						4/26
B-5-12	22		13:05														
B-5-15	23		13:10	↓	↓	X				X			X				
B-5-W	24 A-F		13:15	W	6	X	X			X	✓		X				
B-6-5	25 A-E		13:30	S	5												
B-6-10	26		13:35			X				X							
B-6-13	27		13:40			X	X			X	X		X				
B-6-15	28		13:45	↓	↓												
B-6-W	29 A-F		13 55	W	6	X	X			X	X		X				unpreserved P/01

Friedman & Bruya, Inc.
Ph. (206) 285-8282

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Dan [illegible]	Bluestone	4/25/22	13:00
Received by:		[illegible]	FB	4/25/22	18:35
Relinquished by:					
Received by:			Samples received at 4 °C		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

May 12, 2022

Dan Hatch, Project Manager
Bluestone Environmental NW
20204 SE 284th St
Kent, WA 98042

Dear Mr Hatch:

Included are the additional results from the testing of material submitted on April 25, 2022 from the Auburn VW BE-0107-B, F&BI 204418 project. There are 15 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
BST0512R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on April 25, 2022 by Friedman & Bruya, Inc. from the Bluestone Environmental NW Auburn VW BE-0107-B, F&BI 204418 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Bluestone Environmental NW
204418 -01	B-1-5
204418 -02	B-1-10
204418 -03	B-1-13
204418 -04	B-1-15
204418 -05	B-1-W
204418 -06	B-2-5
204418 -07	B-2-10
204418 -08	B-2-13
204418 -09	B-2-15
204418 -10	B-2-W
204418 -11	B-3-5
204418 -12	B-3-10
204418 -13	B-3-12
204418 -14	B-3-15
204418 -15	B-4-5
204418 -16	B-4-10
204418 -17	B-4-14
204418 -18	B-4-15
204418 -19	B-4-W
204418 -20	B-5-5
204418 -21	B-5-10
204418 -22	B-5-12
204418 -23	B-5-15
204418 -24	B-5-W
204418 -25	B-6-5
204418 -26	B-6-10
204418 -27	B-6-13
204418 -28	B-6-15
204418 -29	B-6-W

The 8260D matrix spike and matrix spike duplicate failed the relative percent difference for bromomethane. The analyte was not detected therefore the data were acceptable.

All other quality control requirements were acceptable.

Date of Report: 05/12/22
Date Received: 04/25/22
Project: Auburn VW BE-0107-B, F&BI 204418
Date Extracted: 05/06/22
Date Analyzed: 05/06/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 56-165)
B-1-5 204418-01	<50	<250	107
B-2-10 204418-07	<50	<250	111
B-4-5 204418-15	<50	<250	109
Method Blank 02-1073 MB	<50	<250	108

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	B-1-5	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	Auburn VW BE-0107-B
Date Extracted:	05/06/22	Lab ID:	204418-01
Date Analyzed:	05/06/22	Data File:	050615.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	90	109
Toluene-d8	97	89	112
4-Bromofluorobenzene	97	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	Not Applicable	Project:	Auburn VW BE-0107-B
Date Extracted:	05/06/22	Lab ID:	02-988 mb
Date Analyzed:	05/06/22	Data File:	050605.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	90	109
Toluene-d8	98	89	112
4-Bromofluorobenzene	100	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-1-5	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	Auburn VW BE-0107-B
Date Extracted:	05/06/22	Lab ID:	204418-01 1/5
Date Analyzed:	05/09/22	Data File:	050920.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	66	39	103
Phenol-d6	73	48	109
Nitrobenzene-d5	71	23	138
2-Fluorobiphenyl	76	50	150
2,4,6-Tribromophenol	73	40	127
Terphenyl-d14	87	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.032
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-2-10	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	Auburn VW BE-0107-B
Date Extracted:	05/06/22	Lab ID:	204418-07 1/5
Date Analyzed:	05/09/22	Data File:	050921.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	59	39	103
Phenol-d6	67	48	109
Nitrobenzene-d5	62	23	138
2-Fluorobiphenyl	72	50	150
2,4,6-Tribromophenol	73	40	127
Terphenyl-d14	88	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-3-5	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	Auburn VW BE-0107-B
Date Extracted:	05/06/22	Lab ID:	204418-11 1/25
Date Analyzed:	05/09/22	Data File:	050923.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	59 d	39	103
Phenol-d6	67 d	48	109
Nitrobenzene-d5	62 d	23	138
2-Fluorobiphenyl	76 d	50	150
2,4,6-Tribromophenol	75 d	40	127
Terphenyl-d14	82 d	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
2-Methylnaphthalene	<0.05
1-Methylnaphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	<0.05
Anthracene	<0.05
Fluoranthene	<0.05
Pyrene	<0.05
Benz(a)anthracene	<0.05
Chrysene	<0.05
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-4-5	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	Auburn VW BE-0107-B
Date Extracted:	05/06/22	Lab ID:	204418-15 1/25
Date Analyzed:	05/09/22	Data File:	050924.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	63 d	39	103
Phenol-d6	73 d	48	109
Nitrobenzene-d5	66 d	23	138
2-Fluorobiphenyl	79 d	50	150
2,4,6-Tribromophenol	77 d	40	127
Terphenyl-d14	89 d	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
2-Methylnaphthalene	<0.05
1-Methylnaphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	<0.05
Anthracene	<0.05
Fluoranthene	<0.05
Pyrene	<0.05
Benz(a)anthracene	<0.05
Chrysene	<0.05
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-6-5	Client:	Bluestone Environmental NW
Date Received:	04/25/22	Project:	Auburn VW BE-0107-B
Date Extracted:	05/06/22	Lab ID:	204418-25 1/5
Date Analyzed:	05/09/22	Data File:	050922.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	64	39	103
Phenol-d6	71	48	109
Nitrobenzene-d5	66	23	138
2-Fluorobiphenyl	76	50	150
2,4,6-Tribromophenol	75	40	127
Terphenyl-d14	85	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	Not Applicable	Project:	Auburn VW BE-0107-B
Date Extracted:	05/06/22	Lab ID:	02-1076 mb 1/5
Date Analyzed:	05/09/22	Data File:	050909.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	80	39	103
Phenol-d6	88	48	109
Nitrobenzene-d5	84	23	138
2-Fluorobiphenyl	94	50	150
2,4,6-Tribromophenol	77	40	127
Terphenyl-d14	102	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Date of Report: 05/12/22
Date Received: 04/25/22
Project: Auburn VW BE-0107-B, F&BI 204418

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 204286-08 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	810	104	100	63-146	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	110	79-144

Date of Report: 05/12/22
Date Received: 04/25/22
Project: Auburn VW BE-0107-B, F&BI 204418

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 205057-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	1	<0.5	17	19	10-142	11
Chloromethane	mg/kg (ppm)	1	<0.5	46	45	10-126	2
Vinyl chloride	mg/kg (ppm)	1	<0.05	44	47	10-138	7
Bromomethane	mg/kg (ppm)	1	<0.5	64	83	10-163	26 vo
Chloroethane	mg/kg (ppm)	1	<0.5	59	61	10-176	3
Trichlorofluoromethane	mg/kg (ppm)	1	<0.5	50	56	10-176	11
Acetone	mg/kg (ppm)	5	<5	68	68	10-163	0
1,1-Dichloroethene	mg/kg (ppm)	1	<0.05	65	68	10-160	5
Hexane	mg/kg (ppm)	1	<0.25	54	56	10-137	4
Methylene chloride	mg/kg (ppm)	1	<0.5	80	76	10-156	5
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	1	<0.05	87	86	21-145	1
trans-1,2-Dichloroethene	mg/kg (ppm)	1	<0.05	77	75	14-137	3
1,1-Dichloroethane	mg/kg (ppm)	1	<0.05	79	80	19-140	1
2,2-Dichloropropane	mg/kg (ppm)	1	<0.05	98	98	10-158	0
cis-1,2-Dichloroethene	mg/kg (ppm)	1	<0.05	80	85	25-135	6
Chloroform	mg/kg (ppm)	1	<0.05	84	87	21-145	4
2-Butanone (MEK)	mg/kg (ppm)	5	<1	79	83	19-147	5
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	<0.05	80	82	12-160	2
1,1,1-Trichloroethane	mg/kg (ppm)	1	<0.05	80	82	10-156	2
1,1-Dichloropropene	mg/kg (ppm)	1	<0.05	76	80	17-140	5
Carbon tetrachloride	mg/kg (ppm)	1	<0.05	80	81	9-164	1
Benzene	mg/kg (ppm)	1	<0.03	77	81	29-129	5
Trichloroethene	mg/kg (ppm)	1	<0.02	80	80	21-139	0
1,2-Dichloropropane	mg/kg (ppm)	1	<0.05	77	80	30-135	4
Bromodichloromethane	mg/kg (ppm)	1	<0.05	83	85	23-155	2
Dibromomethane	mg/kg (ppm)	1	<0.05	80	84	23-145	5
4-Methyl-2-pentanone	mg/kg (ppm)	5	<1	86	89	24-155	3
cis-1,3-Dichloropropene	mg/kg (ppm)	1	<0.05	79	84	28-144	6
Toluene	mg/kg (ppm)	1	<0.05	76	78	35-130	3
trans-1,3-Dichloropropene	mg/kg (ppm)	1	<0.05	78	80	26-149	3
1,1,2-Trichloroethane	mg/kg (ppm)	1	<0.05	85	83	10-205	2
2-Hexanone	mg/kg (ppm)	5	<0.5	83	90	15-166	8
1,3-Dichloropropane	mg/kg (ppm)	1	<0.05	77	81	31-137	5
Tetrachloroethene	mg/kg (ppm)	1	<0.025	77	79	20-133	3
Dibromochloromethane	mg/kg (ppm)	1	<0.05	75	77	28-150	3
1,2-Dibromoethane (EDB)	mg/kg (ppm)	1	<0.05	77	81	28-142	5
Chlorobenzene	mg/kg (ppm)	1	<0.05	79	81	32-129	2
Ethylbenzene	mg/kg (ppm)	1	<0.05	80	83	32-137	4
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	1	<0.05	82	83	31-143	1
m,p-Xylene	mg/kg (ppm)	2	<0.1	79	82	34-136	4
o-Xylene	mg/kg (ppm)	1	<0.05	82	82	33-134	0
Styrene	mg/kg (ppm)	1	<0.05	78	81	35-137	4
Isopropylbenzene	mg/kg (ppm)	1	<0.05	85	87	31-142	2
Bromoform	mg/kg (ppm)	1	<0.05	74	77	21-156	4
n-Propylbenzene	mg/kg (ppm)	1	<0.05	83	83	23-146	0
Bromobenzene	mg/kg (ppm)	1	<0.05	74	78	34-130	5
1,3,5-Trimethylbenzene	mg/kg (ppm)	1	<0.05	76	80	18-149	5
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	1	<0.05	93	85	28-140	9
1,2,3-Trichloropropane	mg/kg (ppm)	1	<0.05	75	82	25-144	9
2-Chlorotoluene	mg/kg (ppm)	1	<0.05	77	80	31-134	4
4-Chlorotoluene	mg/kg (ppm)	1	<0.05	75	79	31-136	5
tert-Butylbenzene	mg/kg (ppm)	1	<0.05	81	83	30-137	2
1,2,4-Trimethylbenzene	mg/kg (ppm)	1	<0.05	80	83	10-182	4
sec-Butylbenzene	mg/kg (ppm)	1	<0.05	83	84	23-145	1
p-Isopropyltoluene	mg/kg (ppm)	1	<0.05	82	84	21-149	2
1,3-Dichlorobenzene	mg/kg (ppm)	1	<0.05	77	79	30-131	3
1,4-Dichlorobenzene	mg/kg (ppm)	1	<0.05	77	80	29-129	4
1,2-Dichlorobenzene	mg/kg (ppm)	1	<0.05	77	80	31-132	4
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	1	<0.5	80	81	11-161	1
1,2,4-Trichlorobenzene	mg/kg (ppm)	1	<0.25	83	85	22-142	2
Hexachlorobutadiene	mg/kg (ppm)	1	<0.25	90	88	10-142	2
Naphthalene	mg/kg (ppm)	1	<0.05	91	89	14-157	2
1,2,3-Trichlorobenzene	mg/kg (ppm)	1	<0.25	83	85	20-144	2

Date of Report: 05/12/22
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Project: Auburn VW BE-0107-B, F&BI 204418

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	1	40	10-146
Chloromethane	mg/kg (ppm)	1	64	27-133
Vinyl chloride	mg/kg (ppm)	1	70	22-139
Bromomethane	mg/kg (ppm)	1	96	38-114
Chloroethane	mg/kg (ppm)	1	82	9-163
Trichlorofluoromethane	mg/kg (ppm)	1	83	10-196
Acetone	mg/kg (ppm)	5	76	52-141
1,1-Dichloroethene	mg/kg (ppm)	1	91	47-128
Hexane	mg/kg (ppm)	1	88	43-142
Methylene chloride	mg/kg (ppm)	1	107	10-184
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	1	95	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	1	94	67-129
1,1-Dichloroethane	mg/kg (ppm)	1	95	68-115
2,2-Dichloropropane	mg/kg (ppm)	1	133	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	1	97	72-127
Chloroform	mg/kg (ppm)	1	97	66-120
2-Butanone (MEK)	mg/kg (ppm)	5	88	30-197
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	94	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	1	98	62-131
1,1-Dichloropropene	mg/kg (ppm)	1	93	69-128
Carbon tetrachloride	mg/kg (ppm)	1	99	60-139
Benzene	mg/kg (ppm)	1	93	71-118
Trichloroethene	mg/kg (ppm)	1	91	63-121
1,2-Dichloropropane	mg/kg (ppm)	1	88	72-127
Bromodichloromethane	mg/kg (ppm)	1	97	57-126
Dibromomethane	mg/kg (ppm)	1	95	62-123
4-Methyl-2-pentanone	mg/kg (ppm)	5	95	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	1	95	67-122
Toluene	mg/kg (ppm)	1	88	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	1	94	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	1	89	64-115
2-Hexanone	mg/kg (ppm)	5	98	33-152
1,3-Dichloropropane	mg/kg (ppm)	1	89	72-130
Tetrachloroethene	mg/kg (ppm)	1	91	72-114
Dibromochloromethane	mg/kg (ppm)	1	91	55-121
1,2-Dibromoethane (EDB)	mg/kg (ppm)	1	92	74-132
Chlorobenzene	mg/kg (ppm)	1	91	76-111
Ethylbenzene	mg/kg (ppm)	1	92	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	1	98	64-121
m,p-Xylene	mg/kg (ppm)	2	92	78-122
o-Xylene	mg/kg (ppm)	1	94	77-124
Styrene	mg/kg (ppm)	1	91	74-126
Isopropylbenzene	mg/kg (ppm)	1	93	76-127
Bromoform	mg/kg (ppm)	1	92	56-132
n-Propylbenzene	mg/kg (ppm)	1	90	74-124
Bromobenzene	mg/kg (ppm)	1	87	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	1	89	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	1	91	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	1	90	61-137
2-Chlorotoluene	mg/kg (ppm)	1	91	74-121
4-Chlorotoluene	mg/kg (ppm)	1	90	75-122
tert-Butylbenzene	mg/kg (ppm)	1	92	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	1	90	76-125
sec-Butylbenzene	mg/kg (ppm)	1	91	71-130
p-Isopropyltoluene	mg/kg (ppm)	1	92	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	1	91	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	1	91	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	1	91	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	1	95	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	1	94	64-135
Hexachlorobutadiene	mg/kg (ppm)	1	96	50-153
Naphthalene	mg/kg (ppm)	1	93	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	1	94	63-138

Date of Report: 05/12/22
Date Received: 04/25/22
Project: Auburn VW BE-0107-B, F&BI 204418

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 205099-02 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	<0.01	82	78	50-150	5
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	85	83	50-150	2
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	84	82	50-150	2
Acenaphthylene	mg/kg (ppm)	0.83	<0.01	85	84	50-150	1
Acenaphthene	mg/kg (ppm)	0.83	<0.01	83	83	50-150	0
Fluorene	mg/kg (ppm)	0.83	0.016	84	88	50-150	5
Phenanthrene	mg/kg (ppm)	0.83	0.18	69 b	67 b	50-150	3 b
Anthracene	mg/kg (ppm)	0.83	0.024	85	85	50-150	0
Fluoranthene	mg/kg (ppm)	0.83	0.17	72 b	71 b	50-150	1 b
Pyrene	mg/kg (ppm)	0.83	0.15	76	71	50-150	7
Benz(a)anthracene	mg/kg (ppm)	0.83	0.063	81	83	50-150	2
Chrysene	mg/kg (ppm)	0.83	0.089	79	80	50-150	1
Benzo(a)pyrene	mg/kg (ppm)	0.83	0.077	84	84	50-150	0
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	0.084	90	86	50-150	5
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	0.030	94	93	50-150	1
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	0.034	65	72	50-150	10
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	74	79	50-150	7
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	0.030	63	69	50-150	9

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	86	61-102
2-Methylnaphthalene	mg/kg (ppm)	0.83	85	62-108
1-Methylnaphthalene	mg/kg (ppm)	0.83	85	62-108
Acenaphthylene	mg/kg (ppm)	0.83	92	61-111
Acenaphthene	mg/kg (ppm)	0.83	91	61-110
Fluorene	mg/kg (ppm)	0.83	87	62-114
Phenanthrene	mg/kg (ppm)	0.83	92	64-112
Anthracene	mg/kg (ppm)	0.83	90	63-111
Fluoranthene	mg/kg (ppm)	0.83	90	66-115
Pyrene	mg/kg (ppm)	0.83	94	65-112
Benz(a)anthracene	mg/kg (ppm)	0.83	90	64-116
Chrysene	mg/kg (ppm)	0.83	93	66-119
Benzo(a)pyrene	mg/kg (ppm)	0.83	90	62-116
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	91	61-118
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	91	65-119
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	94	64-130
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	101	67-131
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	102	67-126

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

204418

[redacted]

SAMPLE CHAIN OF CUSTODY

04/25/22 VS-B4 / ~~[illegible]~~ / VW3 / BI4

Page # 1 of 3

E03

Report To Dan Hatch

Company Bluestone Environmental

Address

City, State, ZIP

Phone Email danh@bluestoneenv.com

SAMPLERS (*signature*) [redacted]

PROJECT NAME Auburn VW

PO # BE-0107-B

REMARKS

Project specific RLs? - Yes / [✓ No]

INVOICE TO Bluestone

TURNAROUND TIME

☒ Standard turnaround

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Archive samples

☐ Other

Default: Dispose after 30 days

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MTCA 5 metals				● per DH 5/6/22 Notes
B-1-5	01 A-E	4/24/22	9:40	S	5	●				●	●						
B-1-10	02	|	9:45	|	|	X	X			X							
B-1-13	03	|	9:50	|	|	X	X			X	X		X				
B-1-15	04	|	9:55	↓	↓												
B-1-W	05 A-F	|	10:10	W	6	X	X			X	X		X				4 to VOA 1/2L poly
B-2-5	06 A-E	|	10:30	S	5	X	X			X	X		X				
B-2-10	07	|	10:35	|	|	●					●						
B-2-13	08	|	10:40	|	|	X				X							
B-2-15	09	|	10:45	↓	↓												
B-2-W	10	↓	10:55	W	6	X	X			X	X		X				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Dan Hatch	Bluestone	4/25/22	13:00
Received by:	Eric Young	F&B	4/25/22	~~1035~~ 1835
Relinquished by:				
Received by:		Samples received at 4 °C		EP

204418

[redacted]

SAMPLE CHAIN OF CUSTODY

04/25/22 [redacted] BD4 / VS-B4 / VW3 / E03

Page # 2 of 3

Report To Dan Hatch

Company Bluestone

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*)

PROJECT NAME Auburn VW

PO # BE-0102-B

REMARKS

Project specific RLs? - Yes / No

INVOICE TO Bluestone

TURNAROUND TIME

☑ Standard turnaround

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Archive samples

☐ Other

Default: Dispose after 30 days

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MCTA 5 metals				Notes
B-3-5	11 A-E	4/24/22	11:10	S	5	X	X			X	●						
B-3-10	12	↓	11:15	↓	↓												
B-3-12	13		11:20			X	X			X							
B-3-15	14		11:25														
B-4-5	15		11:50			●					●						
B-4-10	16		11:55			X	X			X							
B-4-14	17		12:00			X	X			X	X		X				
B-4-15	18		12:05	↓	↓												
B-4-W	19 A-F		12:10	W	6	X	X			X	X		X				
		↓															

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Dan Hatch	Bluestone	4/25/22	1300
Received by:	Eric Young	FB	4/25/22	~~1845~~ 1835
Relinquished by:				
Received by:			Samples received at 4 °C	

204418

[redacted]

Report To Bluestone

Company

Address

City, State, ZIP

Phone Email

SAMPLE CHAIN OF CUSTODY

04/25/22 ~~A13~~ / B14 / VS-B4

[redacted]

Page # 3 of 3

E03
WW3

SAMPLERS (*signature*)

PROJECT NAME
Auburn UW

PO #
BE0107-B

REMARKS

Project specific RLs? - Yes / No

INVOICE TO
Bluestone

TURNAROUND TIME
☑ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MTCA 5 metals				Notes
B-5-5	20 A-E	4/24/22	12:55	S	5												✓ – per DH
B-5-10	21		13:00			X				X	X						4/26
B-5-12	22		13:05														
B-5-15	23		13:10			X				X			X				
B-5-W	24 A-F		13:15	W	6	X	X			X	✓		X				
B-6-5	25 A-E		13:30	S	5						●						
B-6-10	26		13:35			X				X							
B-6-13	27		13:40			X	X			X	X		X				
B-6-15	28		13:45														
B-6-W	29 A-F		13 55	W	6	X	X			X	X		X				unpreserved

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Dan [illegible]	Bluestone	4/25/22	13:00
Received by:	[illegible]	F&B	4/25/22	1835
Relinquished by:				
Received by:		Samples received at 4 °C		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

June 7, 2022

Dan Hatch, Project Manager
Bluestone Environmental NW
20204 SE 284th St
Kent, WA 98042

Dear Mr Hatch:

Included are the results from the testing of material submitted on May 27, 2022 from the Auburn VW BE-0107-C, F&BI 205474 project. There are 34 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
BST0607R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on May 27, 2022 by Friedman & Bruya, Inc. from the Bluestone Environmental NW Auburn VW BE-0107-C, F&BI 205474 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Bluestone Environmental NW
205474 -01	MW-1-W
205474 -02	MW-2-W
205474 -03	MW-3-W
205474 -04	MW-4-W
205474 -05	MW-5-W
205474 -06	MW-Dup

All quality control requirements were acceptable.

