CONVERSE CONSULTANTS

1st Quarter 2023 Remedial Action Operation and Monitoring Report

Dryclean US
Canyon Park Place Shopping Center
22833 Bothell Everett Highway
Bothell, Washington 98021

Converse Project No. 17-42-200-07
Cleanup Site ID No.: 1629
Facility Site ID No.: 5125580
April 28, 2023

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April 28, 2023

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Subject: **REMEDIAL ACTION OPERATION AND MONITORING (O&M) REPORT 2023, 1st Quarter**
Dryclean US - Canyon Park Place Shopping Center
22833 Bothell Everett Highway
Bothell, Washington 98021
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Mr. Avila:

Converse Consultants (Converse) is pleased to submit the attached Remedial Action Operation and Monitoring (O&M) Report that summarizes the operation and monitoring activities conducted at the Canyon Park Place Shopping Center (Site) for the current reporting period.

We appreciate the opportunity to be of service. Should you have any questions or comments regarding this report, please contact Michael Van Fleet at (909) 796-0544 or Norman Eke at (626) 930-1260.

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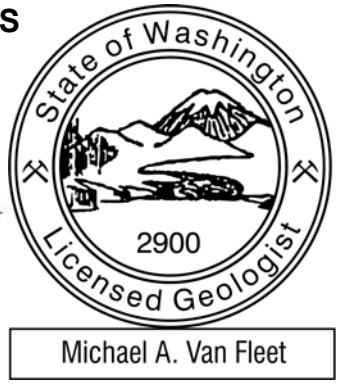

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1.0 INTRODUCTION

This 1st *Quarter 2023 Remedial Action Operation and Monitoring (O&M) Report* has been prepared by Converse Consultants (Converse), on behalf of DS Canyon Park, L.P. (Client), for the remedial activities conducted relative to the Dryclean US facility at 22833 Bothell Everett Highway, within the Canyon Park Place Shopping Center (Site). The location of the Site is shown on **Figure 1**, Site Vicinity. Details of the Site layout are shown on **Figure 2**, Site Plan.

In 2019 the Site was enrolled in the Washington State Department of Ecology (Ecology) Voluntary Cleanup Program (VCP). The Site is identified as Facility No. 5125580, and VCP Project No. NW3229. All cleanup activities discussed herein have been conducted under the general oversight of Ecology, and in accordance with the Remedial Action Workplan (RAW), prepared by Converse and dated April 20, 2020, which was approved by Ecology in a letter dated September 23, 2020.

1.1 BACKGROUND

A review of historic records showed that the Canyon Park Place Shopping Center was developed in 1992. The shopping center has several retail tenants including Dryclean-US, QFC grocery store, Bartell Drugs, Baskin Robbins, AT&T, and the Recology Store. Commercial development exists east, west, and north of the shopping center. A residential development exists to the south.

Dryclean-US has been utilized as a dry-cleaning facility since the shopping center was constructed in 1992. A tetrachloroethene (PCE) based cleaning machine is believed to have been used onsite from 1992 until sometime between 2011 and 2017. The Site is currently operating a Union HL840 machine that uses a hydrocarbon-based solvent (Green Earth).

Previous investigations at the Site have identified elevated concentrations of chlorinated volatile organic compounds (CVOCs) in shallow subsurface soil gas and groundwater in the vicinity of the dry cleaning facility that exceed Model Toxics Control Act (MTCA) Method B and A screening levels for soil vapor and groundwater, respectively.

Several environmental assessments have been conducted at the Site by various consultants beginning in 2005, and have included the collection and analysis of soil, soil vapor, groundwater, and indoor air samples. Remedial activities have also previously been completed at the Site. Locations of current and prior sample points and wells are presented on **Figure 3**, Well and Sample Locations.