Date of Report: 06/07/22
Date Received: 05/27/22
Project: Auburn VW BE-0107-C, F&BI 205474
Date Extracted: 05/31/22
Date Analyzed: 05/31/22

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
MW-1-W 205474-01	280 x	<250	142
MW-2-W 205474-02	200 x	<250	138
MW-3-W 205474-03	320 x	250 x	141
MW-4-W 205474-04	210 x	<250	126
MW-5-W 205474-05	200 x	<250	135
MW-Dup 205474-06	240 x	<250	145
Method Blank 02-1320 MB	<50	<250	135

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-1-W	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	05/31/22	Lab ID:	205474-01
Date Analyzed:	05/31/22	Data File:	205474-01.094
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	11.8
Cadmium	<1
Lead	<1
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-1-W	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	05/31/22	Lab ID:	205474-01 x5
Date Analyzed:	06/01/22	Data File:	205474-01 x5.045
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Chromium	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-2-W	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	05/31/22	Lab ID:	205474-02
Date Analyzed:	05/31/22	Data File:	205474-02.097
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	4.94
Cadmium	<1
Lead	<1
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-2-W	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	05/31/22	Lab ID:	205474-02 x5
Date Analyzed:	06/01/22	Data File:	205474-02 x5.046
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Chromium	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-3-W	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	05/31/22	Lab ID:	205474-03
Date Analyzed:	05/31/22	Data File:	205474-03.098
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	3.33
Cadmium	<1
Chromium	2.19
Lead	<1
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-4-W	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	05/31/22	Lab ID:	205474-04
Date Analyzed:	05/31/22	Data File:	205474-04.099
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	7.15
Cadmium	<1
Lead	<1
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-4-W	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	05/31/22	Lab ID:	205474-04 x5
Date Analyzed:	06/01/22	Data File:	205474-04 x5.047
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Chromium	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-5-W	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	05/31/22	Lab ID:	205474-05
Date Analyzed:	05/31/22	Data File:	205474-05.100
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	53.3
Cadmium	<1
Lead	<1
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-5-W	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	05/31/22	Lab ID:	205474-05 x5
Date Analyzed:	06/01/22	Data File:	205474-05 x5.048
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Chromium	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-Dup	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	05/31/22	Lab ID:	205474-06
Date Analyzed:	06/03/22	Data File:	205474-06.057
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	6.96
Cadmium	<1
Lead	<1
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-Dup	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	05/31/22	Lab ID:	205474-06 x5
Date Analyzed:	06/01/22	Data File:	205474-06 x5.052
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Chromium	<5

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	NA	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	05/31/22	Lab ID:	I2-391 mb
Date Analyzed:	05/31/22	Data File:	I2-391 mb.082
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-1-W	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	06/02/22	Lab ID:	205474-01
Date Analyzed:	06/02/22	Data File:	060225.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	88	78	126
Toluene-d8	87	84	115
4-Bromofluorobenzene	98	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-2-W	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	06/02/22	Lab ID:	205474-02
Date Analyzed:	06/02/22	Data File:	060226.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	78	126
Toluene-d8	101	84	115
4-Bromofluorobenzene	98	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-3-W	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	06/02/22	Lab ID:	205474-03
Date Analyzed:	06/02/22	Data File:	060227.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	78	126
Toluene-d8	101	84	115
4-Bromofluorobenzene	100	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-4-W	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	06/02/22	Lab ID:	205474-04
Date Analyzed:	06/02/22	Data File:	060228.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	78	126
Toluene-d8	93	84	115
4-Bromofluorobenzene	97	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID: MW-5-W
Date Received: 05/27/22
Date Extracted: 06/02/22
Date Analyzed: 06/02/22
Matrix: Water
Units: ug/L (ppb)

Client: Bluestone Environmental NW
Project: Auburn VW BE-0107-C, F&BI 205474
Lab ID: 205474-05
Data File: 060229.D
Instrument: GCMS11
Operator: VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	105	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID: MW-Dup
Date Received: 05/27/22
Date Extracted: 06/02/22
Date Analyzed: 06/02/22
Matrix: Water
Units: ug/L (ppb)

Client: Bluestone Environmental NW
Project: Auburn VW BE-0107-C, F&BI 205474
Lab ID: 205474-06
Data File: 060230.D
Instrument: GCMS11
Operator: VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	95	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	Not Applicable	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	06/02/22	Lab ID:	02-1308 mb
Date Analyzed:	06/02/22	Data File:	060207.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	78	126
Toluene-d8	101	84	115
4-Bromofluorobenzene	105	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-1-W	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	06/01/22	Lab ID:	205474-01
Date Analyzed:	06/01/22	Data File:	060110.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	21	11	65
Phenol-d6	14	11	65
Nitrobenzene-d5	78	50	150
2-Fluorobiphenyl	78	44	108
2,4,6-Tribromophenol	68	10	140
Terphenyl-d14	83	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-2-W	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	06/01/22	Lab ID:	205474-02
Date Analyzed:	06/01/22	Data File:	060111.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	23	11	65
Phenol-d6	13	11	65
Nitrobenzene-d5	83	50	150
2-Fluorobiphenyl	81	44	108
2,4,6-Tribromophenol	77	10	140
Terphenyl-d14	85	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-3-W	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	06/01/22	Lab ID:	205474-03
Date Analyzed:	06/01/22	Data File:	060112.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	20	11	65
Phenol-d6	14	11	65
Nitrobenzene-d5	86	50	150
2-Fluorobiphenyl	81	44	108
2,4,6-Tribromophenol	72	10	140
Terphenyl-d14	87	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-4-W	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	06/01/22	Lab ID:	205474-04
Date Analyzed:	06/01/22	Data File:	060113.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	11	11	65
Phenol-d6	11	11	65
Nitrobenzene-d5	83	50	150
2-Fluorobiphenyl	83	44	108
2,4,6-Tribromophenol	44	10	140
Terphenyl-d14	90	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-5-W	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	06/01/22	Lab ID:	205474-05
Date Analyzed:	06/01/22	Data File:	060114.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	16	11	65
Phenol-d6	12	11	65
Nitrobenzene-d5	74	50	150
2-Fluorobiphenyl	72	44	108
2,4,6-Tribromophenol	59	10	140
Terphenyl-d14	78	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-Dup	Client:	Bluestone Environmental NW
Date Received:	05/27/22	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	06/01/22	Lab ID:	205474-06
Date Analyzed:	06/01/22	Data File:	060115.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	14	11	65
Phenol-d6	12	11	65
Nitrobenzene-d5	81	50	150
2-Fluorobiphenyl	81	44	108
2,4,6-Tribromophenol	54	10	140
Terphenyl-d14	89	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	Not Applicable	Project:	Auburn VW BE-0107-C, F&BI 205474
Date Extracted:	06/01/22	Lab ID:	02-1325 mb
Date Analyzed:	06/01/22	Data File:	060108.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	23	11	65
Phenol-d6	14	11	65
Nitrobenzene-d5	86	50	150
2-Fluorobiphenyl	87	44	108
2,4,6-Tribromophenol	72	10	140
Terphenyl-d14	98	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Date of Report: 06/07/22
Date Received: 05/27/22
Project: Auburn VW BE-0107-C, F&BI 205474

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	140	132	63-142	6

Date of Report: 06/07/22
Date Received: 05/27/22
Project: Auburn VW BE-0107-C, F&BI 205474

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 205474-01 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	12.4	96	96	75-125	0
Cadmium	ug/L (ppb)	5	<10	100	95	75-125	5
Chromium	ug/L (ppb)	20	<10	91	83	75-125	9
Lead	ug/L (ppb)	10	<10	95	93	75-125	2
Mercury	ug/L (ppb)	5	<10	92	100	75-125	8

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	91	80-120
Cadmium	ug/L (ppb)	5	96	80-120
Chromium	ug/L (ppb)	20	98	80-120
Lead	ug/L (ppb)	10	98	80-120
Mercury	ug/L (ppb)	5	102	80-120

Date of Report: 06/07/22
Date Received: 05/27/22
Project: Auburn VW BE-0107-C, F&BI 205474

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 206027-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	114	50-150
Chloromethane	ug/L (ppb)	10	<10	110	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	108	50-150
Bromomethane	ug/L (ppb)	10	<5	105	50-150
Chloroethane	ug/L (ppb)	10	<1	106	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	104	50-150
Acetone	ug/L (ppb)	50	<50	80	50-150
1,1-Dichloroethene	ug/L (ppb)	10	<1	97	50-150
Hexane	ug/L (ppb)	10	<5	106	50-150
Methylene chloride	ug/L (ppb)	10	<5	93	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	103	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	99	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	98	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	117	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	97	50-150
Chloroform	ug/L (ppb)	10	<1	96	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	96	50-150
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	98	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	101	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	93	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	105	50-150
Benzene	ug/L (ppb)	10	<0.35	99	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	99	50-150
1,2-Dichloropropane	ug/L (ppb)	10	<1	102	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	105	50-150
Dibromomethane	ug/L (ppb)	10	<1	100	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	104	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	98	50-150
Toluene	ug/L (ppb)	10	<1	95	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	94	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	99	50-150
2-Hexanone	ug/L (ppb)	50	<10	109	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	92	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	101	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	94	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	95	50-150
Chlorobenzene	ug/L (ppb)	10	<1	93	50-150
Ethylbenzene	ug/L (ppb)	10	<1	94	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	91	50-150
m,p-Xylene	ug/L (ppb)	20	<2	93	50-150
o-Xylene	ug/L (ppb)	10	<1	92	50-150
Styrene	ug/L (ppb)	10	<1	93	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	92	50-150
Bromoform	ug/L (ppb)	10	<5	89	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	99	50-150
Bromobenzene	ug/L (ppb)	10	<1	98	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	96	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	99	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	98	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	96	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	98	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	95	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	93	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	95	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	97	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	100	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	98	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	96	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	101	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	94	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	95	50-150
Naphthalene	ug/L (ppb)	10	<1	94	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	97	50-150

Date of Report: 06/07/22
Date Received: 05/27/22
Project: Auburn VW BE-0107-C, F&BI 205474

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	93	102	46-206	9
Chloromethane	ug/L (ppb)	10	93	101	70-142	8
Vinyl chloride	ug/L (ppb)	10	95	105	70-130	10
Bromomethane	ug/L (ppb)	10	104	110	56-197	6
Chloroethane	ug/L (ppb)	10	97	107	70-130	10
Trichlorofluoromethane	ug/L (ppb)	10	96	108	70-130	12
Acetone	ug/L (ppb)	50	90	102	10-140	12
1,1-Dichloroethene	ug/L (ppb)	10	90	96	70-130	6
Hexane	ug/L (ppb)	10	101	104	54-136	3
Methylene chloride	ug/L (ppb)	10	71	79	43-134	11
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	95	101	70-130	6
trans-1,2-Dichloroethene	ug/L (ppb)	10	92	98	70-130	6
1,1-Dichloroethane	ug/L (ppb)	10	91	96	70-130	5
2,2-Dichloropropane	ug/L (ppb)	10	113	117	70-130	3
cis-1,2-Dichloroethene	ug/L (ppb)	10	89	102	70-130	14
Chloroform	ug/L (ppb)	10	93	99	70-130	6
2-Butanone (MEK)	ug/L (ppb)	50	95	102	17-154	7
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	92	98	70-130	6
1,1,1-Trichloroethane	ug/L (ppb)	10	96	101	70-130	5
1,1-Dichloropropene	ug/L (ppb)	10	89	97	70-130	9
Carbon tetrachloride	ug/L (ppb)	10	92	102	70-130	10
Benzene	ug/L (ppb)	10	92	97	70-130	5
Trichloroethene	ug/L (ppb)	10	92	97	70-130	5
1,2-Dichloropropane	ug/L (ppb)	10	100	102	70-130	2
Bromodichloromethane	ug/L (ppb)	10	96	103	70-130	7
Dibromomethane	ug/L (ppb)	10	91	104	70-130	13
4-Methyl-2-pentanone	ug/L (ppb)	50	96	101	68-130	5
cis-1,3-Dichloropropene	ug/L (ppb)	10	95	99	69-131	4
Toluene	ug/L (ppb)	10	96	97	70-130	1
trans-1,3-Dichloropropene	ug/L (ppb)	10	95	94	70-130	1
1,1,2-Trichloroethane	ug/L (ppb)	10	101	101	70-130	0
2-Hexanone	ug/L (ppb)	50	115	119	45-138	3
1,3-Dichloropropane	ug/L (ppb)	10	97	91	70-130	6
Tetrachloroethene	ug/L (ppb)	10	101	99	70-130	2
Dibromochloromethane	ug/L (ppb)	10	92	93	60-148	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	98	97	70-130	1
Chlorobenzene	ug/L (ppb)	10	94	93	70-130	1
Ethylbenzene	ug/L (ppb)	10	96	95	70-130	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	93	90	70-130	3
m,p-Xylene	ug/L (ppb)	20	95	95	70-130	0
o-Xylene	ug/L (ppb)	10	93	93	70-130	0
Styrene	ug/L (ppb)	10	93	93	70-130	0
Isopropylbenzene	ug/L (ppb)	10	92	95	70-130	3
Bromoform	ug/L (ppb)	10	91	83	69-138	9
n-Propylbenzene	ug/L (ppb)	10	95	98	70-130	3
Bromobenzene	ug/L (ppb)	10	91	94	70-130	3
1,3,5-Trimethylbenzene	ug/L (ppb)	10	91	90	70-130	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	96	97	70-130	1
1,2,3-Trichloropropane	ug/L (ppb)	10	97	94	70-130	3
2-Chlorotoluene	ug/L (ppb)	10	90	92	70-130	2
4-Chlorotoluene	ug/L (ppb)	10	94	93	70-130	1
tert-Butylbenzene	ug/L (ppb)	10	90	95	70-130	5
1,2,4-Trimethylbenzene	ug/L (ppb)	10	90	91	70-130	1
sec-Butylbenzene	ug/L (ppb)	10	89	93	70-130	4
p-Isopropyltoluene	ug/L (ppb)	10	91	95	70-130	4
1,3-Dichlorobenzene	ug/L (ppb)	10	95	98	70-130	3
1,4-Dichlorobenzene	ug/L (ppb)	10	98	94	70-130	4
1,2-Dichlorobenzene	ug/L (ppb)	10	94	95	70-130	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	101	100	70-130	1
1,2,4-Trichlorobenzene	ug/L (ppb)	10	88	94	70-130	7
Hexachlorobutadiene	ug/L (ppb)	10	86	89	70-130	3
Naphthalene	ug/L (ppb)	10	85	92	70-130	8
1,2,3-Trichlorobenzene	ug/L (ppb)	10	87	93	70-130	7

Date of Report: 06/07/22
Date Received: 05/27/22
Project: Auburn VW BE-0107-C, F&BI 205474

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	85	82	62-90	4
2-Methylnaphthalene	ug/L (ppb)	5	86	82	64-93	5
1-Methylnaphthalene	ug/L (ppb)	5	85	81	64-93	5
Acenaphthylene	ug/L (ppb)	5	94	92	70-130	2
Acenaphthene	ug/L (ppb)	5	91	89	70-130	2
Fluorene	ug/L (ppb)	5	88	86	70-130	2
Phenanthrene	ug/L (ppb)	5	91	88	70-130	3
Anthracene	ug/L (ppb)	5	96	93	70-130	3
Fluoranthene	ug/L (ppb)	5	103	96	70-130	7
Pyrene	ug/L (ppb)	5	99	96	70-130	3
Benz(a)anthracene	ug/L (ppb)	5	96	93	70-130	3
Chrysene	ug/L (ppb)	5	97	94	70-130	3
Benzo(a)pyrene	ug/L (ppb)	5	103	98	70-130	5
Benzo(b)fluoranthene	ug/L (ppb)	5	97	93	70-130	4
Benzo(k)fluoranthene	ug/L (ppb)	5	106	98	70-130	8
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	82	86	70-130	5
Dibenz(a,h)anthracene	ug/L (ppb)	5	88	89	70-130	1
Benzo(g,h,i)perylene	ug/L (ppb)	5	84	85	70-130	1

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

205474

SAMPLE CHAIN OF CUSTODY

05-27-22

E03/A13/VW5

Page # 1 of 1

Report To DAN HATCH

Company BLUESTONE

Address

City, State, ZIP

Phone Email danh@bluestonenw.com

SAMPLERS (signature)

PROJECT NAME Auburn VW

PO # BE-0107-C

REMARKS

INVOICE TO BLUESTONE

Project specific RLs? - Yes / No

TURNAROUND TIME

☒ Standard turnaround

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Archive samples

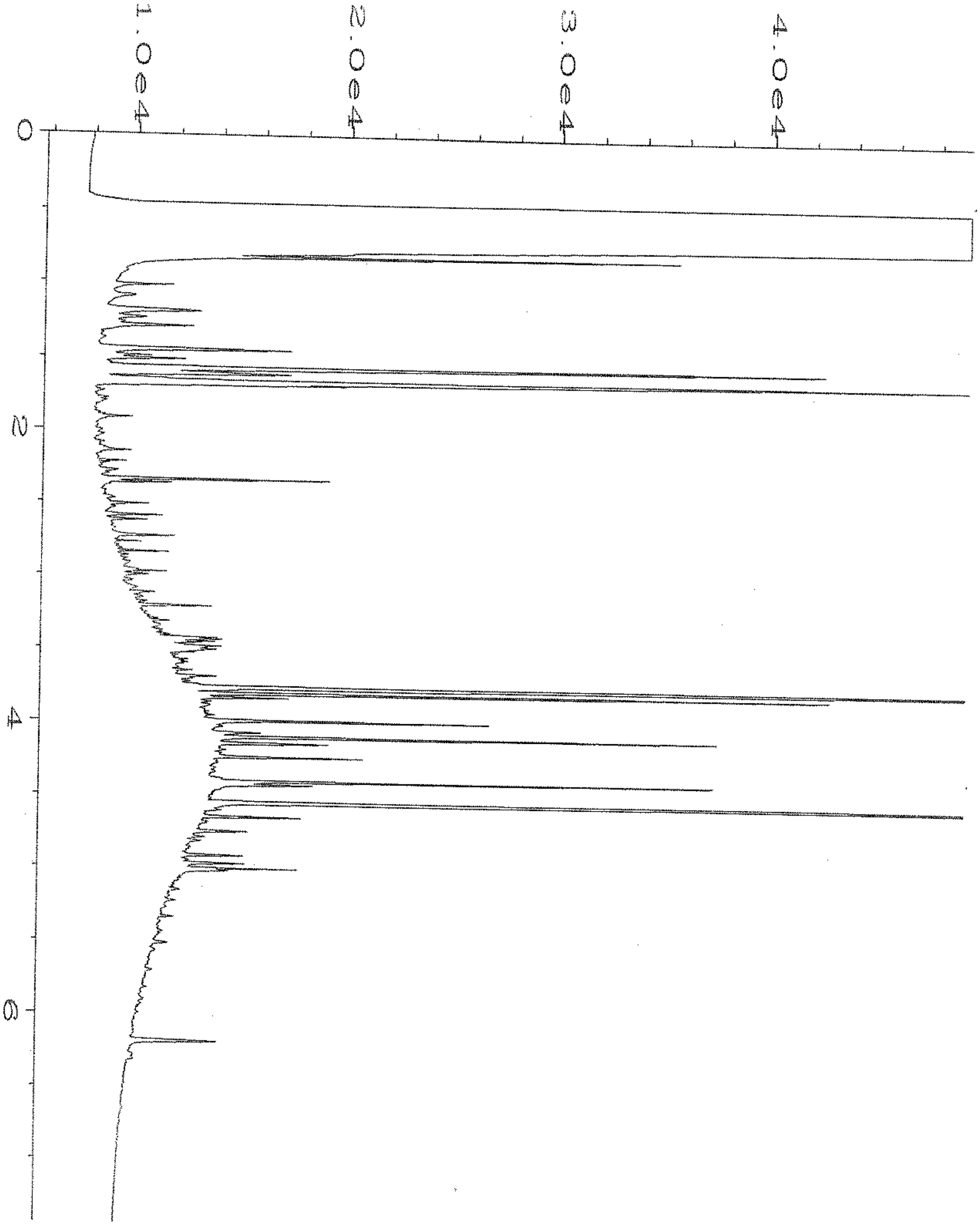
☐ Other

Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MTCA 5 METALS				Notes
MW-1-W	01 A-I	5/26/22	1130	W	9	X				X	X		X				+
MW-2-W	02		915			X				X	X		X				
MW-3-W	03		1100			X				X	X		X				
MW-4-W	04		1015			X				X	X		X				
MW-5-W	05		950			X				X	X		X				
MW-DUP	06		2400			X				X	X		X				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	HALEY CARTER	BLUESTONE	5/27/22	900
Received by: D.	Liz Webber - Bruya	F&B	5/27/22	257
Relinquished by:				
Received by:		Samples received at 4 °C		



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Operator          : TL                          Page Number      : 1
Instrument        : GC1                         Vial Number      : 16
Sample Name       : 205474-01                   Injection Number : 1
Run Time Bar Code:                              Sequence Line    : 5
Acquired on       : 31 May 22   01:30 PM        Instrument Method: DX.MTH
Report Created on: 01 Jun 22   10:08 AM         Analysis Method  : DEFAULT.MTH
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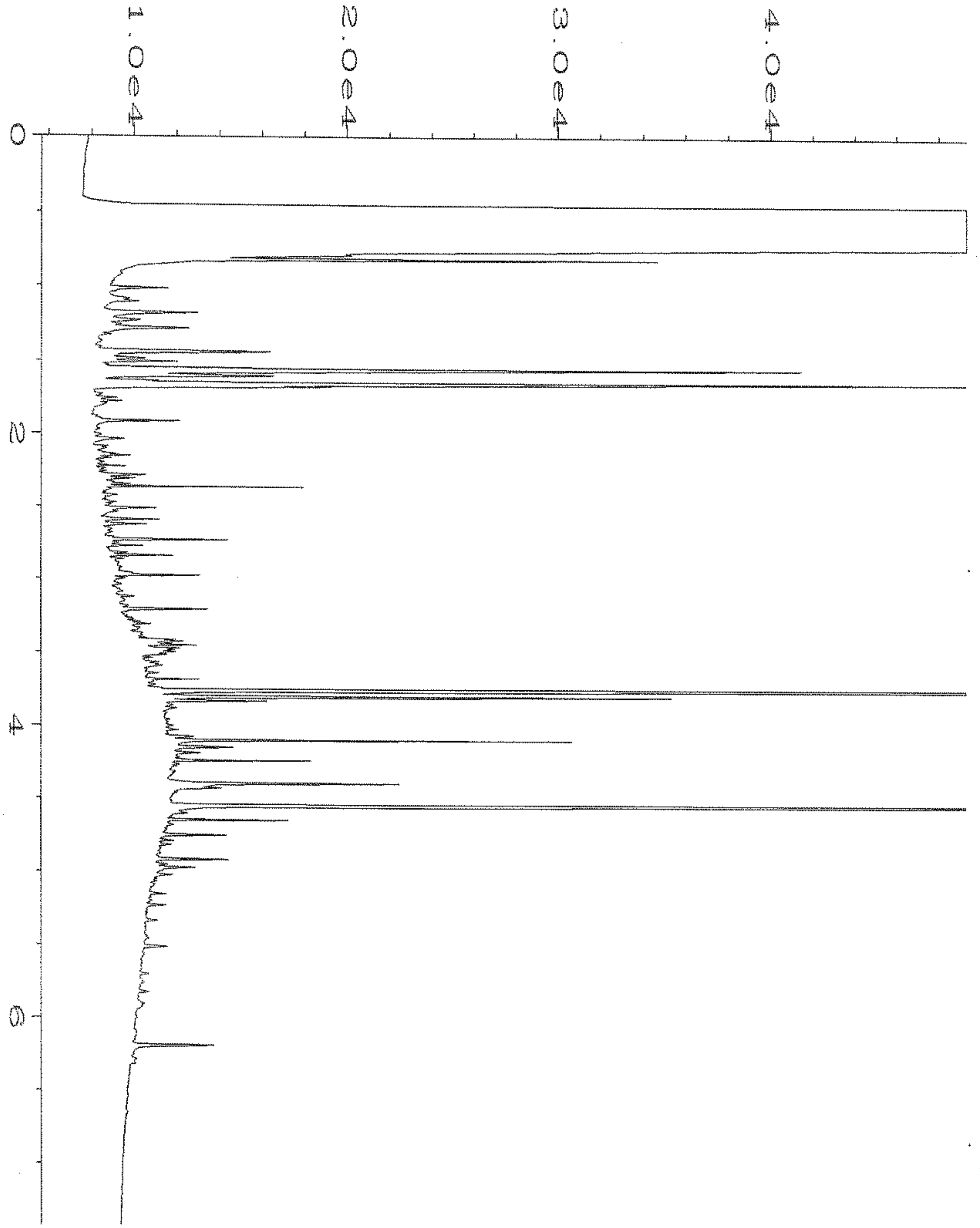

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Operator          : TL                              Page Number       : 1
Instrument        : GC1                             Vial Number       : 17
Sample Name       : 205474-02                       Injection Number  : 1
Run Time Bar Code:                                  Sequence Line     : 5
Acquired on       : 31 May 22   01:45 PM            Instrument Method: DX.MTH
Report Created on: 01 Jun 22   10:08 AM            Analysis Method   : DEFAULT.MTH
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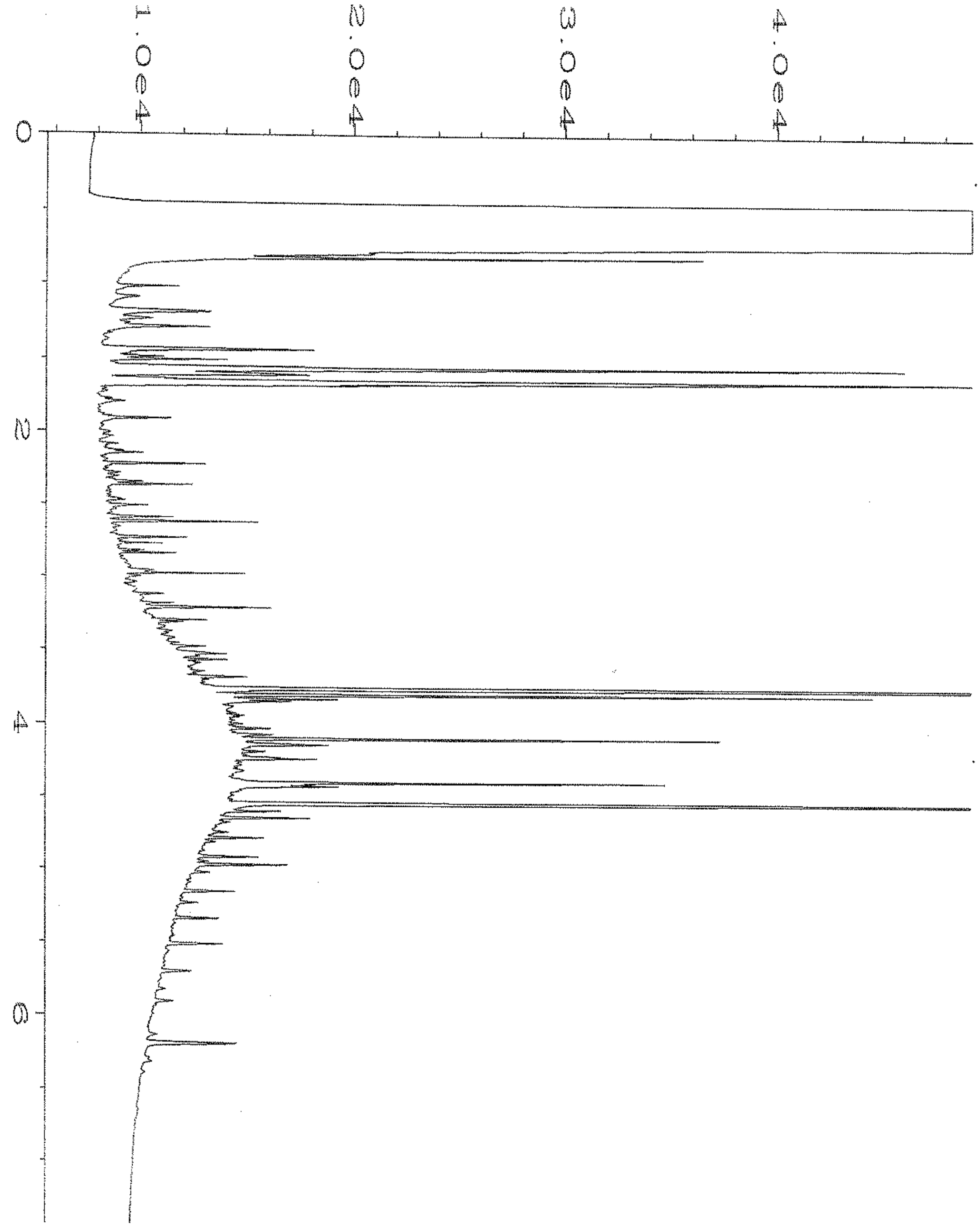

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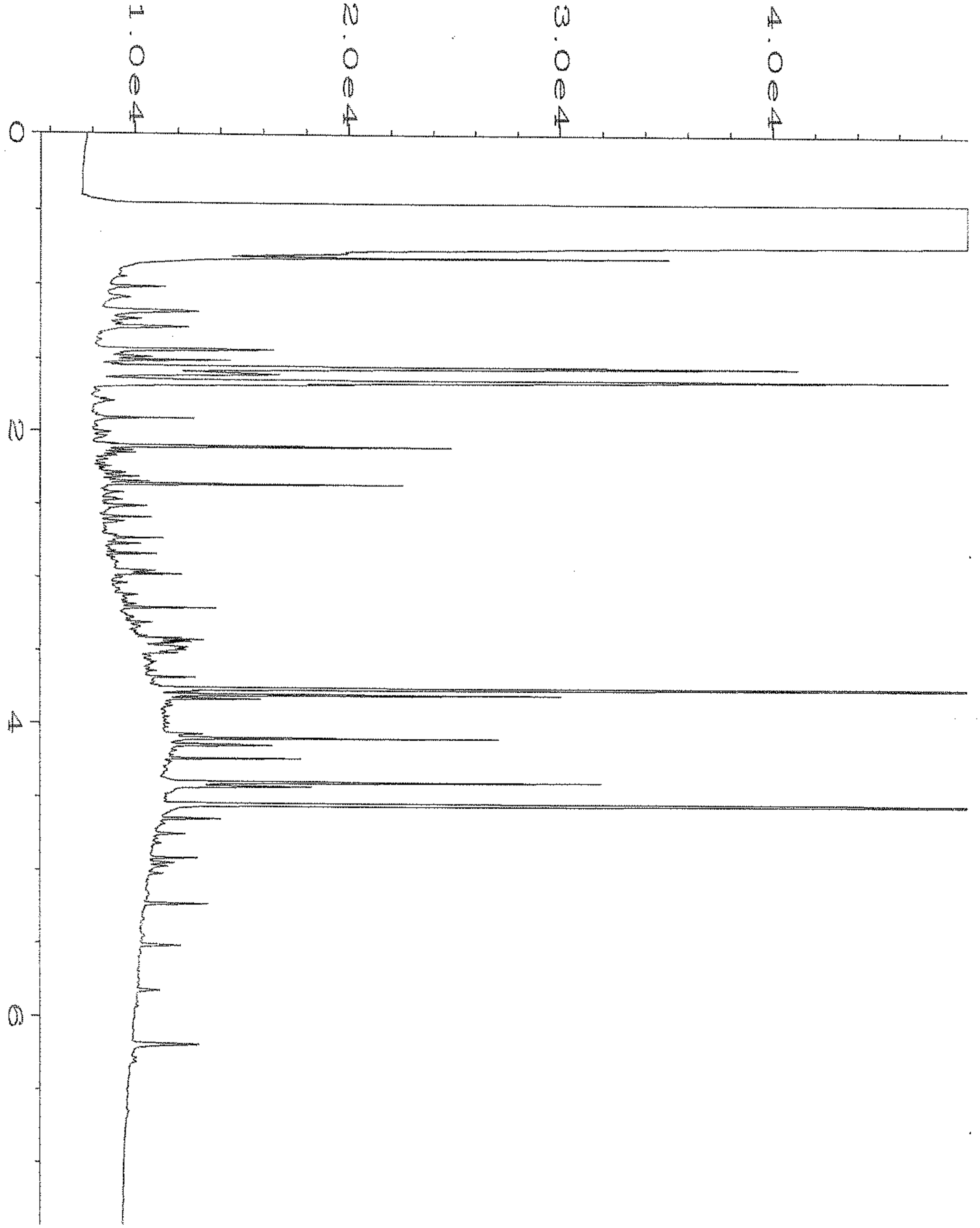
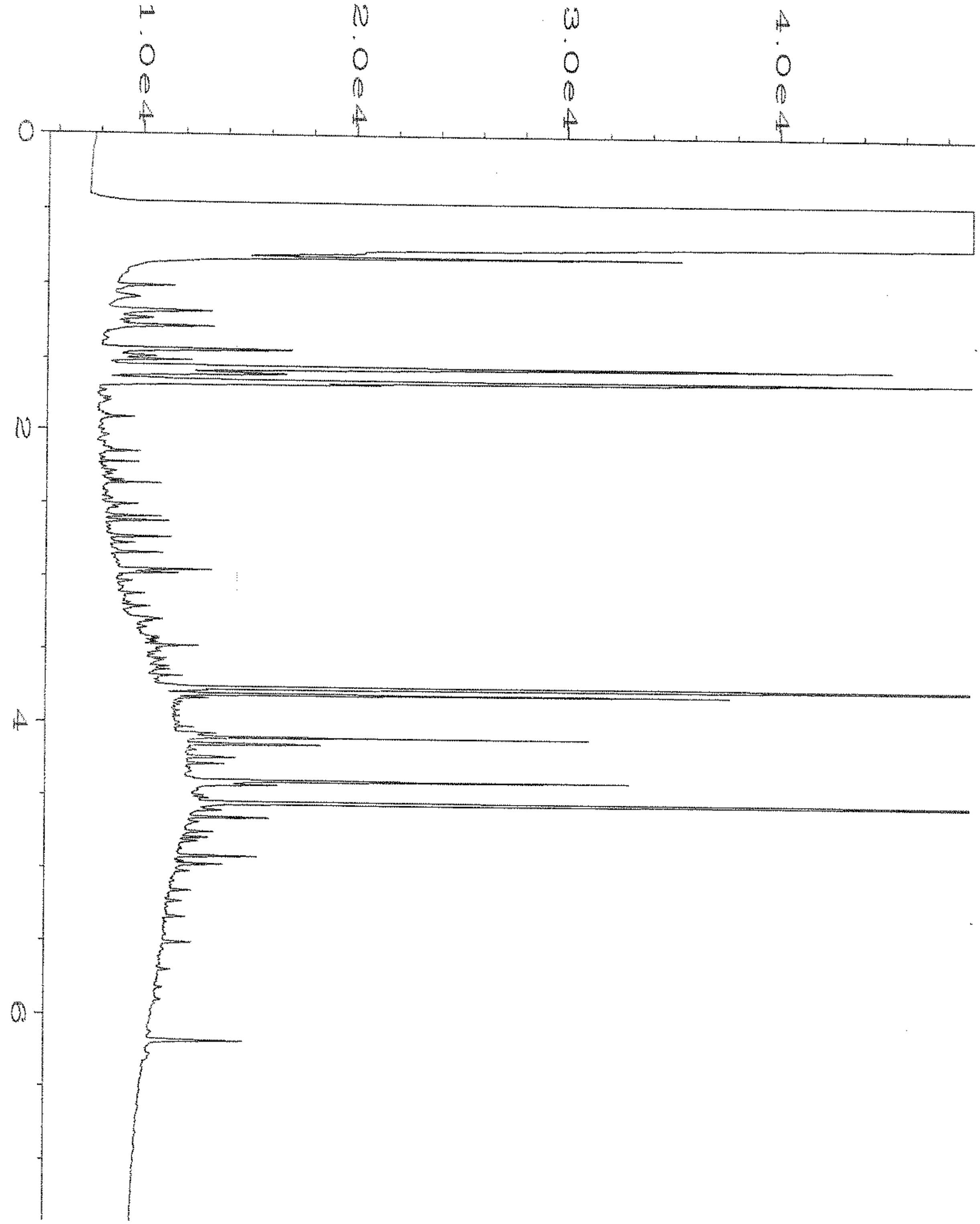
Operator : TL
Instrument : GC1
Sample Name : 205474-03
Run Time Bar Code:
Acquired on : 31 May 22 01:59 PM
Report Created on: 01 Jun 22 10:09 AM

Page Number : 1
Vial Number : 18
Injection Number : 1
Sequence Line : 5
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



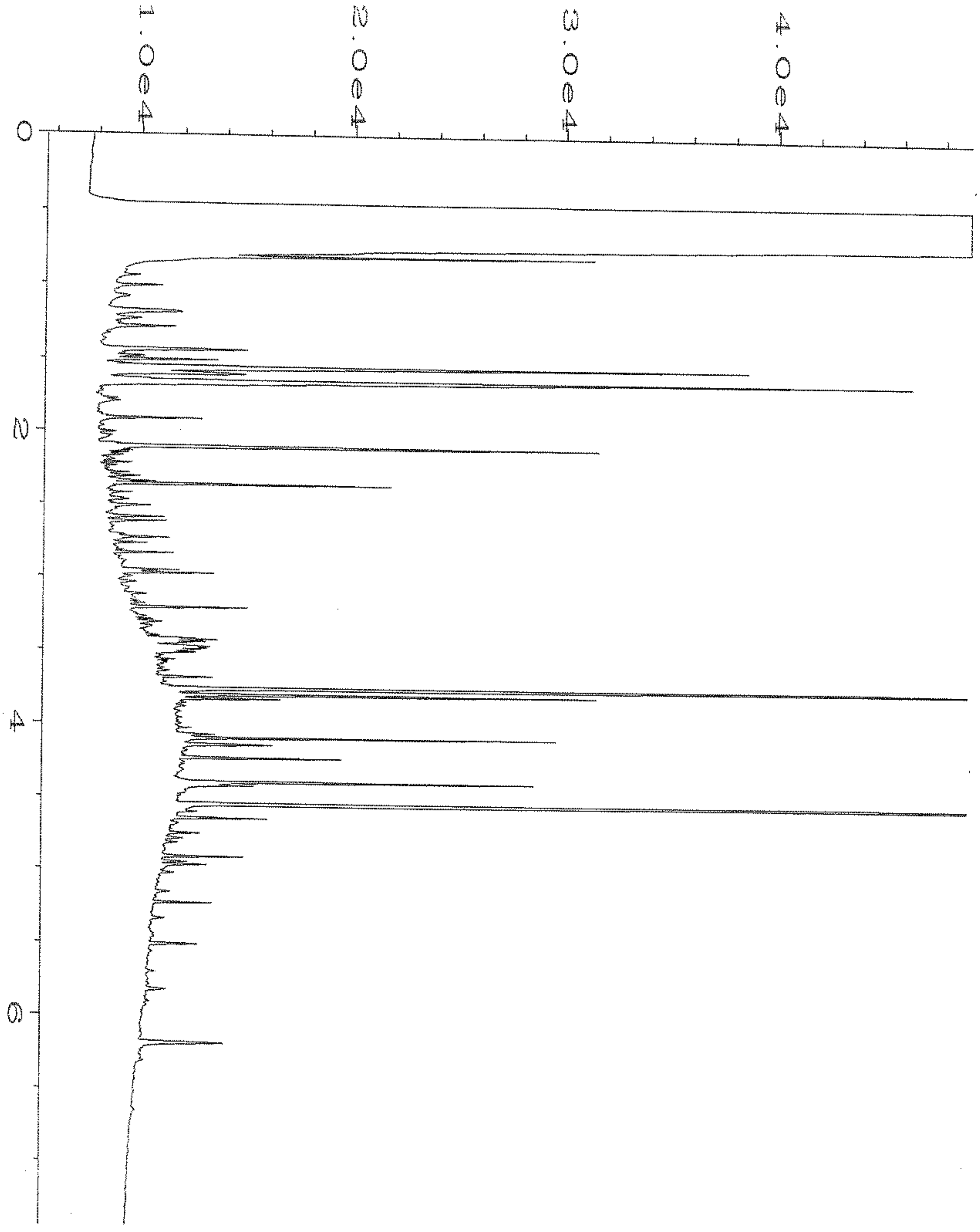
Data File Name : C:\HPCHEM\1\DATA\05-31-22\019F0501.D
Operator : TL
Instrument : GC1
Sample Name : 205474-04
Run Time Bar Code:
Acquired on : 31 May 22 02:14 PM
Report Created on: 01 Jun 22 10:09 AM

Page Number : 1
Vial Number : 19
Injection Number : 1
Sequence Line : 5
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



Data File Name : C:\HPCHEM\1\DATA\05-31-22\020F0501.D
Operator : TL
Instrument : GC1
Sample Name : 205474-05
Run Time Bar Code:
Acquired on : 31 May 22 02:28 PM
Report Created on: 01 Jun 22 10:09 AM

Page Number : 1
Vial Number : 20
Injection Number : 1
Sequence Line : 5
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



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Operator : TL
Instrument : GC1
Sample Name : 205474-06
Run Time Bar Code:
Acquired on : 31 May 22 02:43 PM
Report Created on: 01 Jun 22 10:09 AM

Page Number : 1
Vial Number : 21
Injection Number : 1
Sequence Line : 5
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

June 15, 2022

Dan Hatch, Project Manager
Bluestone Environmental NW
20204 SE 284th St
Kent, WA 98042

Dear Mr Hatch:

Included are the additional results from the testing of material submitted on May 27, 2022 from the Auburn BE-0107-C, F&BI 205474 project. There are 4 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
BST0615R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on May 27, 2022 by Friedman & Bruya, Inc. from the Bluestone Environmental NW Auburn BE-0107-C, F&BI 205474 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Bluestone Environmental NW
205474 -01	MW-1-W
205474 -02	MW-2-W
205474 -03	MW-3-W
205474 -04	MW-4-W
205474 -05	MW-5-W
205474 -06	MW-Dup

All quality control requirements were acceptable.

Date of Report: 06/15/22
Date Received: 05/27/22
Project: Auburn BE-0107-C, F&BI 205474
Date Extracted: 06/10/22
Date Analyzed: 06/10/22

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
MW-1-W 205474-01	<100	91
MW-2-W 205474-02	<100	75
MW-3-W 205474-03	<100	76
MW-4-W 205474-04	<100	76
MW-5-W 205474-05	<100	81
MW-Dup 205474-06	<100	82
Method Blank 02-1150 MB	<100	83

Date of Report: 06/15/22
Date Received: 05/27/22
Project: Auburn BE-0107-C, F&BI 205474

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 206151-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	111	69-134

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

205474

SAMPLE CHAIN OF CUSTODY

05-27-22

E03/A13/VW5

Page # 1 of 1

Report To DAN HATCH
Company BLUESTONE
Address
City, State, ZIP
Phone Email danh@bluestonenw.com

SAMPLERS (signature)

PROJECT NAME Auburn VW

PO # BE-0107-C

REMARKS

INVOICE TO BLUESTONE

Project specific RLs? - Yes / No

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MTCA 5 Metals				Notes
MW-1-W	01 A-I	5/26/22	1130	W	9	X				X	X		X				+
MW-2-W	02		915			X				X	X		X				
MW-3-W	03		1100			X				X	X		X				
MW-4-W	04		1015			X				X	X		X				
MW-5-W	05		950			X				X	X		X				
MW-DUP	06 ↓	↓	2400	↓	↓	X				X	X		X				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	HALEY CARTER	BLUESTONE	5/27/22	900
Received by:	Liz Webber	F&B	5/27/22	1257
Relinquished by:				
Received by:		Samples received at 4 °C		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

June 2, 2022

Dan Hatch, Project Manager
Bluestone Environmental NW
20204 SE 284th St
Kent, WA 98042

Dear Mr Hatch:

Included are the results from the testing of material submitted on May 23, 2022 from the Auburn VW BE-0107_C, F&BI 205405 project. There are 25 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
BST0602R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on May 23, 2022 by Friedman & Bruya, Inc. from the Bluestone Environmental NW Auburn VW BE-0107_C, F&BI 205405 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Bluestone Environmental NW
205405 -01	MW-1-5
205405 -02	MW-1-7
205405 -03	MW-1-12
205405 -04	MW-1-15
205405 -05	MW-2-5
205405 -06	MW-2-8
205405 -07	MW-2-12
205405 -08	MW-2-15
205405 -09	MW-3-3
205405 -10	MW-3-5
205405 -11	MW-3-10
205405 -12	MW-3-15
205405 -13	MW-4-3
205405 -14	MW-4-5
205405 -15	MW-4-10
205405 -16	MW-4-15
205405 -17	MW-5-3
205405 -18	MW-5-5
205405 -19	MW-5-10
205405 -20	MW-5-15

The 8260D calibration standard failed the acceptance criteria for several analytes in the method blank. The data were flagged accordingly.