Two (2) separate remedial excavation events have occurred at the Site (one inside the dry-cleaning facility and one behind the dry-cleaning facility) to remove PCE-impacted soil (October 2007 and September 2009). A total of 70 cubic yards of soil have been

excavated and disposed of at off-site facilities, but residual concentrations of PCE in soil samples in excess of the Ecology screening level of 50 micrograms per kilogram (ug/kg) were reported to have been left in place. Impacts on groundwater were attempted to be remediated through the application of peroxide (November 2009), but these efforts were determined to not have been effective. Ecology has not yet issued a No Further Action (NFA) letter for the Site relative to soil or groundwater contamination.

A total of three (3) monitoring wells (MW-1 through MW-3) have been constructed and currently exist at the site, and grab samples of groundwater have been collected from various boring locations at different times. Groundwater has generally been encountered at depths of approximately 4 feet to 8 feet below ground surface (bgs), and the general direction of flow regionally is understood to be towards the north. The initial water-bearing zone consists of silty sand with gravel that extends to an approximate depth of 12 feet bgs. At 12 feet bgs the lithology was reported to change to clayey silt that extended to at least 20 feet bgs, and these sediments are considered to be a non-water-bearing confining layer, that has likely prevented further downward migration of contaminants.

The analytical results of prior assessments have indicated that groundwater behind the dry cleaner facility is impacted with PCE at concentrations greater than the screening level of 5 micrograms per liter (ug/L) with a maximum reported concentration of 56 ug/L. Since 2005 no concentrations of PCE have been detected above the screening level in samples collected down-gradient (in front) of the dry cleaners. The extent of the groundwater impacted with PCE in excess of the screening level prior to beginning remedial activities was therefore believed to be limited to an approximate radius of 100 to 200 feet centered on the location of the dry-cleaning machine.

Several assessments have been completed at the Site since the last remedial activities in 2009, including a remedial pilot study. The results of these assessments are discussed in detail in the Pilot Study Report prepared by Moore Twining Associates (MTA), dated July 5, 2017. Based on the results of these prior assessments, it appears that a potential risk to the health of Site occupants exists based on the potential for concentrations of VOCs beneath the Site to migrate up through the building slab and accumulate in the indoor air where they could be inhaled (vapor intrusion). Concentrations of PCE, trichloroethylene (TCE), chloroform, and dichlorodifluoromethane (Freon 12) have been reported at concentrations in excess of their respective MTCA Method B screening levels for sub-slab vapor and/or deep soil vapor.

Indoor air samples collected in 2011 from the cleaners and other nearby suites were analyzed for VOCs, and maximum reported concentrations of benzene, chloroform, PCE and TCE (1.388, 2.649, 1.162, and 0.271 ug/m^3, respectively) were in excess of their MTCA Method B screening levels at that time (0.32, 0.11, 0.42, and 0.1 ug/m^3, respectively). It was noted that the measured indoor air concentrations of each of these compounds were below the OSHA permissible exposure limits (PELs) for workers. Although the measured indoor air concentrations of all of these compounds were above their MTCA values, it was concluded that no adverse effects to workers were expected

since most of the concentrations were comparable to ambient air concentrations in urban areas. Converse notes that in 2015 the Method B screening levels for PCE and TCE were revised and that the maximum concentrations of these compounds reported in 2011 are less than the current screening levels of 9.6 and 0.33 ug/m^3, respectively.

A Feasibility Study, dated April 9, 2012, was prepared by EMR Incorporated (EMR). In the Feasibility Study, EMR concluded that soil vapor extraction and air sparging (SVE/AS) along with monitored natural attenuation appeared to be the most promising remedial alternative of the remedial options that were evaluated to address VOC impacts to the soil vapor and groundwater.

MTA prepared and implemented a SVE/AS Pilot Test Workplan, and the results of that test were presented in a Pilot Study Report dated July 5, 2017. The following information was presented in the Pilot Study Report:

- Two (2) SVE pilot study events were conducted at the Site. The June 2016 pilot study event was conducted to evaluate soil vapor extraction in native soil; the October 2016 pilot study event was conducted to evaluate vapor extraction from the sub-slab engineered fill below the dry-cleaning tenant suite and the adjacent tenant suites. During a portion of the June 2016 pilot study event, air sparging (AS) was also conducted to evaluate it as a possible option to remediate groundwater.