The 8260D matrix spike and matrix spike duplicate failed the relative percent difference for several compounds. The analytes were not detected therefore the data were acceptable.

All other quality control requirements were acceptable.

Date of Report: 06/02/22
Date Received: 05/23/22
Project: Auburn VW BE-0107_C, F&BI 205405
Date Extracted: 05/25/22
Date Analyzed: 05/25/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
MW-1-7 205405-02	<50	<250	110
MW-2-8 205405-06	<50	<250	109
MW-3-3 205405-09	<50	<250	108
MW-3-10 205405-11	<50	<250	109
MW-4-3 205405-13	<50	2,900	108
MW-4-10 205405-15	<50	<250	110
MW-5-3 205405-17	<50	<250	110
MW-5-10 205405-19	<50	<250	109
Method Blank 02-1271 MB2	<50	<250	112

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-1-7	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/26/22	Lab ID:	205405-02
Date Analyzed:	05/26/22	Data File:	205405-02.043
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	WE

Analyte:	Concentration mg/kg (ppm)
Arsenic	13.4
Cadmium	<1
Chromium	12.0
Lead	10.3
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-2-8	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/26/22	Lab ID:	205405-06
Date Analyzed:	05/26/22	Data File:	205405-06.044
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	WE

Analyte:	Concentration mg/kg (ppm)
Arsenic	11.0
Cadmium	<1
Lead	4.60
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-2-8	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/26/22	Lab ID:	205405-06 x5
Date Analyzed:	05/26/22	Data File:	205405-06 x5.085
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	WE

Analyte:	Concentration mg/kg (ppm)
Chromium	18.8

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-3-3	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/26/22	Lab ID:	205405-09
Date Analyzed:	05/26/22	Data File:	205405-09.045
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	WE

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.96
Cadmium	<1
Chromium	9.05
Lead	6.38
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-4-3	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/26/22	Lab ID:	205405-13
Date Analyzed:	05/26/22	Data File:	205405-13.048
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	WE

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.33
Cadmium	<1
Chromium	7.46
Lead	2.88
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-5-3	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/26/22	Lab ID:	205405-17
Date Analyzed:	05/26/22	Data File:	205405-17.049
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	WE

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.56
Cadmium	<1
Chromium	10.4
Lead	5.86
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	NA	Project:	Auburn VW BE-0107_C
Date Extracted:	05/26/22	Lab ID:	I2-379 mb2
Date Analyzed:	05/26/22	Data File:	I2-379 mb2.038
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	WE

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-3-3	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/25/22	Lab ID:	205405-09
Date Analyzed:	05/31/22	Data File:	053117.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	90	109
Toluene-d8	99	89	112
4-Bromofluorobenzene	98	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-4-3	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/25/22	Lab ID:	205405-13
Date Analyzed:	05/31/22	Data File:	053118.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	90	109
Toluene-d8	98	89	112
4-Bromofluorobenzene	98	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-5-3	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/25/22	Lab ID:	205405-17
Date Analyzed:	05/31/22	Data File:	053119.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	90	109
Toluene-d8	100	89	112
4-Bromofluorobenzene	101	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	Not Applicable	Project:	Auburn VW BE-0107_C
Date Extracted:	05/25/22	Lab ID:	02-1229 mb
Date Analyzed:	05/26/22	Data File:	052607.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	90	109
Toluene-d8	100	89	112
4-Bromofluorobenzene	93	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 ca	1,3-Dichloropropane	<0.05
Chloromethane	<0.5 ca	Tetrachloroethene	<0.025
Vinyl chloride	<0.05 ca	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5 ca	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5 ca	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05 ca	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-1-7	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/27/22	Lab ID:	205405-02 1/5
Date Analyzed:	05/31/22	Data File:	053112.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	70	24	111
Phenol-d6	81	37	116
Nitrobenzene-d5	74	38	117
2-Fluorobiphenyl	76	45	117
2,4,6-Tribromophenol	91	11	158
Terphenyl-d14	97	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-2-8	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/27/22	Lab ID:	205405-06 1/5
Date Analyzed:	05/31/22	Data File:	053113.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	74	24	111
Phenol-d6	85	37	116
Nitrobenzene-d5	79	38	117
2-Fluorobiphenyl	81	45	117
2,4,6-Tribromophenol	94	11	158
Terphenyl-d14	96	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-3-3	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/27/22	Lab ID:	205405-09 1/5
Date Analyzed:	05/31/22	Data File:	053114.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	67	24	111
Phenol-d6	80	37	116
Nitrobenzene-d5	76	38	117
2-Fluorobiphenyl	81	45	117
2,4,6-Tribromophenol	99	11	158
Terphenyl-d14	102	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-4-3	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/27/22	Lab ID:	205405-13 1/100
Date Analyzed:	05/31/22	Data File:	053120.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	63 d	24	111
Phenol-d6	69 d	37	116
Nitrobenzene-d5	70 d	38	117
2-Fluorobiphenyl	82 d	45	117
2,4,6-Tribromophenol	67 d	11	158
Terphenyl-d14	86 d	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.2
Acenaphthene	<0.2
Fluorene	<0.2
Phenanthrene	<0.2
Anthracene	<0.2
Fluoranthene	<0.2
Pyrene	<0.2
Benz(a)anthracene	<0.2
Chrysene	0.38
Benzo(a)pyrene	<0.2
Benzo(b)fluoranthene	<0.2
Benzo(k)fluoranthene	<0.2
Indeno(1,2,3-cd)pyrene	<0.2
Dibenz(a,h)anthracene	<0.2
Benzo(g,h,i)perylene	<0.2

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-5-3	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/27/22	Lab ID:	205405-17 1/5
Date Analyzed:	05/31/22	Data File:	053115.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	68	24	111
Phenol-d6	81	37	116
Nitrobenzene-d5	77	38	117
2-Fluorobiphenyl	86	45	117
2,4,6-Tribromophenol	108	11	158
Terphenyl-d14	115	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.014
2-Methylnaphthalene	0.038
1-Methylnaphthalene	0.028
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	Not Applicable	Project:	Auburn VW BE-0107_C
Date Extracted:	05/27/22	Lab ID:	02-1289 mb 1/5
Date Analyzed:	05/27/22	Data File:	052718.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	96	24	111
Phenol-d6	102	37	116
Nitrobenzene-d5	96	38	117
2-Fluorobiphenyl	99	45	117
2,4,6-Tribromophenol	105	11	158
Terphenyl-d14	108	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Date of Report: 06/02/22
Date Received: 05/23/22
Project: Auburn VW BE-0107_C, F&BI 205405

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 205412-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	100	92	73-135	8

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	94	74-139

Date of Report: 06/02/22
Date Received: 05/23/22
Project: Auburn VW BE-0107_C, F&BI 205405

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 205364-01 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	83	87	75-125	5
Cadmium	mg/kg (ppm)	10	<5	90	96	75-125	6
Chromium	mg/kg (ppm)	50	18.5	90	95	75-125	5
Lead	mg/kg (ppm)	50	<5	90	97	75-125	7
Mercury	mg/kg (ppm	5	<5	93	103	75-125	10

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	90	80-120
Cadmium	mg/kg (ppm)	10	96	80-120
Chromium	mg/kg (ppm)	50	96	80-120
Lead	mg/kg (ppm)	50	98	80-120
Mercury	mg/kg (ppm)	5	101	80-120

Date of Report: 06/02/22
Date Received: 05/23/22
Project: Auburn VW BE-0107_C, F&BI 205405

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 205359-07 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	1	<0.5	8 vo	14	10-142	55 vo
Chloromethane	mg/kg (ppm)	1	<0.5	28	37	10-126	28 vo
Vinyl chloride	mg/kg (ppm)	1	<0.05	30	38	10-138	24 vo
Bromomethane	mg/kg (ppm)	1	<0.5	52	61	10-163	16
Chloroethane	mg/kg (ppm)	1	<0.5	37	44	10-176	17
Trichlorofluoromethane	mg/kg (ppm)	1	<0.5	39	42	10-176	7
Acetone	mg/kg (ppm)	5	<5	55	62	10-163	12
1,1-Dichloroethene	mg/kg (ppm)	1	<0.05	56	61	10-160	9
Hexane	mg/kg (ppm)	1	<0.25	42	46	10-137	9
Methylene chloride	mg/kg (ppm)	1	<0.5	72	80	10-156	11
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	1	<0.05	69	77	21-145	11
trans-1,2-Dichloroethene	mg/kg (ppm)	1	<0.05	66	74	14-137	11
1,1-Dichloroethane	mg/kg (ppm)	1	<0.05	67	73	19-140	9
2,2-Dichloropropane	mg/kg (ppm)	1	<0.05	76	82	10-158	8
cis-1,2-Dichloroethene	mg/kg (ppm)	1	<0.05	72	81	25-135	12
Chloroform	mg/kg (ppm)	1	<0.05	71	77	21-145	8
2-Butanone (MEK)	mg/kg (ppm)	5	<1	67	72	19-147	7
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	<0.05	61	65	12-160	6
1,1,1-Trichloroethane	mg/kg (ppm)	1	<0.05	67	74	10-156	10
1,1-Dichloropropene	mg/kg (ppm)	1	<0.05	69	74	17-140	7
Carbon tetrachloride	mg/kg (ppm)	1	<0.05	70	75	9-164	7
Benzene	mg/kg (ppm)	1	<0.03	73	80	29-129	9
Trichloroethene	mg/kg (ppm)	1	<0.02	72	81	21-139	12
1,2-Dichloropropane	mg/kg (ppm)	1	<0.05	72	79	30-135	9
Bromodichloromethane	mg/kg (ppm)	1	<0.05	72	80	23-155	11
Dibromomethane	mg/kg (ppm)	1	<0.05	71	80	23-145	12
4-Methyl-2-pentanone	mg/kg (ppm)	5	<1	81	90	24-155	11
cis-1,3-Dichloropropene	mg/kg (ppm)	1	<0.05	79	87	28-144	10
Toluene	mg/kg (ppm)	1	<0.05	76	80	35-130	5
trans-1,3-Dichloropropene	mg/kg (ppm)	1	<0.05	75	84	26-149	11
1,1,2-Trichloroethane	mg/kg (ppm)	1	<0.05	74	83	10-205	11
2-Hexanone	mg/kg (ppm)	5	<0.5	74	81	15-166	9
1,3-Dichloropropane	mg/kg (ppm)	1	<0.05	75	81	31-137	8
Tetrachloroethene	mg/kg (ppm)	1	<0.025	76	82	20-133	8
Dibromochloromethane	mg/kg (ppm)	1	<0.05	77	83	28-150	7
1,2-Dibromoethane (EDB)	mg/kg (ppm)	1	<0.05	75	83	28-142	10
Chlorobenzene	mg/kg (ppm)	1	<0.05	76	82	32-129	8
Ethylbenzene	mg/kg (ppm)	1	<0.05	75	82	32-137	9
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	1	<0.05	78	86	31-143	10
m,p-Xylene	mg/kg (ppm)	2	<0.1	76	84	34-136	10
o-Xylene	mg/kg (ppm)	1	<0.05	80	87	33-134	8
Styrene	mg/kg (ppm)	1	<0.05	76	84	35-137	10
Isopropylbenzene	mg/kg (ppm)	1	<0.05	76	81	31-142	6
Bromoform	mg/kg (ppm)	1	<0.05	77	81	21-156	5
n-Propylbenzene	mg/kg (ppm)	1	<0.05	72	79	23-146	9
Bromobenzene	mg/kg (ppm)	1	<0.05	73	80	34-130	9
1,3,5-Trimethylbenzene	mg/kg (ppm)	1	<0.05	73	80	18-149	9
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	1	<0.05	75	83	28-140	10
1,2,3-Trichloropropane	mg/kg (ppm)	1	<0.05	73	79	25-144	8
2-Chlorotoluene	mg/kg (ppm)	1	<0.05	72	79	31-134	9
4-Chlorotoluene	mg/kg (ppm)	1	<0.05	71	78	31-136	9
tert-Butylbenzene	mg/kg (ppm)	1	<0.05	75	83	30-137	10
1,2,4-Trimethylbenzene	mg/kg (ppm)	1	<0.05	74	82	10-182	10
sec-Butylbenzene	mg/kg (ppm)	1	<0.05	74	81	23-145	9
p-Isopropyltoluene	mg/kg (ppm)	1	<0.05	74	81	21-149	9
1,3-Dichlorobenzene	mg/kg (ppm)	1	<0.05	74	82	30-131	10
1,4-Dichlorobenzene	mg/kg (ppm)	1	<0.05	73	82	29-129	12
1,2-Dichlorobenzene	mg/kg (ppm)	1	<0.05	75	84	31-132	11
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	1	<0.5	70	83	11-161	17
1,2,4-Trichlorobenzene	mg/kg (ppm)	1	<0.25	76	86	22-142	12
Hexachlorobutadiene	mg/kg (ppm)	1	<0.25	74	81	10-142	9
Naphthalene	mg/kg (ppm)	1	<0.05	77	87	14-157	12
1,2,3-Trichlorobenzene	mg/kg (ppm)	1	<0.25	75	84	20-144	11

Date of Report: 06/02/22
Date Received: 05/23/22
Project: Auburn VW BE-0107_C, F&BI 205405

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	1	34	10-146
Chloromethane	mg/kg (ppm)	1	51	27-133
Vinyl chloride	mg/kg (ppm)	1	57	22-139
Bromomethane	mg/kg (ppm)	1	64	38-114
Chloroethane	mg/kg (ppm)	1	56	9-163
Trichlorofluoromethane	mg/kg (ppm)	1	60	10-196
Acetone	mg/kg (ppm)	5	69	52-141
1,1-Dichloroethene	mg/kg (ppm)	1	76	47-128
Hexane	mg/kg (ppm)	1	74	43-142
Methylene chloride	mg/kg (ppm)	1	93	10-184
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	1	84	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	1	86	67-129
1,1-Dichloroethane	mg/kg (ppm)	1	85	68-115
2,2-Dichloropropane	mg/kg (ppm)	1	94	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	1	90	72-127
Chloroform	mg/kg (ppm)	1	86	66-120
2-Butanone (MEK)	mg/kg (ppm)	5	81	30-197
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	74	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	1	85	62-131
1,1-Dichloropropene	mg/kg (ppm)	1	86	69-128
Carbon tetrachloride	mg/kg (ppm)	1	87	60-139
Benzene	mg/kg (ppm)	1	90	71-118
Trichloroethene	mg/kg (ppm)	1	89	63-121
1,2-Dichloropropane	mg/kg (ppm)	1	89	72-127
Bromodichloromethane	mg/kg (ppm)	1	88	57-126
Dibromomethane	mg/kg (ppm)	1	87	62-123
4-Methyl-2-pentanone	mg/kg (ppm)	5	96	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	1	95	67-122
Toluene	mg/kg (ppm)	1	89	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	1	90	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	1	90	64-115
2-Hexanone	mg/kg (ppm)	5	89	33-152
1,3-Dichloropropane	mg/kg (ppm)	1	89	72-130
Tetrachloroethene	mg/kg (ppm)	1	92	72-114
Dibromochloromethane	mg/kg (ppm)	1	90	55-121
1,2-Dibromoethane (EDB)	mg/kg (ppm)	1	89	74-132
Chlorobenzene	mg/kg (ppm)	1	92	76-111
Ethylbenzene	mg/kg (ppm)	1	91	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	1	93	64-121
m,p-Xylene	mg/kg (ppm)	2	91	78-122
o-Xylene	mg/kg (ppm)	1	93	77-124
Styrene	mg/kg (ppm)	1	92	74-126
Isopropylbenzene	mg/kg (ppm)	1	91	76-127
Bromoform	mg/kg (ppm)	1	91	56-132
n-Propylbenzene	mg/kg (ppm)	1	88	74-124
Bromobenzene	mg/kg (ppm)	1	88	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	1	87	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	1	91	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	1	86	61-137
2-Chlorotoluene	mg/kg (ppm)	1	87	74-121
4-Chlorotoluene	mg/kg (ppm)	1	85	75-122
tert-Butylbenzene	mg/kg (ppm)	1	89	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	1	88	76-125
sec-Butylbenzene	mg/kg (ppm)	1	89	71-130
p-Isopropyltoluene	mg/kg (ppm)	1	89	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	1	90	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	1	89	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	1	89	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	1	84	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	1	93	64-135
Hexachlorobutadiene	mg/kg (ppm)	1	87	50-153
Naphthalene	mg/kg (ppm)	1	90	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	1	90	63-138

Date of Report: 06/02/22
Date Received: 05/23/22
Project: Auburn VW BE-0107_C, F&BI 205405

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 205441-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	<0.01	75	76	34-118	1
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	77	81	29-130	5
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	75	79	37-119	5
Acenaphthylene	mg/kg (ppm)	0.83	<0.01	80	83	45-128	4
Acenaphthene	mg/kg (ppm)	0.83	<0.01	76	79	36-125	4
Fluorene	mg/kg (ppm)	0.83	<0.01	80	85	48-121	6
Phenanthrene	mg/kg (ppm)	0.83	<0.01	78	82	50-150	5
Anthracene	mg/kg (ppm)	0.83	<0.01	81	86	50-150	6
Fluoranthene	mg/kg (ppm)	0.83	<0.01	82	87	50-150	6
Pyrene	mg/kg (ppm)	0.83	<0.01	77	80	50-150	4
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	80	82	50-150	2
Chrysene	mg/kg (ppm)	0.83	<0.01	79	83	50-150	5
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	78	84	50-150	7
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	78	82	50-150	5
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	75	83	50-150	10
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	93	92	41-134	1
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	95	98	44-130	3
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	<0.01	92	95	33-131	3

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	79	58-108
2-Methylnaphthalene	mg/kg (ppm)	0.83	84	67-108
1-Methylnaphthalene	mg/kg (ppm)	0.83	83	66-107
Acenaphthylene	mg/kg (ppm)	0.83	85	70-130
Acenaphthene	mg/kg (ppm)	0.83	82	66-112
Fluorene	mg/kg (ppm)	0.83	89	67-117
Phenanthrene	mg/kg (ppm)	0.83	84	70-130
Anthracene	mg/kg (ppm)	0.83	87	70-130
Fluoranthene	mg/kg (ppm)	0.83	87	70-130
Pyrene	mg/kg (ppm)	0.83	88	70-130
Benz(a)anthracene	mg/kg (ppm)	0.83	82	70-130
Chrysene	mg/kg (ppm)	0.83	83	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	85	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	85	69-125
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	83	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	94	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	97	67-128
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	94	64-127

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

205405

SAMPLE CHAIN OF CUSTODY

05/23/22 [redacted]

US-B4 / BI42
Page # 1 of

[redacted] Report To DAN HATCH

Company BLUESTONE NW

Address

City, State, ZIP

Phone Email danh@bluestonenw.com

SAMPLERS (signature)

PROJECT NAME Auburn VW

PO # BE-0107-BC

REMARKS

Project specific RLs? - Yes / No

INVOICE TO BLUESTONE

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MTCA 5				Notes
MW-1-5	01 A-E	5/23/22	905	S	5												
MW-1-7	02		910			X					X		X				
MW-1-12	03		915														
MW-1-15	04		920														
MW-2-5	05		1050														
MW-2-8	06		1055			X					X		X				
MW-2-12	07		1100														
MW-2-15	08		1105														
MW-3-3	09		1345			X				X	X		X				
MW-3-5	10		1350														

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	HALEY CARTER	BLUESTONE	5/24/22	750
Received by:	Liz Webber-Bruya	F&B	5/24/22	1110
Relinquished by:		Samples received at 3 °C		
Received by:				

205405

SAMPLE CHAIN OF CUSTODY

05/23/22 VS-B4/ BI4

Page # 2 of 2

Report To DAN HATCH

Company

Address

City, State, ZIP

Phone Email danh@bluestonenw.com

SAMPLERS (signature)

PROJECT NAME	PO #
Auburn VW	BE-0107-C

REMARKS	INVOICE TO
Project specific RLs? - Yes / No	BLUESTONE

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MTCA 5 METALS				Notes
MW-3-10	11 A-E	5/23/22	1355	S	5	X											
MW-3-15	12		1400														
MW-4-3	13		1450			X				X	X		X				
MW-4-5	14		1455														
MW-4-10	15		1500			X											
MW-4-15	16		1505														
MW-5-3	17		1540			X				X	X		X				
MW-5-5	18		1545														
MW-5-10	19		1550			X											
MW-5-15	20	↓	1555	↓	↓												

Friedman & Bruya, Inc.
Ph. (206) 285-8282

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		HALEY CARTER	BLUESTONE	5/24/22	750
Received by:		Liz Webber-Bruya	F&B	5/24/22	1110
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

June 2, 2022

Dan Hatch, Project Manager
Bluestone Environmental NW
20204 SE 284th St
Kent, WA 98042

Dear Mr Hatch:

Included are the results from the testing of material submitted on May 23, 2022 from the Auburn VW BE-0107_C, F&BI 205405 project. There are 25 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
BST0602R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on May 23, 2022 by Friedman & Bruya, Inc. from the Bluestone Environmental NW Auburn VW BE-0107_C, F&BI 205405 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Bluestone Environmental NW
205405 -01	MW-1-5
205405 -02	MW-1-7
205405 -03	MW-1-12
205405 -04	MW-1-15
205405 -05	MW-2-5
205405 -06	MW-2-8
205405 -07	MW-2-12
205405 -08	MW-2-15
205405 -09	MW-3-3
205405 -10	MW-3-5
205405 -11	MW-3-10
205405 -12	MW-3-15
205405 -13	MW-4-3
205405 -14	MW-4-5
205405 -15	MW-4-10
205405 -16	MW-4-15
205405 -17	MW-5-3
205405 -18	MW-5-5
205405 -19	MW-5-10
205405 -20	MW-5-15

The 8260D calibration standard failed the acceptance criteria for several analytes in the method blank. The data were flagged accordingly.

The 8260D matrix spike and matrix spike duplicate failed the relative percent difference for several compounds. The analytes were not detected therefore the data were acceptable.

All other quality control requirements were acceptable.

Date of Report: 06/02/22
Date Received: 05/23/22
Project: Auburn VW BE-0107_C, F&BI 205405
Date Extracted: 05/25/22
Date Analyzed: 05/25/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
MW-1-7 205405-02	<50	<250	110
MW-2-8 205405-06	<50	<250	109
MW-3-3 205405-09	<50	<250	108
MW-3-10 205405-11	<50	<250	109
MW-4-3 205405-13	<50	2,900	108
MW-4-10 205405-15	<50	<250	110
MW-5-3 205405-17	<50	<250	110
MW-5-10 205405-19	<50	<250	109
Method Blank 02-1271 MB2	<50	<250	112

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-1-7	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/26/22	Lab ID:	205405-02
Date Analyzed:	05/26/22	Data File:	205405-02.043
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	WE

Analyte:	Concentration mg/kg (ppm)
Arsenic	13.4
Cadmium	<1
Chromium	12.0
Lead	10.3
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-2-8	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/26/22	Lab ID:	205405-06
Date Analyzed:	05/26/22	Data File:	205405-06.044
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	WE

Analyte:	Concentration mg/kg (ppm)
Arsenic	11.0
Cadmium	<1
Lead	4.60
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-2-8	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/26/22	Lab ID:	205405-06 x5
Date Analyzed:	05/26/22	Data File:	205405-06 x5.085
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	WE

Analyte:	Concentration mg/kg (ppm)
Chromium	18.8

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-3-3	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/26/22	Lab ID:	205405-09
Date Analyzed:	05/26/22	Data File:	205405-09.045
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	WE

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.96
Cadmium	<1
Chromium	9.05
Lead	6.38
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-4-3	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/26/22	Lab ID:	205405-13
Date Analyzed:	05/26/22	Data File:	205405-13.048
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	WE

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.33
Cadmium	<1
Chromium	7.46
Lead	2.88
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-5-3	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/26/22	Lab ID:	205405-17
Date Analyzed:	05/26/22	Data File:	205405-17.049
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	WE

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.56
Cadmium	<1
Chromium	10.4
Lead	5.86
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	NA	Project:	Auburn VW BE-0107_C
Date Extracted:	05/26/22	Lab ID:	I2-379 mb2
Date Analyzed:	05/26/22	Data File:	I2-379 mb2.038
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	WE

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-3-3	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/25/22	Lab ID:	205405-09
Date Analyzed:	05/31/22	Data File:	053117.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	90	109
Toluene-d8	99	89	112
4-Bromofluorobenzene	98	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-4-3	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/25/22	Lab ID:	205405-13
Date Analyzed:	05/31/22	Data File:	053118.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	90	109
Toluene-d8	98	89	112
4-Bromofluorobenzene	98	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-5-3	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/25/22	Lab ID:	205405-17
Date Analyzed:	05/31/22	Data File:	053119.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	90	109
Toluene-d8	100	89	112
4-Bromofluorobenzene	101	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	Not Applicable	Project:	Auburn VW BE-0107_C
Date Extracted:	05/25/22	Lab ID:	02-1229 mb
Date Analyzed:	05/26/22	Data File:	052607.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	90	109
Toluene-d8	100	89	112
4-Bromofluorobenzene	93	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 ca	1,3-Dichloropropane	<0.05
Chloromethane	<0.5 ca	Tetrachloroethene	<0.025
Vinyl chloride	<0.05 ca	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5 ca	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5 ca	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05 ca	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-1-7	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/27/22	Lab ID:	205405-02 1/5
Date Analyzed:	05/31/22	Data File:	053112.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	70	24	111
Phenol-d6	81	37	116
Nitrobenzene-d5	74	38	117
2-Fluorobiphenyl	76	45	117
2,4,6-Tribromophenol	91	11	158
Terphenyl-d14	97	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-2-8	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/27/22	Lab ID:	205405-06 1/5
Date Analyzed:	05/31/22	Data File:	053113.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	74	24	111
Phenol-d6	85	37	116
Nitrobenzene-d5	79	38	117
2-Fluorobiphenyl	81	45	117
2,4,6-Tribromophenol	94	11	158
Terphenyl-d14	96	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID: MW-3-3
Date Received: 05/23/22
Date Extracted: 05/27/22
Date Analyzed: 05/31/22
Matrix: Soil
Units: mg/kg (ppm) Dry Weight
Client: Bluestone Environmental NW
Project: Auburn VW BE-0107_C
Lab ID: 205405-09 1/5
Data File: 053114.D
Instrument: GCMS9
Operator: VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	67	24	111
Phenol-d6	80	37	116
Nitrobenzene-d5	76	38	117
2-Fluorobiphenyl	81	45	117
2,4,6-Tribromophenol	99	11	158
Terphenyl-d14	102	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-4-3	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/27/22	Lab ID:	205405-13 1/100
Date Analyzed:	05/31/22	Data File:	053120.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	63 d	24	111
Phenol-d6	69 d	37	116
Nitrobenzene-d5	70 d	38	117
2-Fluorobiphenyl	82 d	45	117
2,4,6-Tribromophenol	67 d	11	158
Terphenyl-d14	86 d	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.2
Acenaphthene	<0.2
Fluorene	<0.2
Phenanthrene	<0.2
Anthracene	<0.2
Fluoranthene	<0.2
Pyrene	<0.2
Benz(a)anthracene	<0.2
Chrysene	0.38
Benzo(a)pyrene	<0.2
Benzo(b)fluoranthene	<0.2
Benzo(k)fluoranthene	<0.2
Indeno(1,2,3-cd)pyrene	<0.2
Dibenz(a,h)anthracene	<0.2
Benzo(g,h,i)perylene	<0.2

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-5-3	Client:	Bluestone Environmental NW
Date Received:	05/23/22	Project:	Auburn VW BE-0107_C
Date Extracted:	05/27/22	Lab ID:	205405-17 1/5
Date Analyzed:	05/31/22	Data File:	053115.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	68	24	111
Phenol-d6	81	37	116
Nitrobenzene-d5	77	38	117
2-Fluorobiphenyl	86	45	117
2,4,6-Tribromophenol	108	11	158
Terphenyl-d14	115	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.014
2-Methylnaphthalene	0.038
1-Methylnaphthalene	0.028
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	Not Applicable	Project:	Auburn VW BE-0107_C
Date Extracted:	05/27/22	Lab ID:	02-1289 mb 1/5
Date Analyzed:	05/27/22	Data File:	052718.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	96	24	111
Phenol-d6	102	37	116
Nitrobenzene-d5	96	38	117
2-Fluorobiphenyl	99	45	117
2,4,6-Tribromophenol	105	11	158
Terphenyl-d14	108	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Date of Report: 06/02/22
Date Received: 05/23/22
Project: Auburn VW BE-0107_C, F&BI 205405

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 205412-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	100	92	73-135	8

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	94	74-139

Date of Report: 06/02/22
Date Received: 05/23/22
Project: Auburn VW BE-0107_C, F&BI 205405

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 205364-01 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	83	87	75-125	5
Cadmium	mg/kg (ppm)	10	<5	90	96	75-125	6
Chromium	mg/kg (ppm)	50	18.5	90	95	75-125	5
Lead	mg/kg (ppm)	50	<5	90	97	75-125	7
Mercury	mg/kg (ppm	5	<5	93	103	75-125	10

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	90	80-120
Cadmium	mg/kg (ppm)	10	96	80-120
Chromium	mg/kg (ppm)	50	96	80-120
Lead	mg/kg (ppm)	50	98	80-120
Mercury	mg/kg (ppm)	5	101	80-120

Date of Report: 06/02/22
Date Received: 05/23/22
Project: Auburn VW BE-0107_C, F&BI 205405

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 205359-07 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	1	<0.5	8 vo	14	10-142	55 vo
Chloromethane	mg/kg (ppm)	1	<0.5	28	37	10-126	28 vo
Vinyl chloride	mg/kg (ppm)	1	<0.05	30	38	10-138	24 vo
Bromomethane	mg/kg (ppm)	1	<0.5	52	61	10-163	16
Chloroethane	mg/kg (ppm)	1	<0.5	37	44	10-176	17
Trichlorofluoromethane	mg/kg (ppm)	1	<0.5	39	42	10-176	7
Acetone	mg/kg (ppm)	5	<5	55	62	10-163	12
1,1-Dichloroethene	mg/kg (ppm)	1	<0.05	56	61	10-160	9
Hexane	mg/kg (ppm)	1	<0.25	42	46	10-137	9
Methylene chloride	mg/kg (ppm)	1	<0.5	72	80	10-156	11
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	1	<0.05	69	77	21-145	11
trans-1,2-Dichloroethene	mg/kg (ppm)	1	<0.05	66	74	14-137	11
1,1-Dichloroethane	mg/kg (ppm)	1	<0.05	67	73	19-140	9
2,2-Dichloropropane	mg/kg (ppm)	1	<0.05	76	82	10-158	8
cis-1,2-Dichloroethene	mg/kg (ppm)	1	<0.05	72	81	25-135	12
Chloroform	mg/kg (ppm)	1	<0.05	71	77	21-145	8
2-Butanone (MEK)	mg/kg (ppm)	5	<1	67	72	19-147	7
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	<0.05	61	65	12-160	6
1,1,1-Trichloroethane	mg/kg (ppm)	1	<0.05	67	74	10-156	10
1,1-Dichloropropene	mg/kg (ppm)	1	<0.05	69	74	17-140	7
Carbon tetrachloride	mg/kg (ppm)	1	<0.05	70	75	9-164	7
Benzene	mg/kg (ppm)	1	<0.03	73	80	29-129	9
Trichloroethene	mg/kg (ppm)	1	<0.02	72	81	21-139	12
1,2-Dichloropropane	mg/kg (ppm)	1	<0.05	72	79	30-135	9
Bromodichloromethane	mg/kg (ppm)	1	<0.05	72	80	23-155	11
Dibromomethane	mg/kg (ppm)	1	<0.05	71	80	23-145	12
4-Methyl-2-pentanone	mg/kg (ppm)	5	<1	81	90	24-155	11
cis-1,3-Dichloropropene	mg/kg (ppm)	1	<0.05	79	87	28-144	10
Toluene	mg/kg (ppm)	1	<0.05	76	80	35-130	5
trans-1,3-Dichloropropene	mg/kg (ppm)	1	<0.05	75	84	26-149	11
1,1,2-Trichloroethane	mg/kg (ppm)	1	<0.05	74	83	10-205	11
2-Hexanone	mg/kg (ppm)	5	<0.5	74	81	15-166	9
1,3-Dichloropropane	mg/kg (ppm)	1	<0.05	75	81	31-137	8
Tetrachloroethene	mg/kg (ppm)	1	<0.025	76	82	20-133	8
Dibromochloromethane	mg/kg (ppm)	1	<0.05	77	83	28-150	7
1,2-Dibromoethane (EDB)	mg/kg (ppm)	1	<0.05	75	83	28-142	10
Chlorobenzene	mg/kg (ppm)	1	<0.05	76	82	32-129	8
Ethylbenzene	mg/kg (ppm)	1	<0.05	75	82	32-137	9
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	1	<0.05	78	86	31-143	10
m,p-Xylene	mg/kg (ppm)	2	<0.1	76	84	34-136	10
o-Xylene	mg/kg (ppm)	1	<0.05	80	87	33-134	8
Styrene	mg/kg (ppm)	1	<0.05	76	84	35-137	10
Isopropylbenzene	mg/kg (ppm)	1	<0.05	76	81	31-142	6
Bromoform	mg/kg (ppm)	1	<0.05	77	81	21-156	5
n-Propylbenzene	mg/kg (ppm)	1	<0.05	72	79	23-146	9
Bromobenzene	mg/kg (ppm)	1	<0.05	73	80	34-130	9
1,3,5-Trimethylbenzene	mg/kg (ppm)	1	<0.05	73	80	18-149	9
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	1	<0.05	75	83	28-140	10
1,2,3-Trichloropropane	mg/kg (ppm)	1	<0.05	73	79	25-144	8
2-Chlorotoluene	mg/kg (ppm)	1	<0.05	72	79	31-134	9
4-Chlorotoluene	mg/kg (ppm)	1	<0.05	71	78	31-136	9
tert-Butylbenzene	mg/kg (ppm)	1	<0.05	75	83	30-137	10
1,2,4-Trimethylbenzene	mg/kg (ppm)	1	<0.05	74	82	10-182	10
sec-Butylbenzene	mg/kg (ppm)	1	<0.05	74	81	23-145	9
p-Isopropyltoluene	mg/kg (ppm)	1	<0.05	74	81	21-149	9
1,3-Dichlorobenzene	mg/kg (ppm)	1	<0.05	74	82	30-131	10
1,4-Dichlorobenzene	mg/kg (ppm)	1	<0.05	73	82	29-129	12
1,2-Dichlorobenzene	mg/kg (ppm)	1	<0.05	75	84	31-132	11
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	1	<0.5	70	83	11-161	17
1,2,4-Trichlorobenzene	mg/kg (ppm)	1	<0.25	76	86	22-142	12
Hexachlorobutadiene	mg/kg (ppm)	1	<0.25	74	81	10-142	9
Naphthalene	mg/kg (ppm)	1	<0.05	77	87	14-157	12
1,2,3-Trichlorobenzene	mg/kg (ppm)	1	<0.25	75	84	20-144	11

Date of Report: 06/02/22
Date Received: 05/23/22
Project: Auburn VW BE-0107_C, F&BI 205405

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	1	34	10-146
Chloromethane	mg/kg (ppm)	1	51	27-133
Vinyl chloride	mg/kg (ppm)	1	57	22-139
Bromomethane	mg/kg (ppm)	1	64	38-114
Chloroethane	mg/kg (ppm)	1	56	9-163
Trichlorofluoromethane	mg/kg (ppm)	1	60	10-196
Acetone	mg/kg (ppm)	5	69	52-141
1,1-Dichloroethene	mg/kg (ppm)	1	76	47-128
Hexane	mg/kg (ppm)	1	74	43-142
Methylene chloride	mg/kg (ppm)	1	93	10-184
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	1	84	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	1	86	67-129
1,1-Dichloroethane	mg/kg (ppm)	1	85	68-115
2,2-Dichloropropane	mg/kg (ppm)	1	94	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	1	90	72-127
Chloroform	mg/kg (ppm)	1	86	66-120
2-Butanone (MEK)	mg/kg (ppm)	5	81	30-197
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	74	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	1	85	62-131
1,1-Dichloropropene	mg/kg (ppm)	1	86	69-128
Carbon tetrachloride	mg/kg (ppm)	1	87	60-139
Benzene	mg/kg (ppm)	1	90	71-118
Trichloroethene	mg/kg (ppm)	1	89	63-121
1,2-Dichloropropane	mg/kg (ppm)	1	89	72-127
Bromodichloromethane	mg/kg (ppm)	1	88	57-126
Dibromomethane	mg/kg (ppm)	1	87	62-123
4-Methyl-2-pentanone	mg/kg (ppm)	5	96	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	1	95	67-122
Toluene	mg/kg (ppm)	1	89	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	1	90	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	1	90	64-115
2-Hexanone	mg/kg (ppm)	5	89	33-152
1,3-Dichloropropane	mg/kg (ppm)	1	89	72-130
Tetrachloroethene	mg/kg (ppm)	1	92	72-114
Dibromochloromethane	mg/kg (ppm)	1	90	55-121
1,2-Dibromoethane (EDB)	mg/kg (ppm)	1	89	74-132
Chlorobenzene	mg/kg (ppm)	1	92	76-111
Ethylbenzene	mg/kg (ppm)	1	91	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	1	93	64-121
m,p-Xylene	mg/kg (ppm)	2	91	78-122
o-Xylene	mg/kg (ppm)	1	93	77-124
Styrene	mg/kg (ppm)	1	92	74-126
Isopropylbenzene	mg/kg (ppm)	1	91	76-127
Bromoform	mg/kg (ppm)	1	91	56-132
n-Propylbenzene	mg/kg (ppm)	1	88	74-124
Bromobenzene	mg/kg (ppm)	1	88	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	1	87	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	1	91	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	1	86	61-137
2-Chlorotoluene	mg/kg (ppm)	1	87	74-121
4-Chlorotoluene	mg/kg (ppm)	1	85	75-122
tert-Butylbenzene	mg/kg (ppm)	1	89	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	1	88	76-125
sec-Butylbenzene	mg/kg (ppm)	1	89	71-130
p-Isopropyltoluene	mg/kg (ppm)	1	89	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	1	90	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	1	89	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	1	89	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	1	84	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	1	93	64-135
Hexachlorobutadiene	mg/kg (ppm)	1	87	50-153
Naphthalene	mg/kg (ppm)	1	90	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	1	90	63-138

Date of Report: 06/02/22
Date Received: 05/23/22
Project: Auburn VW BE-0107_C, F&BI 205405

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 205441-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	<0.01	75	76	34-118	1
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	77	81	29-130	5
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	75	79	37-119	5
Acenaphthylene	mg/kg (ppm)	0.83	<0.01	80	83	45-128	4
Acenaphthene	mg/kg (ppm)	0.83	<0.01	76	79	36-125	4
Fluorene	mg/kg (ppm)	0.83	<0.01	80	85	48-121	6
Phenanthrene	mg/kg (ppm)	0.83	<0.01	78	82	50-150	5
Anthracene	mg/kg (ppm)	0.83	<0.01	81	86	50-150	6
Fluoranthene	mg/kg (ppm)	0.83	<0.01	82	87	50-150	6
Pyrene	mg/kg (ppm)	0.83	<0.01	77	80	50-150	4
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	80	82	50-150	2
Chrysene	mg/kg (ppm)	0.83	<0.01	79	83	50-150	5
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	78	84	50-150	7
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	78	82	50-150	5
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	75	83	50-150	10
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	93	92	41-134	1
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	95	98	44-130	3
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	<0.01	92	95	33-131	3

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	79	58-108
2-Methylnaphthalene	mg/kg (ppm)	0.83	84	67-108
1-Methylnaphthalene	mg/kg (ppm)	0.83	83	66-107
Acenaphthylene	mg/kg (ppm)	0.83	85	70-130
Acenaphthene	mg/kg (ppm)	0.83	82	66-112
Fluorene	mg/kg (ppm)	0.83	89	67-117
Phenanthrene	mg/kg (ppm)	0.83	84	70-130
Anthracene	mg/kg (ppm)	0.83	87	70-130
Fluoranthene	mg/kg (ppm)	0.83	87	70-130
Pyrene	mg/kg (ppm)	0.83	88	70-130
Benz(a)anthracene	mg/kg (ppm)	0.83	82	70-130
Chrysene	mg/kg (ppm)	0.83	83	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	85	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	85	69-125
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	83	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	94	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	97	67-128
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	94	64-127

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

205405

SAMPLE CHAIN OF CUSTODY

05/23/22 [redacted]

US-B4 / BI42

Page # 1 of

[redacted] Report To DAN HATCH

Company BLUESTONE NW

Address

City, State, ZIP

Phone Email danh@bluestonenw.com

SAMPLERS (signature)

PROJECT NAME Auburn VW

PO # BE-0107-BC

REMARKS

Project specific RLs? - Yes / No

INVOICE TO BLUESTONE

TURNAROUND TIME

☒ Standard turnaround

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Archive samples

☐ Other

Default: Dispose after 30 days

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MTCA 5				Notes
MW-1-5	01 A-E	5/23/22	905	S	5												
MW-1-7	02		910			X					X		X				
MW-1-12	03		915														
MW-1-15	04		920														
MW-2-5	05		1050														
MW-2-8	06		1055			X					X		X				
MW-2-12	07		1100														
MW-2-15	08		1105														
MW-3-3	09		1345			X				X	X		X				
MW-3-5	10	↓	1350	↓	↓												

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	HALEY CARTER	BLUESTONE	5/24/22	750
Received by:	Liz Webber-Bruya	F&B	5/24/22	1110
Relinquished by:		Samples received at 3 °C		
Received by:				

205405

SAMPLE CHAIN OF CUSTODY

05/23/22 VS-B4/BI4

Page # 2 of 2

Report To DAN HATCH

Company

Address

City, State, ZIP

Phone Email danh@bluestonenw.com

SAMPLERS (signature)

PROJECT NAME Auburn VW

PO # BE-0107-C

REMARKS

Project specific RLs? - Yes / No

INVOICE TO BLUESTONE

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MTCA 5 METALS				Notes
MW-3-10	11 A-E	5/23/22	1355	S	5	X											
MW-3-15	12		1400														
MW-4-3	13		1430			X				X	X		X				
MW-4-5	14		1435														
MW-4-10	15		1500			X											
MW-4-15	16		1505														
MW-5-3	17		1540			X				X	X		X				
MW-5-5	18		1545														
MW-5-10	19		1550			X											
MW-5-15	20		1555														

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	HALEY CARTER	BLUESTONE	5/24/22	750
Received by:	Liz Webber-Bruya	F&B	5/24/22	1110
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

June 9, 2022

Dan Hatch, Project Manager
Bluestone Environmental NW
20204 SE 284th St
Kent, WA 98042

Dear Mr Hatch:

Included are the additional results from the testing of material submitted on May 23, 2022 from the Auburn VW BE-0107_BC, F&BI 205405 project. There are 4 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
BST0609R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on May 23, 2022 by Friedman & Bruya, Inc. from the Bluestone Environmental NW Auburn VW BE-0107_BC, F&BI 205405 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Bluestone Environmental NW
205405 -01	MW-1-5
205405 -02	MW-1-7
205405 -03	MW-1-12
205405 -04	MW-1-15
205405 -05	MW-2-5
205405 -06	MW-2-8
205405 -07	MW-2-12
205405 -08	MW-2-15
205405 -09	MW-3-3
205405 -10	MW-3-5
205405 -11	MW-3-10
205405 -12	MW-3-15
205405 -13	MW-4-3
205405 -14	MW-4-5
205405 -15	MW-4-10
205405 -16	MW-4-15
205405 -17	MW-5-3
205405 -18	MW-5-5
205405 -19	MW-5-10
205405 -20	MW-5-15

The NWTPH-Dx analysis in this report was requested outside of the holding time The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 06/09/22
Date Received: 05/23/22
Project: Auburn VW BE-0107_BC, F&BI 205405
Date Extracted: 06/07/22
Date Analyzed: 06/07/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
MW-1-5 ht 205405-01	<50	<250	114
MW-1-12 ht 205405-03	<50	<250	112
MW-2-5 ht 205405-05	<50	<250	111
MW-2-12 ht 205405-07	<50	<250	113
MW-3-5 ht 205405-10	<50	<250	110
MW-4-5 ht 205405-14	<50	<250	108
MW-5-5 ht 205405-18	<50	<250	109
Method Blank 02-1361 MB	<50	<250	107

Date of Report: 06/09/22
Date Received: 05/23/22
Project: Auburn VW BE-0107_BC, F&BI 205405

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 206049-09 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	100	112	123	73-135	9

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	106	74-139

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

205405

SAMPLE CHAIN OF CUSTODY

05/23/22 [redacted]

US-B4 / BI42

Page # 1 of

Report To DAN HATCH

Company BLUESTONE NW

Address

City, State, ZIP

Phone Email danh@bluestonenw.com

SAMPLERS (signature)