- Based on pilot study results, it appears that sub-slab vapor extraction successfully mobilized and captured vapor-phase PCE in sub-slab engineered fill below the building at the Site. Based on data collected and observations made during the pilot tests, sub-slab vapor extraction appears to be feasible for the mitigation and control of the observed elevated PCE concentrations in sub-slab and soil vapor at the Site.

- The horizontal sub-slab vapor radius of influence for the area below the dry cleaners and tenant suites west of the dry cleaners is estimated to be 65 feet. Shallow native soils (depths greater than 2 feet bgs) appear to limit the horizontal and vertical extent of vapor extraction. It is assumed that the vertical radius of influence using sub-slab vapor extraction points would be approximately 4 feet bgs.

- The horizontal radius of influence from extraction wells in native soil below the Site appears to have been less than 20 feet.

- A possible footing between the dry-cleaning tenant space and the QFC tenant space may act as a barrier between the sub-slab areas.

- It was recommended that remedial action be implemented at this Site utilizing SVE and AS technologies.

Converse reviewed available documents and determined that further assessment appeared warranted before proceeding with remedial activities. Converse prepared a Workplan dated May 2, 2019 with the objective of delineating the lateral extents of PCE impacts in sub-slab and deeper soil vapor so that the remedial system could be appropriately designed.

The results of this supplemental assessment were presented in a Supplemental Assessment Report dated January 31, 2020. A summary of the results is provided below. The Washington State Department of Ecology MTCA Method B Cleanup Levels were used to evaluate the reported concentrations. Cumulative analytical results from all prior Site assessment activities for indoor/outdoor air, sub-slab soil vapor, soil vapor, and groundwater samples are summarized on **Tables 1, 2, 3** and **4**, respectively. Based on analytical results, the following conclusions were made:

- PCE and TCE were reported at concentrations above their respective Ecology screening levels in the air sample from Dryclean-US. Additionally, the indoor air sample from Recology was reported to have TCE at a concentration that exceeded the Method B screening level, but was less than the Method C (commercial / industrial) screening level. The presence of these compounds in these indoor air samples are suspected to potentially be related to the intrusion of subsurface vapors.

- Benzene and carbon-tetrachloride were reported at concentrations above their respective Ecology screening levels in all five (5) indoor/outdoor air samples. The presence of these analytes in both the indoor and outdoor samples at similar magnitude concentrations suggests that these analytes may be related to regional background levels rather than from vapor intrusion.

- Sub-Slab soil vapor concentration for TCE (12.3 ug/m^3) and benzene (40.1 ug/m^3) below the Dryclean-US tenant space (VMP-16) exceeded their respective Ecology screening levels of 12 ug/m^3 and 11 ug/m^3. Also, the sub-slab concentration of PCE (811 ug/m^3) at Recology (VMP-15), and chloroform (4.69 ug/m^3) at Bartell Drugs (VMP-13) also exceeded their respective Ecology screening levels of 320 and 3.6 ug/m^3. All other reported VOC concentrations in sub-slab samples were below their respective Ecology screening levels.

- Deep soil vapor concentrations for TCE of 39.8 and 118 ug/m^3 at Dryclean-US (VMP-23D) and Recology (VMP-25D), respectively, exceeded the Ecology screening level of 37 ug/m^3. In addition, soil vapor concentrations for benzene of 52.3 and 77.2 ug/m^3 at Recology (VMP-25D) and the exterior location VMP-24D, respectively, also exceeded the Ecology Cleanup level of 32 ug/m^3. Vinyl chloride,

reported at 91.5 ug/m^3 in sample VMP-25D from Recology, was the only other VOC detected in soil vapor samples at a concentration in excess of their Ecology screening levels (28 ug/m^3 for vinyl chloride).

Based on the results of previous assessments conducted at the Site, Converse prepared a Remedial Action Workplan (RAW), dated April 20, 2020, for the implementation of soil vapor extraction (SVE) and air sparging (AS) remedial technologies to remediate concentrations of tetrachloroethene (PCE) and other chlorinated volatile organic compounds (CVOCs) in sub-slab and shallow soil vapors, and groundwater at the Site.