PROJECT NAME Auburn VW

PO # BE:0107-BC

REMARKS

Project specific RLs? - Yes / No

INVOICE TO BLUESTONE

TURNAROUND TIME

☑ Standard turnaround

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Archive samples

☐ Other

Default: Dispose after 30 days

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MTCA 5				Notes ⊗ - per DH [illegible] ✓ - per DH 6/1
MW-1-5	01 A-E	5/23/22	905	S	5	✓	⊗	⊗									
MW-1-7	02	↓	910	↓	↓	X	⊗	⊗			X		X				
MW-1-12	03		915			✓	⊗	⊗									
MW-1-15	04		920														
MW-2-5	05		1050			✓	⊗	⊗									
MW-2-8	06		1055			X	⊗	⊗			X		X				
MW-2-12	07		1100			✓	⊗	⊗									
MW-2-15	08		1105														
MW-3-3	09		1345			X	⊗	⊗		X	X		X				
MW-3-5	10		1350			✓	⊗	⊗									

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	HALEY CARTER	BLUESTONE	5/24/22	750
Received by:	Liz Webber-Bruya	F&B	5/24/22	1110
Relinquished by:		Samples received at 3 °C		
Received by:				

205405

Report To DAN HATCH

Company

Address

City, State, ZIP

Phone Email danh@bluestonenw.com

SAMPLE CHAIN OF CUSTODY

05/23/22 VS-B4/2 B14/2

Page # 2 of 2

SAMPLERS (signature)

PROJECT NAME Auburn VW

PO # BE-0107-C

REMARKS

Project specific RLs? - Yes / No

INVOICE TO BLUESTONE

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MTCA 5 METALS				Notes
MW-3-10	11 A-E	5/23/22	1355	S	5	X	⊗	⊗									
MW-3-15	12		1400														
MW-4-3	13		1450			X	⊗	⊗		X	X		X				
MW-4-5	14		1455			✓	⊗	⊗									
MW-4-10	15		1500			X	⊗	⊗									
MW-4-15	16		1505														
MW-5-3	17		1540			X	⊗	⊗		X	X		X				
MW-5-5	18		1545			✓	⊗	⊗									
MW-5-10	19		1550			X	⊗	⊗									
MW-5-15	20	↓	1555	↓	↓												

Friedman & Bruya, Inc.
Ph. (206) 285-8282

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		HALEY CARTER	BLUESTONE	5/24/22	750
Received by:		Liz Webber-Bruya	F&B	5/24/22	1110
Relinquished by:					
Received by:					

205405

SAMPLE CHAIN OF CUSTODY

05/23/22 US-B4 / BI42

Page # 1 of

[redacted] Report To DAN HATCH

Company BLUESTONE NW

Address

City, State, ZIP

Phone Email danh@bluestonenw.com

SAMPLERS (signature) [redacted]

PROJECT NAME Auburn VW

PO # BE:0107-BC

REMARKS

Project specific RLs? - Yes / No

INVOICE TO BLUESTONE

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MTCA 5				Notes ⊗ - per DH [illegible] ✓ - per DH [illegible]
MW-1-5	01 A-E	5/23/22	905	S	5	✓	⊗	⊗									
MW-1-7	02		910			X	⊗	⊗			X		X				
MW-1-12	03		915			✓	⊗	⊗									
MW-1-15	04		920														
MW-2-5	05		1050			✓	⊗	⊗									
MW-2-8	06		1055			X	⊗	⊗			X		X				
MW-2-12	07		1100			✓	⊗	⊗									
MW-2-15	08		1105														
MW-3-3	09		1335			X	⊗	⊗		X	X		X				
MW-3-5	10	↓	1350	↓	↓	✓	⊗	⊗									

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	HALEY CARTER	BLUESTONE	5/24/22	750
Received by:	Liz Webber-Bruya	F&B	5/24/22	1110
Relinquished by:		Samples received at 3 °C		
Received by:				

205405

Report To DAN HATCH

Company

Address

City, State, ZIP

Phone Email danh@bluestonenw.com

SAMPLE CHAIN OF CUSTODY

05/23/22 [redacted] VS-B4/ BI4

Page # 2 of 2

SAMPLERS (signature)

PROJECT NAME	PO #
Auburn VW	BE-0107-C
REMARKS Project specific RLs? - Yes / No	INVOICE TO BLUESTONE

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MTCA 5 METALS				Notes
MW-3-10	11 A-E	5/23/22	1355	S	5	X	⊗	⊗									
MW-3-15	12		1400														
MW-4-3	13		1450			X	⊗	⊗		X	X		X				
MW-4-5	14		1455			✓	⊗	⊗									
MW-4-10	15		1500			X	⊗	⊗									
MW-4-15	16		1505														
MW-5-3	17		1540			X	⊗	⊗		X	X		X				
MW-5-5	18		1545			✓	⊗	⊗									
MW-5-10	19		1550			X	⊗	⊗									
MW-5-15	20	↓	1555	↓	↓												

Friedman & Bruya, Inc.
Ph. (206) 285-8282

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		HALEY CARTER	BLUESTONE	5/24/22	750
Received by:		Liz Webber-Bruya	F&B	5/24/22	1110
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

June 15, 2022

Dan Hatch, Project Manager
Bluestone Environmental NW
20204 SE 284th St
Kent, WA 98042

Dear Mr Hatch:

Included are the additional results from the testing of material submitted on May 23, 2022 from the Auburn VW BE-0107_BC, F&BI 205405 project. There are 5 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
BST0615R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on May 23, 2022 by Friedman & Bruya, Inc. from the Bluestone Environmental NW Auburn VW BE-0107_BC, F&BI 205405 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Bluestone Environmental NW
205405 -01	MW-1-5
205405 -02	MW-1-7
205405 -03	MW-1-12
205405 -04	MW-1-15
205405 -05	MW-2-5
205405 -06	MW-2-8
205405 -07	MW-2-12
205405 -08	MW-2-15
205405 -09	MW-3-3
205405 -10	MW-3-5
205405 -11	MW-3-10
205405 -12	MW-3-15
205405 -13	MW-4-3
205405 -14	MW-4-5
205405 -15	MW-4-10
205405 -16	MW-4-15
205405 -17	MW-5-3
205405 -18	MW-5-5
205405 -19	MW-5-10
205405 -20	MW-5-15

The NWTPH-Gx and BTEX samples were requested outside of the holding time. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 06/15/22
Date Received: 05/23/22
Project: Auburn VW BE-0107_BC, F&BI 205405
Date Extracted: 06/13/22
Date Analyzed: 06/13/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-1-5 ht 205405-01	<0.02	<0.02	<0.02	<0.06	<5	81
MW-1-7 ht 205405-02	<0.02	<0.02	<0.02	<0.06	<5	83
MW-1-12 ht 205405-03	<0.02	<0.02	<0.02	<0.06	<5	67
MW-2-5 ht 205405-05	<0.02	<0.02	<0.02	<0.06	<5	82
MW-2-8 ht 205405-06	<0.02	<0.02	<0.02	<0.06	<5	84
MW-2-12 ht 205405-07	<0.02	<0.02	<0.02	<0.06	<5	86
MW-3-3 ht 205405-09	<0.02	<0.02	<0.02	<0.06	<5	83
MW-3-5 ht 205405-10	<0.02	<0.02	<0.02	<0.06	<5	80
MW-3-10 ht 205405-11	<0.02	<0.02	<0.02	<0.06	<5	81
MW-4-3 ht 205405-13	<0.02	<0.02	<0.02	<0.06	<5	61
MW-4-5 ht 205405-14	<0.02	<0.02	<0.02	<0.06	<5	81

Date of Report: 06/15/22
Date Received: 05/23/22
Project: Auburn VW BE-0107_BC, F&BI 205405
Date Extracted: 06/13/22
Date Analyzed: 06/13/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-4-10 ht 205405-15	<0.02	<0.02	<0.02	<0.06	<5	74
MW-5-3 ht 205405-17	<0.02	<0.02	<0.02	<0.06	<5	79
MW-5-5 ht 205405-18	<0.02	<0.02	<0.02	<0.06	<5	77
MW-5-10 ht 205405-19	<0.02	<0.02	<0.02	<0.06	<5	75
Method Blank 02-1153 MB	<0.02	<0.02	<0.02	<0.06	<5	84

Date of Report: 06/15/22
Date Received: 05/23/22
Project: Auburn VW BE-0107_BC, F&BI 205405

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 205405-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	0.5	90	69-120
Toluene	mg/kg (ppm)	0.5	90	70-117
Ethylbenzene	mg/kg (ppm)	0.5	90	65-123
Xylenes	mg/kg (ppm)	1.5	93	66-120
Gasoline	mg/kg (ppm)	20	105	71-131

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

205405

SAMPLE CHAIN OF CUSTODY

05/23/22 [redacted]

US-B4 / BI42

Page # 1 of

[redacted] Report To DAN HATCH

Company BLUESTONE NW

Address

City, State, ZIP

Phone

Email danh@bluestonenw.com

SAMPLERS (signature)

PROJECT NAME Auburn VW

PO # BE-0107-BC

REMARKS

INVOICE TO BLUESTONE

Project specific RLs? - Yes / No

TURNAROUND TIME

☒ Standard turnaround

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Archive samples

☐ Other

Default: Dispose after 30 days

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MTCA 5				Notes
MW-1-5	01 A-E	5/23/22	905	S	5												
MW-1-7	02		910			X					X		X				
MW-1-12	03		915														
MW-1-15	04		920														
MW-2-5	05		1050														
MW-2-8	06		1055			X					X		X				
MW-2-12	07		1100														
MW-2-15	08		1105														
MW-3-3	09		1345			X				X	X		X				
MW-3-5	10		1350														

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	HALEY CARTER	BLUESTONE	5/24/22	750
Received by:	Liz Webber-Bruya	F&B	5/24/22	1110
Relinquished by:		Samples received at 3 °C		
Received by:				

205405

SAMPLE CHAIN OF CUSTODY

05/23/22 VS-B4/ BI4

Page # 2 of 2

Report To DAN HATCH

Company

Address

City, State, ZIP

Phone Email danh@bluestonenw.com

SAMPLERS (signature)	
PROJECT NAME Auburn VW	PO # BE-0107-C
REMARKS Project specific RLs? - Yes / No	INVOICE TO BLUESTONE

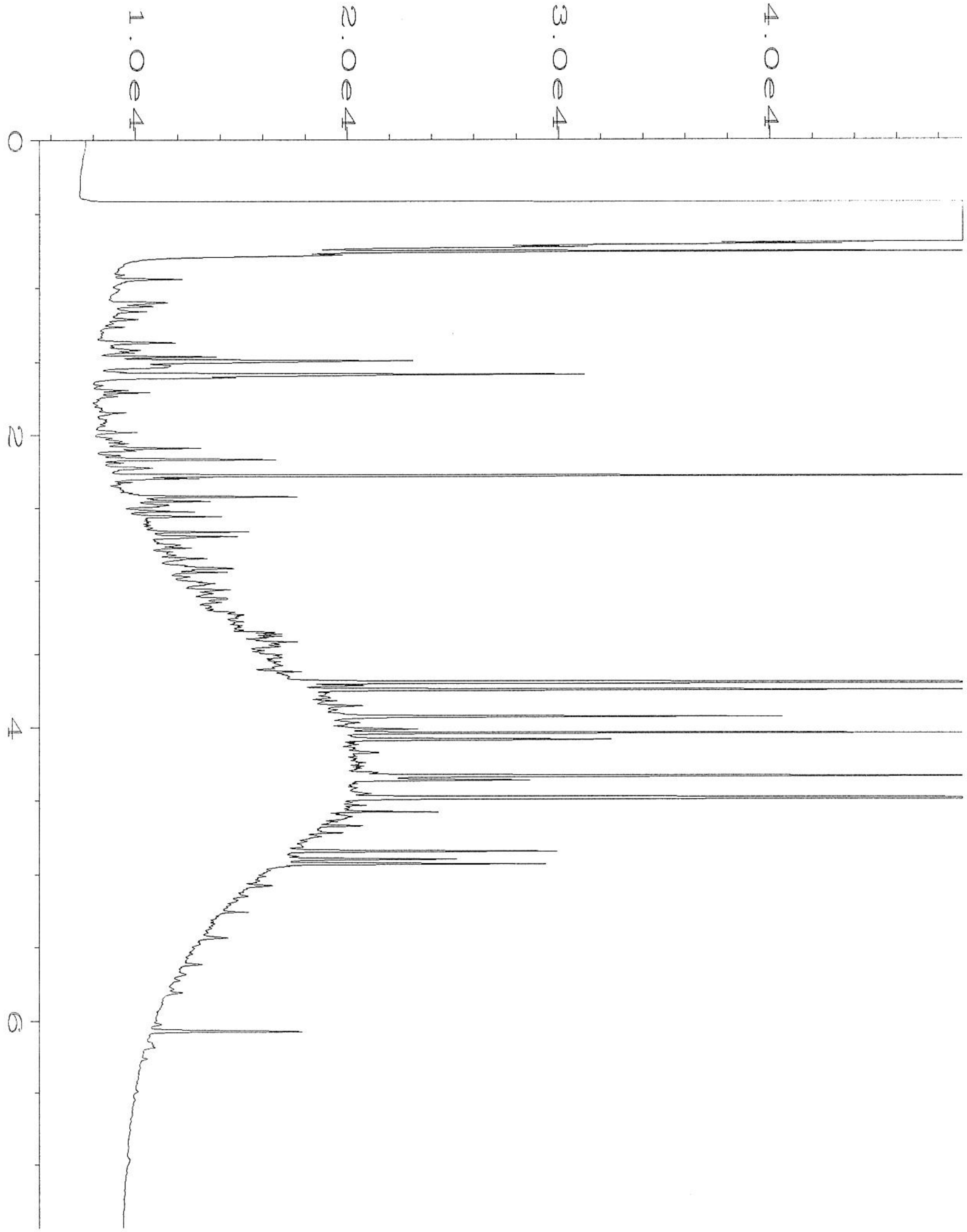
TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MTCA 5 METALS				Notes
MW-3-10	11 A-E	5/23/22	1355	S	5	X											
MW-3-15	12		1400														
MW-4-3	13		1450			X				X	X		X				
MW-4-5	14		1455														
MW-4-10	15		1500			X											
MW-4-15	16		1505														
MW-5-3	17		1540			X				X	X		X				
MW-5-5	18		1545														
MW-5-10	19		1550			X											
MW-5-15	20	↓	1555	↓	↓												

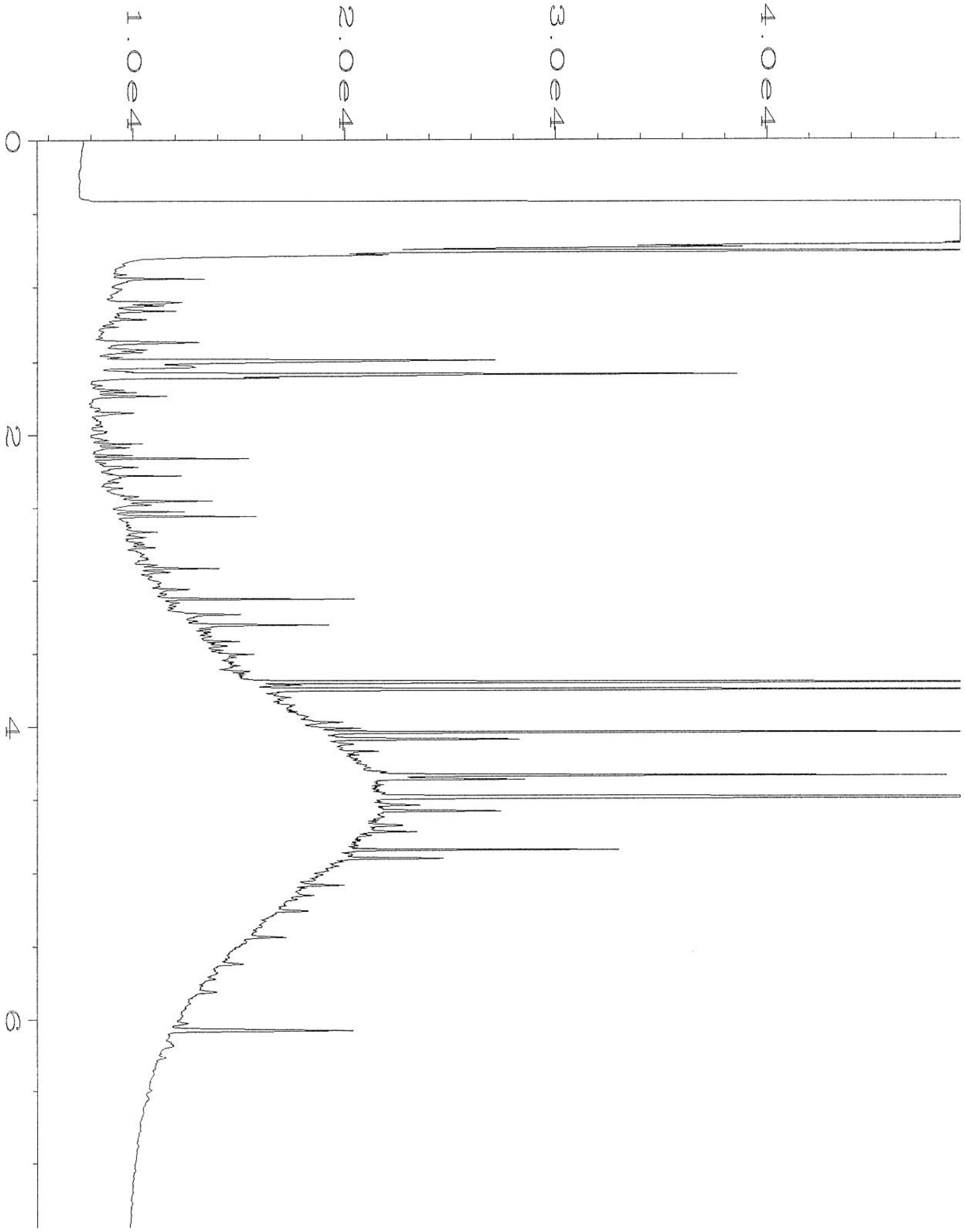
Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	HALEY CARTER	BLUESTONE	5/24/22	750
Received by:	Liz Webber-Bruya	F&B	5/24/22	1110
Relinquished by:				
Received by:				



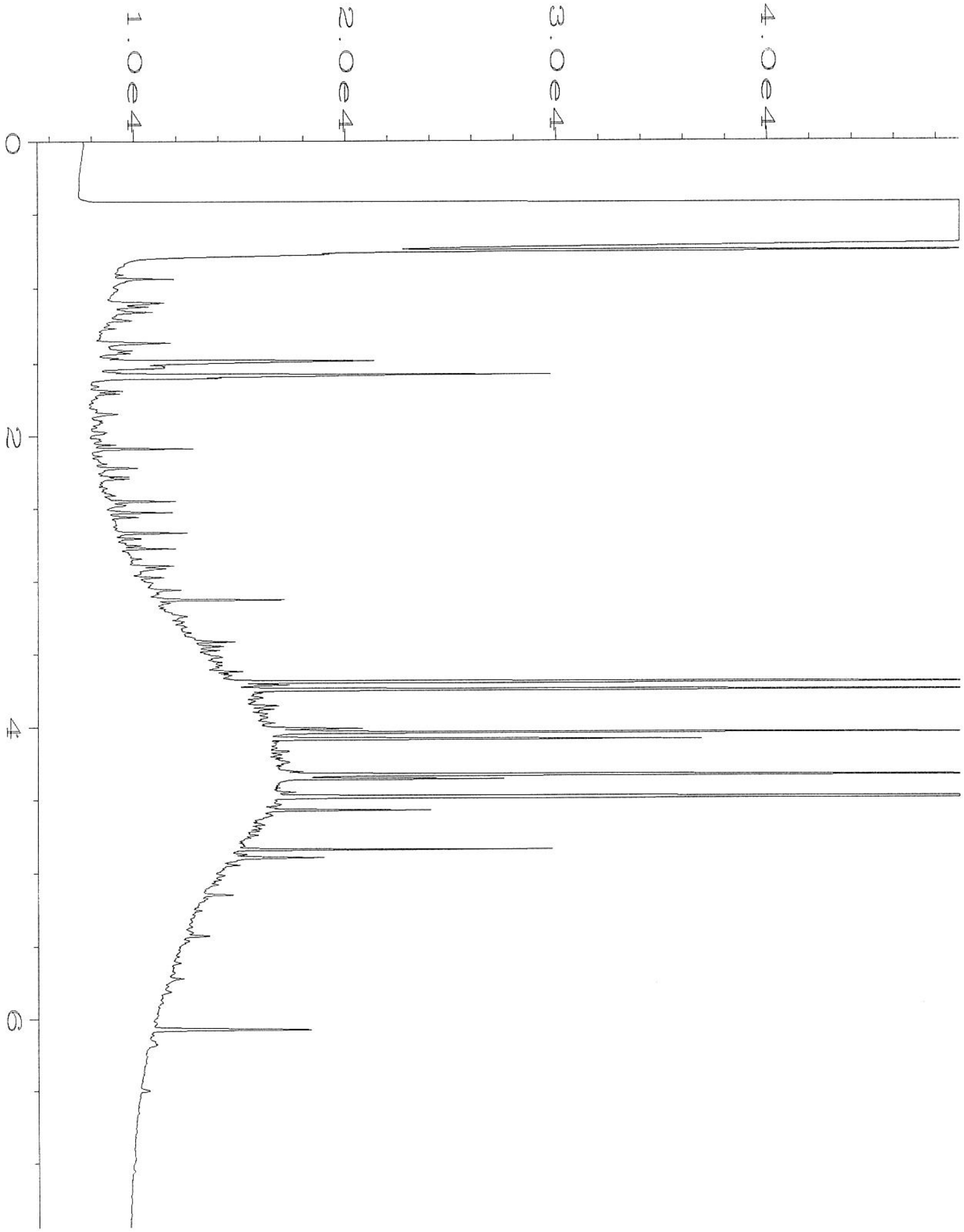
Data File Name : C:\HPCHEM\1\DATA\07-27-22\057F1501.D
Operator : TL
Instrument : GC1
Sample Name : 207447-01
Run Time Bar Code:
Acquired on : 28 Jul 22 02:46 AM
Report Created on: 10 Aug 22 10:54 AM

Page Number : 1
Vial Number : 57
Injection Number : 1
Sequence Line : 15
Instrument Method: DX.MTH
Analysis Method : DX.MTH



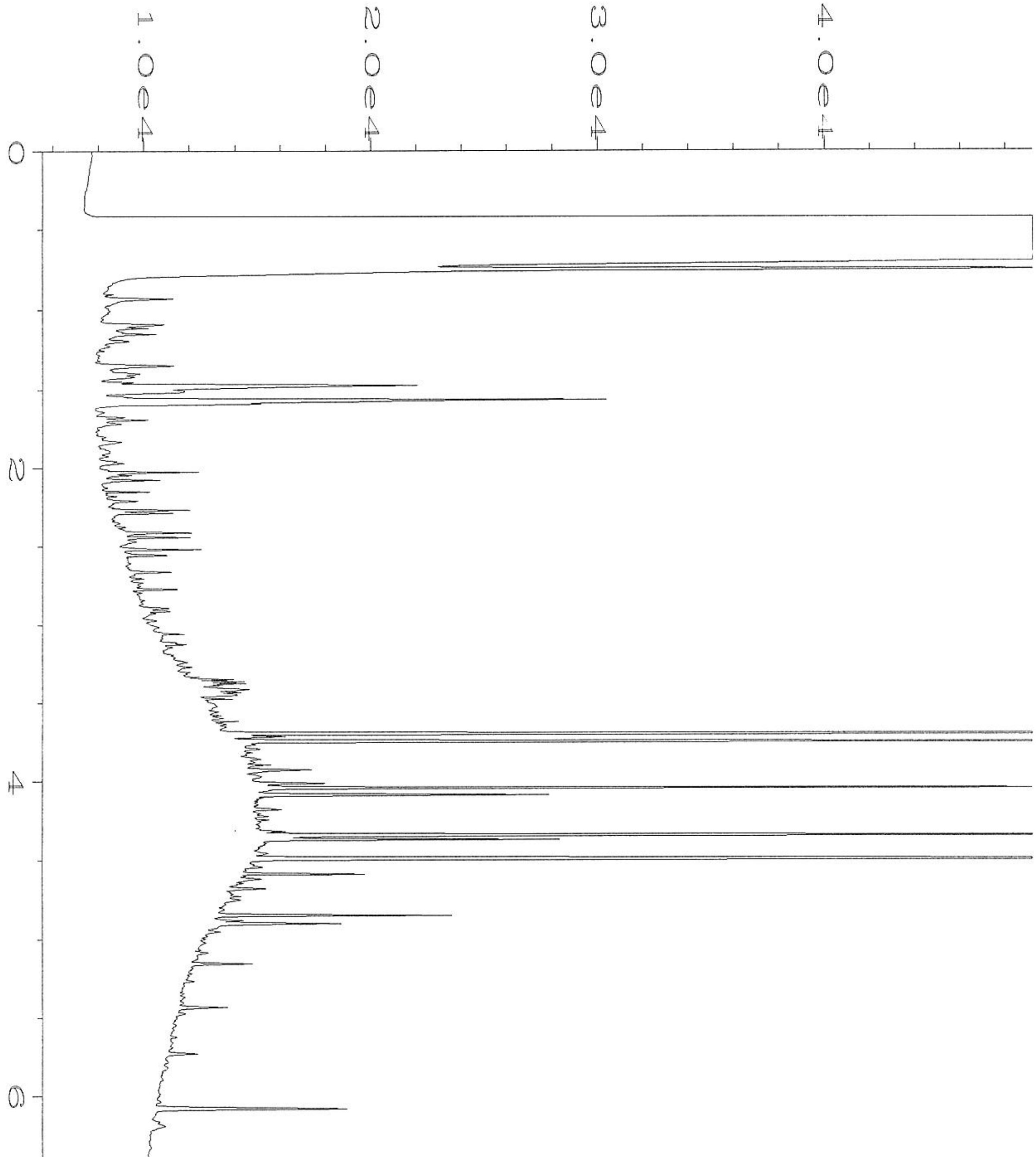
Data File Name   : C:\HPCHEM\1\DATA\07-27-22\058F1501.D
Operator   : TL
Instrument   : GC1
Sample Name   : 207447-02
Run Time Bar Code:
Acquired on   : 28 Jul 22   03:02 AM
Report Created on: 10 Aug 22   10:54 AM

Page Number   : 1
Vial Number   : 58
Injection Number : 1
Sequence Line   : 15
Instrument Method: DX.MTH
Analysis Method   : DX.MTH



Data File Name : C:\HPCHEM\1\DATA\07-27-22\059F1501.D
Operator : TL
Instrument : GC1
Sample Name : 207447-03
Run Time Bar Code:
Acquired on : 28 Jul 22 03:18 AM
Report Created on: 10 Aug 22 10:54 AM

Page Number : 1
Vial Number : 59
Injection Number : 1
Sequence Line : 15
Instrument Method: DX.MTH
Analysis Method : DX.MTH



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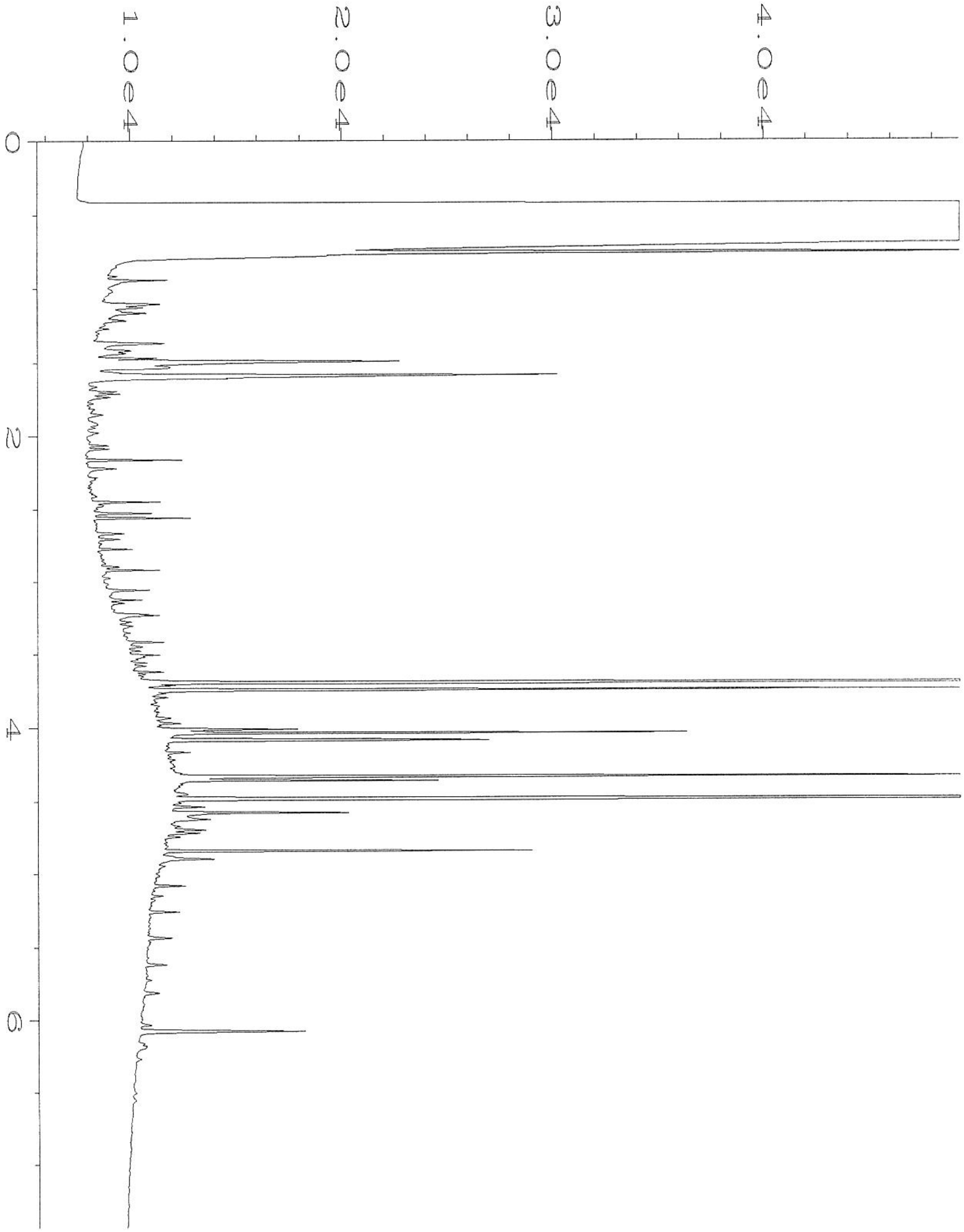
Data File Name    : C:\HPCHEM\1\DATA\07-27-22\060F1501.D
Operator          : TL                         Page Number       : 1
Instrument        : GC1                        Vial Number       : 60
Sample Name       : 207447-04                  Injection Number  : 1
Run Time Bar Code:                             Sequence Line     : 15
Acquired on       : 28 Jul 22   03:33 AM       Instrument Method: DX.MTH
Report Created on: 10 Aug 22   10:54 AM       Analysis Method   : DX.MTH
```



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Data File Name    : C:\HPCHEM\1\DATA\07-27-22\061F1501.D
Operator          : TL                                   Page Number        : 1
Instrument        : GC1                                  Vial Number        : 61
Sample Name       : 207447-05                            Injection Number : 1
Run Time Bar Code:                                       Sequence Line      : 15
Acquired on       : 28 Jul 22   05:13 AM                 Instrument Method: DX.MTH
Report Created on: 10 Aug 22   10:54 AM                  Analysis Method   : DX.MTH
```

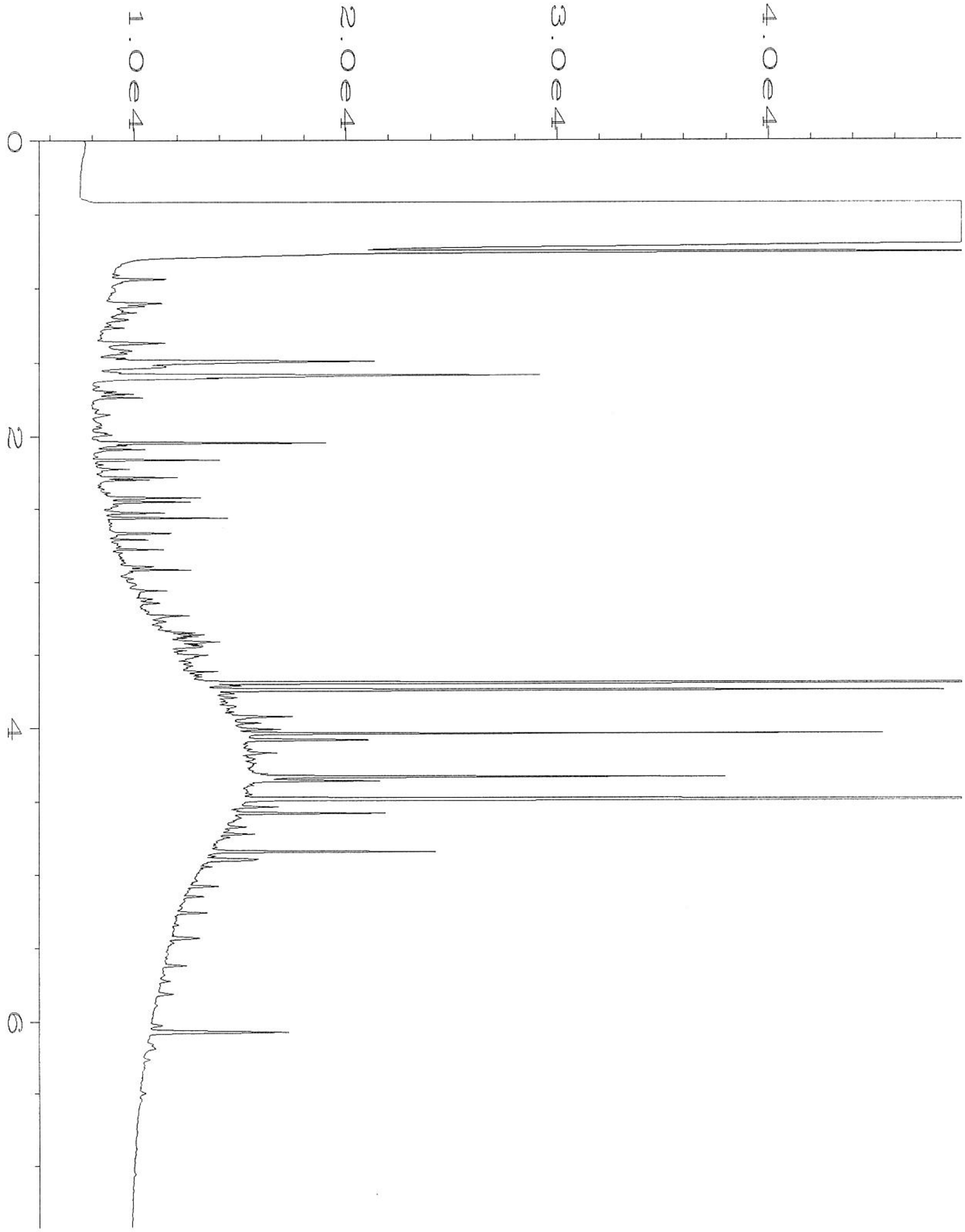

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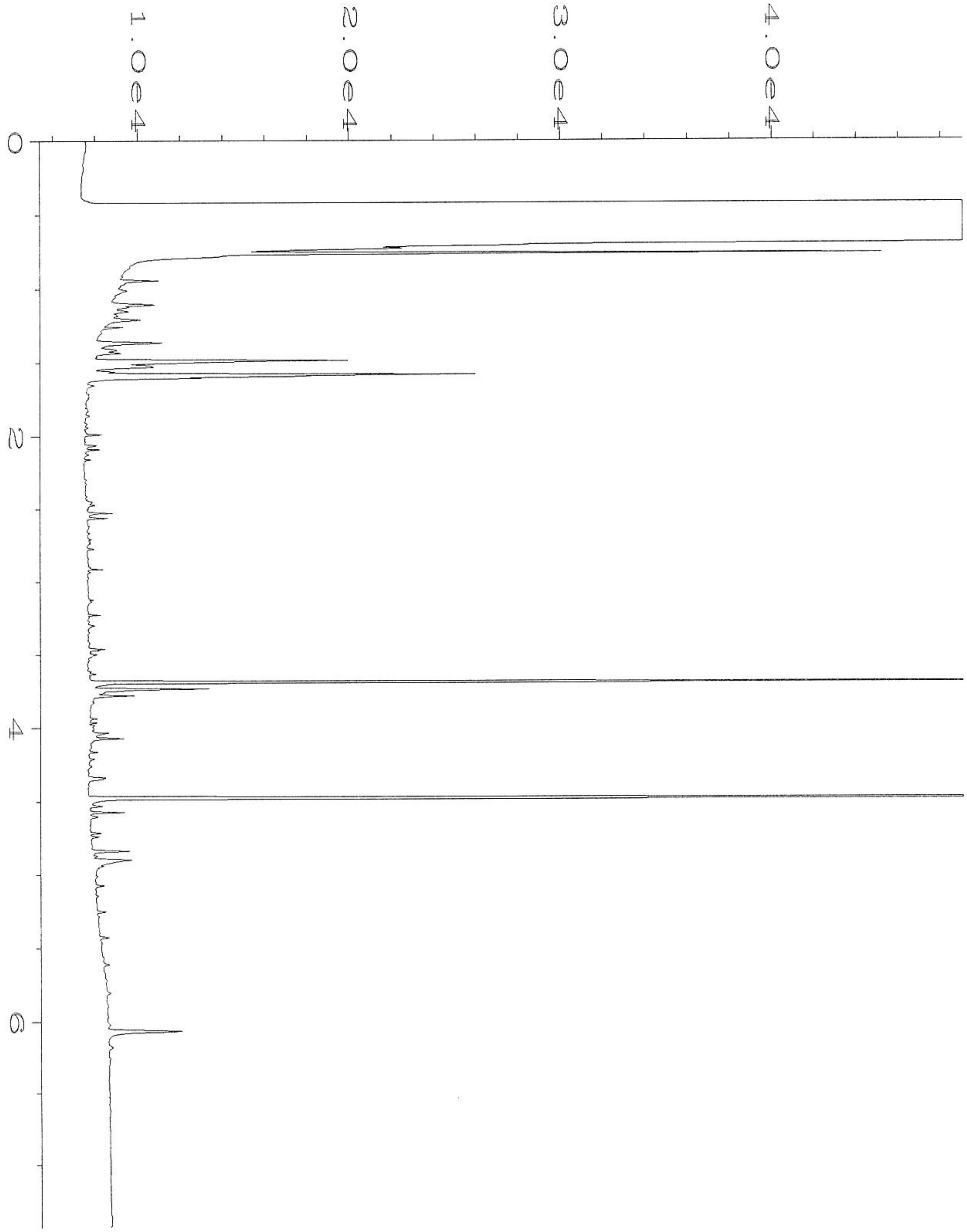
Data File Name    : C:\HPCHEM\1\DATA\07-27-22\062F1501.D
Operator          : TL                           Page Number        : 1
Instrument        : GC1                          Vial Number        : 62
Sample Name       : 207447-06                    Injection Number : 1
Run Time Bar Code:                               Sequence Line      : 15
Acquired on       : 28 Jul 22   05:28 AM         Instrument Method: DX.MTH
Report Created on: 10 Aug 22   10:54 AM          Analysis Method   : DX.MTH
```



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Data File Name    : C:\HPCHEM\1\DATA\07-27-22\040F1301.D
Operator          : TL                                 Page Number        : 1
Instrument        : GC1                                Vial Number        : 40
Sample Name       : 02-1847 mb                         Injection Number : 1
Run Time Bar Code:                                     Sequence Line      : 13
Acquired on       : 27 Jul 22   09:41 PM               Instrument Method: DX.MTH
Report Created on: 10 Aug 22   10:53 AM               Analysis Method   : DX.MTH
```

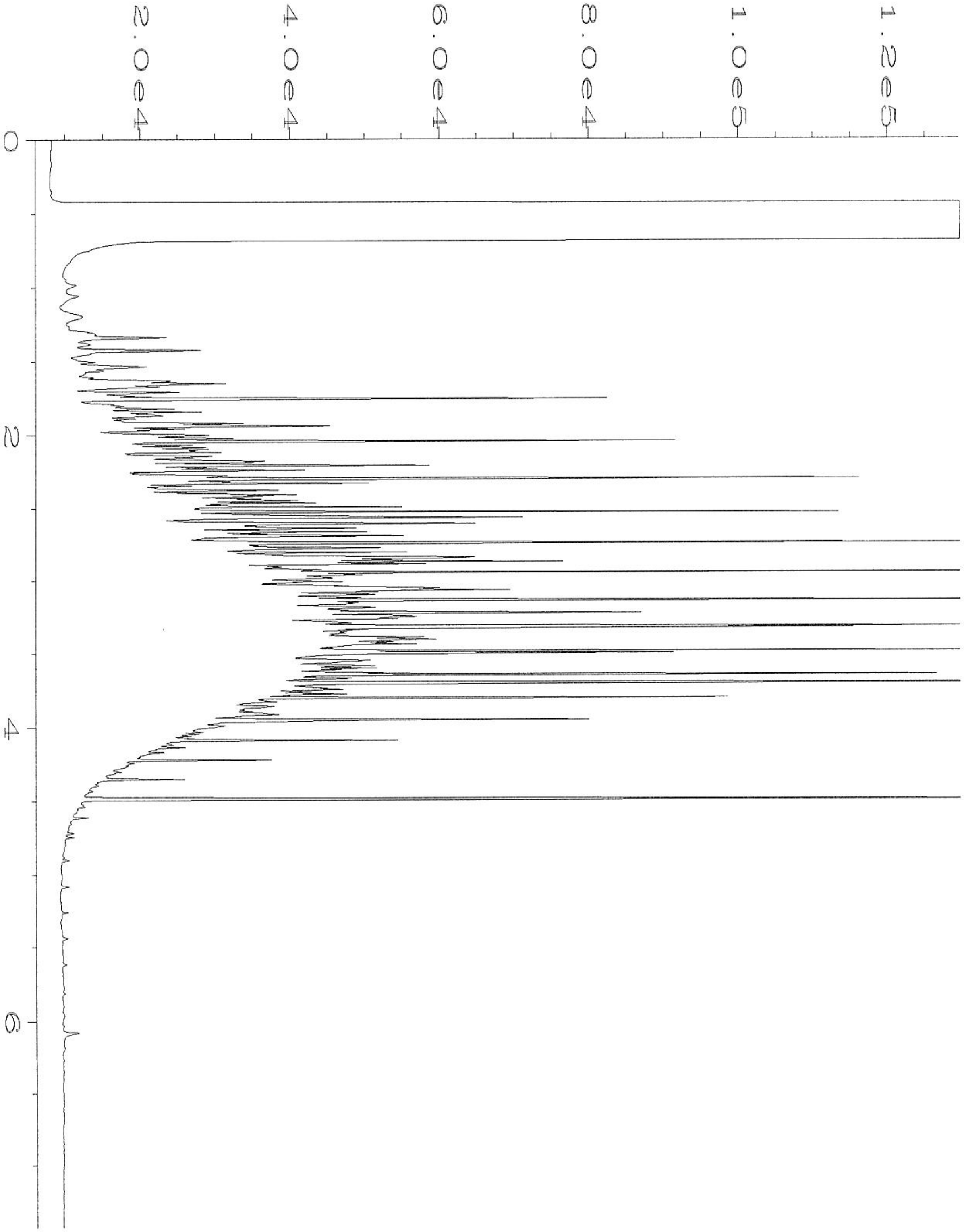

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Data File Name    : C:\HPCHEM\1\DATA\07-27-22\003F0201.D
Operator          : TL                              Page Number      : 1
Instrument        : GC1                             Vial Number      : 3
Sample Name       : 500 Dx 65-122F                  Injection Number : 1
Run Time Bar Code:                                  Sequence Line    : 2
Acquired on       : 27 Jul 22  06:45 AM             Instrument Method: DX.MTH
Report Created on: 10 Aug 22  10:53 AM              Analysis Method  : DX.MTH
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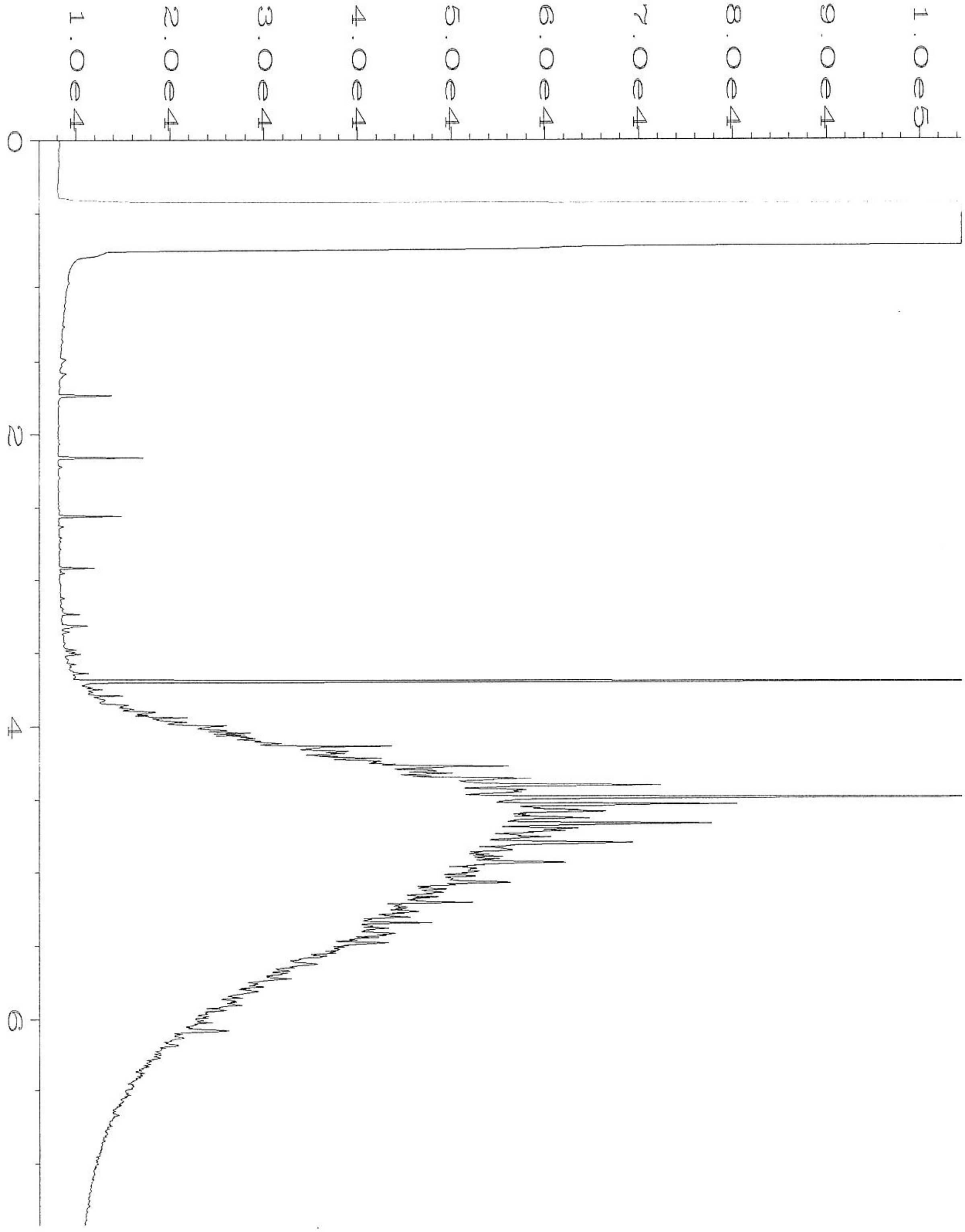