1.2 REMEDIATION OBJECTIVES

Data obtained during previous Site investigations indicated that VOCs are present in shallow subsurface soil gas and groundwater in the vicinity of the dry-cleaning facility at concentrations that exceed MTCA Method B or A screening levels. The objective of the remedial activities is to reduce concentrations of the chlorinated VOCs (CVOCs) beneath the Site that are potentially related to dry cleaning activities, and to ultimately receive unconditional case closure from Ecology.

To achieve this objective, SVE and AS technologies are proposed to be used. One (1) AS well will be employed to transport concentrations of VOCs in the groundwater to the shallow soil vapor. Impacted vapors will be extracted from a total of eight (8) SVE wells installed at the Site and treated using a granular activated carbon (GAC) system. The effectiveness of the remedial activities will be measured through monitoring and sampling of sub-slab and soil vapor monitoring probes and groundwater monitoring wells.

Cleanup at this Site will be implemented under the MTCA regulations, Chapter 173-340 Washington Administrative Code (WAC). MTCA cleanup levels are concentrations of hazardous substances in the environment that are considered sufficiently "protective of human health and the environment". Data obtained during previous investigations indicate that PCE and TCE are the VOCs of primary concern. Other CVOCs that have historically been detected in samples at concentrations in excess of their MTCA cleanup levels which may potentially be associated with releases from drycleaning activities include vinyl chloride and chloroform. Although benzene, and Freon 12 have previously been detected in a limited number of samples at concentrations in excess of Method B screening levels, they have all been less than Method C screening levels, and they are not considered to be chemicals of concern (COCs) related to onsite releases from drycleaning activities.

The MTCA cleanup levels will be used to evaluate the effectiveness of the remediation activities with regard to the identified COCs. For sub-slab and soil vapor samples the MTCA Method B screening levels will be used, and for groundwater the MTCA Method A screening levels be used (Method B level to be used for chloroform since there is not Method A value). The current Cleanup Goals (CGs) are presented in the table below.

COC	Sub-Slab Soil Vapor Cleanup Levels (ug/m^3)	Soil Vapor Cleanup Levels (ug/m^3)	Groundwater Cleanup Levels (ug/L)	
			Drinking Water	Vapor Intrusion
Tetrachloroethene (PCE)	320	960	5	24
Trichloroethene (TCE)	11	33	4	1.4
Vinyl Chloride	9.4	28	0.29	0.35
Chloroform	3.6	11	14	1.2
Benzene	11	32	5	2.4

All vapor concentrations in units of micrograms per cubic meter (ug/m^3), and water concentration in units of micrograms per liter (ug/L)

1.3 SVE EQUIPMENT AND PROCESS DESCRIPTION

Converse installed a total of four (4), horizontal soil vapor extraction (HSVE) wells to address sub-slab VOCs, and four (4) vertical SVE wells to address the VOCs in shallow soil vapor. The locations of the new HSVE and SVE wells are shown on **Figure 3**. It is noted that SVE wells previously installed by others (SVE-1 through SVE-3) are not currently being utilized.

Sub-Slab SVE Wells

Four (4) horizontal sub-slab wells, HSVE-1, HSVE-2, HSVE-3, and HSVE-4 were installed in the rear of the Dry-clean USA, Recology, Baskin Robins, and QFC suites. The horizontal wells were constructed in accordance with the methods outlined in the RAW. Each of the well casing extend approximately 2 feet beyond the rear wall of the suites, and are located approximately 6-inches below the bottom of the floor slab.

All four (4) sub-slab horizontal wells were connected into a single above-ground manifold constructed of 2-inch diameter SCH 80 PVC pipe that was stubbed at the system compound.

Shallow Soil Vapor SVE Wells

Four (4) shallow soil vapor SVE wells were installed at the Site. These four (4) wells (SVE-4 through SVE-7) were installed vertically inside, or in front of, the Dryclean-US suite. The well casing at each location extends approximately 5 feet below the top of the floor, with the bottom 2-feet of the casing being perforated.