Data File Name : C:\HPCHEM\1\DATA\07-27-22\002F0201.D
Operator : TL
Instrument : GC1
Sample Name : 500 MO 66-51C
Run Time Bar Code:
Acquired on : 27 Jul 22 06:29 AM
Report Created on: 10 Aug 22 10:53 AM

Page Number : 1
Vial Number : 2
Injection Number : 1
Sequence Line : 2
Instrument Method: DX.MTH
Analysis Method : DX.MTH

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
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Vineta Mills, M.S.
Eric Young, B.S.

3012 16th Avenue West
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www.friedmanandbruya.com

August 8, 2022

Dan Hatch, Project Manager
Bluestone Environmental NW
20204 SE 284th St
Kent, WA 98042

Dear Mr Hatch:

Included are the results from the testing of material submitted on July 26, 2022 from the Auburn VW, F&BI 207447 project. There are 24 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Carter
BST0808R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on July 26, 2022 by Friedman & Bruya, Inc. from the Bluestone Environmental NW Auburn VW, F&BI 207447 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Bluestone Environmental NW
207447 -01	MW-1
207447 -02	MW-2
207447 -03	MW-3
207447 -04	MW-4
207447 -05	MW-5
207447 -06	MW-DUPA

All quality control requirements were acceptable.

Date of Report: 08/08/22
Date Received: 07/26/22
Project: Auburn VW, F&BI 207447
Date Extracted: 07/27/22
Date Analyzed: 07/27/22

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Extended (C_{10}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
MW-1 207447-01	960 x	144
MW-2 207447-02	940 x	ip
MW-3 207447-03	670 x	145
MW-4 207447-04	550 x	ip
MW-5 207447-05	300 x	ip
MW-DUPA 207447-06	510 x	141
Method Blank 02-1847 MB	<250	111

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-1	Client:	Bluestone Environmental NW
Date Received:	07/26/22	Project:	Auburn VW, F&BI 207447
Date Extracted:	07/27/22	Lab ID:	207447-01 x5
Date Analyzed:	08/01/22	Data File:	207447-01 x5.189
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	20.0

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-2	Client:	Bluestone Environmental NW
Date Received:	07/26/22	Project:	Auburn VW, F&BI 207447
Date Extracted:	08/03/22	Lab ID:	207447-02 x5
Date Analyzed:	08/03/22	Data File:	207447-02 x5.151
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	58.1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-3	Client:	Bluestone Environmental NW
Date Received:	07/26/22	Project:	Auburn VW, F&BI 207447
Date Extracted:	08/03/22	Lab ID:	207447-03 x5
Date Analyzed:	08/03/22	Data File:	207447-03 x5.152
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	14.3

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-4	Client:	Bluestone Environmental NW
Date Received:	07/26/22	Project:	Auburn VW, F&BI 207447
Date Extracted:	07/27/22	Lab ID:	207447-04 x10
Date Analyzed:	08/01/22	Data File:	207447-04 x10.056
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	11.4

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-5	Client:	Bluestone Environmental NW
Date Received:	07/26/22	Project:	Auburn VW, F&BI 207447
Date Extracted:	08/03/22	Lab ID:	207447-05 x5
Date Analyzed:	08/03/22	Data File:	207447-05 x5.153
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	35.4

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-DUPA	Client:	Bluestone Environmental NW
Date Received:	07/26/22	Project:	Auburn VW, F&BI 207447
Date Extracted:	08/03/22	Lab ID:	207447-06 x5
Date Analyzed:	08/03/22	Data File:	207447-06 x5.154
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	11.5

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	NA	Project:	Auburn VW, F&BI 207447
Date Extracted:	07/28/22	Lab ID:	I2-511 mb
Date Analyzed:	07/28/22	Data File:	I2-511 mb.046
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	NA	Project:	Auburn VW, F&BI 207447
Date Extracted:	08/03/22	Lab ID:	I2-526 mb
Date Analyzed:	08/03/22	Data File:	I2-526 mb.116
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-1	Client:	Bluestone Environmental NW
Date Received:	07/26/22	Project:	Auburn VW, F&BI 207447
Date Extracted:	08/01/22	Lab ID:	207447-01
Date Analyzed:	08/01/22	Data File:	207447-01.192
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	17.8

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-2	Client:	Bluestone Environmental NW
Date Received:	07/26/22	Project:	Auburn VW, F&BI 207447
Date Extracted:	08/03/22	Lab ID:	207447-02 x5
Date Analyzed:	08/03/22	Data File:	207447-02 x5.145
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	55.6

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-3	Client:	Bluestone Environmental NW
Date Received:	07/26/22	Project:	Auburn VW, F&BI 207447
Date Extracted:	08/03/22	Lab ID:	207447-03 x5
Date Analyzed:	08/03/22	Data File:	207447-03 x5.146
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	16.2

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-4	Client:	Bluestone Environmental NW
Date Received:	07/26/22	Project:	Auburn VW, F&BI 207447
Date Extracted:	08/01/22	Lab ID:	207447-04 x10
Date Analyzed:	08/01/22	Data File:	207447-04 x10.182
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	11.1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-5	Client:	Bluestone Environmental NW
Date Received:	07/26/22	Project:	Auburn VW, F&BI 207447
Date Extracted:	08/03/22	Lab ID:	207447-05 x5
Date Analyzed:	08/03/22	Data File:	207447-05 x5.147
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	34.5

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-DUPA	Client:	Bluestone Environmental NW
Date Received:	07/26/22	Project:	Auburn VW, F&BI 207447
Date Extracted:	08/03/22	Lab ID:	207447-06 x5
Date Analyzed:	08/03/22	Data File:	207447-06 x5.148
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	11.9

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	NA	Project:	Auburn VW, F&BI 207447
Date Extracted:	08/03/22	Lab ID:	I2-527 mb
Date Analyzed:	08/03/22	Data File:	I2-527 mb.083
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	NA	Project:	Auburn VW, F&BI 207447
Date Extracted:	08/01/22	Lab ID:	I2-519 mb
Date Analyzed:	08/01/22	Data File:	I2-519 mb.141
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

Date of Report: 08/08/22
Date Received: 07/26/22
Project: Auburn VW, F&BI 207447

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	108	108	63-142	0

Date of Report: 08/08/22
Date Received: 07/26/22
Project: Auburn VW, F&BI 207447

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 207468-07 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<1	98	102	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	92	80-120

Date of Report: 08/08/22
Date Received: 07/26/22
Project: Auburn VW, F&BI 207447

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 207447-04 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	11.4	95	91	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	95	80-120

Date of Report: 08/08/22
Date Received: 07/26/22
Project: Auburn VW, F&BI 207447

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 207416-01 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	10.6	85	84	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	97	80-120

Date of Report: 08/08/22
Date Received: 07/26/22
Project: Auburn VW, F&BI 207447

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 207489-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	22.9	126 b	126 b	75-125	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	91	80-120

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

207447

SAMPLE CHAIN OF CUSTODY

7/26/22 [redacted]

E03/A15/VW4

Report To DAN HATCH & HALEY CARTER

Company BLUESTONE

Address

City, State, ZIP

Phone Email danh@bluestonenw.com

SAMPLERS (signature)

PROJECT NAME Auburn VW

PO #

REMARKS

INVOICE TO

Project specific RLs? - Yes / No

Page # 1 of 1

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	T&D Arsenic				Notes
MW-1	01 A-6	7/26/22	850	W	7	X							X				
MW-2	02	↓	820	↓	↓	X							X				
MW-3	03	↓	1015	↓	↓	X							X				
MW-4	04	↓	940	↓	↓	X							X				
MW-5	05	↓	920	↓	↓	X							X				
MW-DUPA	06 ↓	↓	2400	↓	↓	X							X				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	HALEY CARTER	BLUESTONE	7/26/22	
Received by:	NHUT TRUONG	F+BI	7/26/22	17 05
Relinquished by:				
Received by:		Samples received at	2 °C	

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

July 28, 2022

Dan Hatch, Project Manager
Bluestone Environmental NW
20204 SE 284th St
Kent, WA 98042

Dear Mr Hatch:

Included are the results from the testing of material submitted on July 21, 2022 from the Auburn VW BE-0107-D, F&BI 207331 project. There are 14 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Carter
BST0728R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on July 21, 2022 by Friedman & Bruya, Inc. from the Bluestone Environmental NW Auburn VW BE-0107-D, F&BI 207331 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Bluestone Environmental NW
207331 -01	B-7-3
207331 -02	B-7-5
207331 -03	B-7-8
207331 -04	B-8-3
207331 -05	B-8-5
207331 -06	B-8-8
207331 -07	B-9-3
207331 -08	B-9-5
207331 -09	B-9-8
207331 -10	B-10-3
207331 -11	B-10-5
207331 -12	B-10-6
207331 -13	B-10-8
207331 -14	B-11-3
207331 -15	B-11-5
207331 -16	B-11-8
207331 -17	B-12-3
207331 -18	B-12-5
207331 -19	B-12-8
207331 -20	B-13-3
207331 -21	B-13-5
207331 -22	B-13-8
207331 -23	B-14-3
207331 -24	B-14-5
207331 -25	B-14-8

All quality control requirements were acceptable.

Date of Report: 07/28/22
Date Received: 07/21/22
Project: Auburn VW BE-0107-D, F&BI 207331
Date Extracted: 07/22/22
Date Analyzed: 07/22/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 56-165)
B-7-3 207331-01	<50	<250	107
B-7-5 207331-02	<50	<250	100
B-8-3 207331-04	<50	<250	103
B-8-5 207331-05	<50	<250	101
B-13-3 207331-20	<50	<250	104
B-13-5 207331-21	<50	<250	107
B-14-3 207331-23	<50	<250	101
B-14-5 207331-24	<50	<250	100
Method Blank 02-1825 MB	<50	<250	90

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-9-3	Client:	Bluestone Environmental NW
Date Received:	07/21/22	Project:	Auburn VW BE-0107-D
Date Extracted:	07/25/22	Lab ID:	207331-07 1/5
Date Analyzed:	07/26/22	Data File:	072616.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	80	39	103
Phenol-d6	91	48	109
Nitrobenzene-d5	84	23	138
2-Fluorobiphenyl	93	50	150
2,4,6-Tribromophenol	99	40	127
Terphenyl-d14	103	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-9-5	Client:	Bluestone Environmental NW
Date Received:	07/21/22	Project:	Auburn VW BE-0107-D
Date Extracted:	07/25/22	Lab ID:	207331-08 1/5
Date Analyzed:	07/26/22	Data File:	072617.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	70	39	103
Phenol-d6	84	48	109
Nitrobenzene-d5	82	23	138
2-Fluorobiphenyl	89	50	150
2,4,6-Tribromophenol	60	40	127
Terphenyl-d14	98	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	0.014
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-10-3	Client:	Bluestone Environmental NW
Date Received:	07/21/22	Project:	Auburn VW BE-0107-D
Date Extracted:	07/25/22	Lab ID:	207331-10 1/5
Date Analyzed:	07/26/22	Data File:	072607.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	78	39	103
Phenol-d6	88	48	109
Nitrobenzene-d5	85	23	138
2-Fluorobiphenyl	97	50	150
2,4,6-Tribromophenol	93	40	127
Terphenyl-d14	102	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-10-6	Client:	Bluestone Environmental NW
Date Received:	07/21/22	Project:	Auburn VW BE-0107-D
Date Extracted:	07/25/22	Lab ID:	207331-12 1/5
Date Analyzed:	07/26/22	Data File:	072608.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	75	39	103
Phenol-d6	86	48	109
Nitrobenzene-d5	82	23	138
2-Fluorobiphenyl	90	50	150
2,4,6-Tribromophenol	96	40	127
Terphenyl-d14	98	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.013
2-Methylnaphthalene	0.042
1-Methylnaphthalene	0.029
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-11-3	Client:	Bluestone Environmental NW
Date Received:	07/21/22	Project:	Auburn VW BE-0107-D
Date Extracted:	07/25/22	Lab ID:	207331-14 1/5
Date Analyzed:	07/26/22	Data File:	072609.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	80	39	103
Phenol-d6	90	48	109
Nitrobenzene-d5	86	23	138
2-Fluorobiphenyl	95	50	150
2,4,6-Tribromophenol	99	40	127
Terphenyl-d14	104	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-11-5	Client:	Bluestone Environmental NW
Date Received:	07/21/22	Project:	Auburn VW BE-0107-D
Date Extracted:	07/25/22	Lab ID:	207331-15 1/5
Date Analyzed:	07/26/22	Data File:	072610.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	70	39	103
Phenol-d6	84	48	109
Nitrobenzene-d5	82	23	138
2-Fluorobiphenyl	90	50	150
2,4,6-Tribromophenol	51	40	127
Terphenyl-d14	100	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-12-3	Client:	Bluestone Environmental NW
Date Received:	07/21/22	Project:	Auburn VW BE-0107-D
Date Extracted:	07/25/22	Lab ID:	207331-17 1/5
Date Analyzed:	07/26/22	Data File:	072611.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	77	39	103
Phenol-d6	86	48	109
Nitrobenzene-d5	83	23	138
2-Fluorobiphenyl	96	50	150
2,4,6-Tribromophenol	95	40	127
Terphenyl-d14	100	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B-12-5	Client:	Bluestone Environmental NW
Date Received:	07/21/22	Project:	Auburn VW BE-0107-D
Date Extracted:	07/25/22	Lab ID:	207331-18 1/5
Date Analyzed:	07/26/22	Data File:	072612.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	70	39	103
Phenol-d6	84	48	109
Nitrobenzene-d5	78	23	138
2-Fluorobiphenyl	90	50	150
2,4,6-Tribromophenol	85	40	127
Terphenyl-d14	96	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	0.065
Anthracene	0.011
Fluoranthene	0.12
Pyrene	0.14
Benz(a)anthracene	0.068
Chrysene	0.069
Benzo(a)pyrene	0.090
Benzo(b)fluoranthene	0.075
Benzo(k)fluoranthene	0.027
Indeno(1,2,3-cd)pyrene	0.033
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	0.028

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Bluestone Environmental NW
Date Received:	Not Applicable	Project:	Auburn VW BE-0107-D
Date Extracted:	07/25/22	Lab ID:	02-1830 mb 1/5
Date Analyzed:	07/25/22	Data File:	072505.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	84	24	111
Phenol-d6	93	37	116
Nitrobenzene-d5	80	38	117
2-Fluorobiphenyl	96	45	117
2,4,6-Tribromophenol	102	11	158
Terphenyl-d14	119	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Date of Report: 07/28/22
Date Received: 07/21/22
Project: Auburn VW BE-0107-D, F&BI 207331

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 207357-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	106	112	63-146	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	122	79-144

Date of Report: 07/28/22
Date Received: 07/21/22
Project: Auburn VW BE-0107-D, F&BI 207331

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 207385-02 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	<0.01	78	79	34-118	1
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	82	83	29-130	1
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	82	83	37-119	1
Acenaphthylene	mg/kg (ppm)	0.83	0.034	83	83	45-128	0
Acenaphthene	mg/kg (ppm)	0.83	<0.01	85	85	36-125	0
Fluorene	mg/kg (ppm)	0.83	0.032	85	84	48-121	1
Phenanthrene	mg/kg (ppm)	0.83	0.35	46 b	46 b	50-150	0 b
Anthracene	mg/kg (ppm)	0.83	0.063	82	80	50-150	2
Fluoranthene	mg/kg (ppm)	0.83	0.31	57 b	56 b	50-150	2 b
Pyrene	mg/kg (ppm)	0.83	0.40	45 b	45 b	50-150	0 b
Benz(a)anthracene	mg/kg (ppm)	0.83	0.16	72	73	50-150	1
Chrysene	mg/kg (ppm)	0.83	0.17	68 b	68 b	50-150	0 b
Benzo(a)pyrene	mg/kg (ppm)	0.83	0.16	76	75	50-150	1
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	0.13	79	80	50-150	1
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	0.045	87	88	50-150	1
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	0.079	91	83	41-134	9
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	0.015	97	90	44-130	7
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	0.075	86	78	33-131	10

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Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	78	58-108
2-Methylnaphthalene	mg/kg (ppm)	0.83	81	67-108
1-Methylnaphthalene	mg/kg (ppm)	0.83	81	66-107
Acenaphthylene	mg/kg (ppm)	0.83	90	70-130
Acenaphthene	mg/kg (ppm)	0.83	89	66-112
Fluorene	mg/kg (ppm)	0.83	94	67-117
Phenanthrene	mg/kg (ppm)	0.83	88	70-130
Anthracene	mg/kg (ppm)	0.83	90	70-130
Fluoranthene	mg/kg (ppm)	0.83	91	70-130
Pyrene	mg/kg (ppm)	0.83	87	70-130
Benz(a)anthracene	mg/kg (ppm)	0.83	91	70-130
Chrysene	mg/kg (ppm)	0.83	90	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	91	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	90	69-125
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	92	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	106	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	109	67-128
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	107	64-127

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

207331

SAMPLE CHAIN OF CUSTODY

07-21-22 VSB3/A07

Page # 1 of 3

Report To DAN HATCH & HALEY CARTER

Company BLUESTONE

Address

City, State, ZIP

Phone Email danh@bluestonenw.com

SAMPLERS (signature)

PROJECT NAME Auburn VW

PO # BE-0107-D

REMARKS

INVOICE TO Bud Clary

Project specific RLs? - Yes / No

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082				Notes
B-7-3	01 A-E	7/20/22	845	S	5	X										
B-7-5	02		850			X										
B-7-8	03		855													
B-8-3	04		910			X										
B-8-5	05		915			X										
B-8-8	06		920													
B-9-3	07		935								X					
B-9-5	08		940								X					
B-9-8	09		945													
B-10-3	10	↓	1000	↓	↓						X					

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	HALEY CARTER	BLUESTONE	7/21/22	800
Received by:	Ann WBruya	FBB	7/21/22	0815
Relinquished by:				
Received by:				

Samples received at 5 °C

207331

SAMPLE CHAIN OF CUSTODY

07-21-22

Report To DAN HATCH & HALEY CARTER

Company BLUESTONE

Address

City, State, ZIP

Phone Email danh@bluestonenw.com

SAMPLERS (*signature*)

PROJECT NAME	PO #
Auburn VW	BE-0107-D

REMARKS	INVOICE TO
Project specific RLs? - Yes / No	Bud Clary

Page # 2 of 3

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082					Notes
B-10-5	11 A-E	7/20/22	1005	S	5												
B-10-6	12		1007								X						
B-10-8	13		1010														
B-11-3	14		1025								X						
B-11-5	15		1030								X						
B-11-8	16		1035														
B-12-3	17		1050								X						
B-12-5	18		1055								X						
B-12-8	19		1100														
B-13-3	20		1210			X											

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	HALEY CARTER	BLUESTONE	7/21/22	800
Received by:	Ann Wbrya	F&B	7/21/22	0815
Relinquished by:				
Received by:		Samples received at 5 °C		

207331

SAMPLE CHAIN OF CUSTODY

07-21-22

Report To DAN HATCH & HALEY CARTER

Company BLUESTONE

Address

City, State, ZIP

Phone Email danh@bluestonenw.com

SAMPLERS (signature)

PROJECT NAME Auburn W

PO # BE-0107-D

REMARKS

INVOICE TO Bud Clary

Project specific RLs? - Yes / No

Page # 3 of 3

TURNAROUND TIME

☒ Standard turnaround

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Archive samples

☐ Other

Default: Dispose after 30 days

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082					Notes
B-13-5	21 A-E	7/20/22	1215	S	5	X											
B-13-8	22		1220														
B-14-3	23		1240			X											
B-14-5	24		1245			X											
B-14-8	25		1250														

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	HALEY CARTER	BLUESTONE	7/21/22	800
Received by:	Ann W Bruya	F&B	7/21/22	0815
Relinquished by:				
Received by:		Samples received at 5 °C		