Soil-vapor extraction wells SVE-4, SVE-5, and SVE-6 were connected into a single 2-inch diameter pipe above ground within the cleaners. The manifold piping extended through a hole in a vent on the rear wall of the cleaners where it was then extended to the SVE equipment compound. Well SVE-7 was connected to the SVE equipment compound via

a single 2-inch diameter SCH 80 PVC pipe run above-ground from the well and over the roof of the Dryclean-USA suite.

Remediation System

An SVE system is being used to extract VOC-contaminated vapors from the subsurface. The extracted VOC-contaminated vapor stream is passed through two (2) sets of granular activated carbon (GAC) vessels where the VOCs are stripped from the vapor before being discharged to the atmosphere through a vent stack. The system is operated with a maximum total flow rate of approximately 200 SCFM, and under a permit obtained from the Puget Sound Clean Air Agency (PSCAA).

An air compressor capable of producing up to 15 SCFM air flow at a pressure of 90 psi is being used to treat VOC-impacted groundwater. The air from the compressor is injected through Well AS-1.

All of the remedial system equipment is housed in a secure shipping container.

2.0 SCOPE OF SERVICE

The remedial system shut down around November 28, 2022 due to an issue with the SVE motor, and it currently remains off pending the completion of repair activities. The field activities completed the reporting period (January through March 2023) included the collection of samples from select sub-slab and soil vapor probes and groundwater monitoring wells. Other typical routine O&M activities which were not conducted due to the system being off for the entirety of the reporting period include evaluation of remedial system equipment, monitoring of flow rates and vacuum levels in extraction well lines, field reading of VOC concentrations using a PID from sample ports on extraction well and system process lines. The activities that were completed were done so in general accordance with the approved RAW dated April 20, 2020.

2.1 SYSTEM OPERATION AND MONITORING

System monitoring typically includes the evaluation of flow measurements, vacuum readings, and VOC concentrations (measured using a PID calibrated to Hexane) from designated locations on the extraction well and treatment system lines. The system is designed to run on a continuous basis, 24-hours per day, and when operating it is inspected and monitored on at least a bi-weekly basis.

2.2 QUARTERLY SAMPLING AND ANALYSIS

At the end of this quarter with the system having been off for approximately 4 months samples were collected from select monitoring probes and extraction wells. Results were compared to baseline concentrations to evaluate the effectiveness of the systems in having extracted VOCs from the Site, and to the results of the prior quarter to evaluate the extent that concentrations rebound following the temporary system shutdown. The sampling and analysis procedures are discussed below, and the analytical results are discussed in **Section 2.3**.

2.2.1 SVE System Sampling and Analysis

Based on the findings of the samples collected from the influent and effluent of the GAC treatment system in May 2022 it was determined that emissions from the system were in compliance with Condition 10 of the PSCAA permit, and that it should therefore be permissible to operate the system without control devices. Although extracted vapors are continuing to be processed through the GAC system and monitored with a PID, PSCAA staff confirmed in an email dated August 25, 2022 that it is acceptable to discontinue routine collection of samples for laboratory analysis. Analytical results of the historic GAC samples are presented on **Table 5**.

2.2.2 Air Sparge System

A compressor unit for the air sparge system is set to continuously supply air into air sparge well AS-1. The rate of air being injected had been measured to be approximately 3 to 4 SCFM. The compressor was turned off until the SVE system can be reactivated to extact sparged vapors.

2.2.3 Soil Vapor Sampling and Analysis

Quarterly sampling was conducted on March 22 and 23, 2023. In total, 16 vapor samples were collected into 1-liter summa canisters at a flow rate of approximately 200 milliliters per minute. All samples were analyzed for CVOCs in accordance with EPA Method TO-15.

All sampled probes were purged and sampled in general accordance with Ecology's *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remediation* (February 2016).

Prior to purging the probes, a leak check of the fittings was completed by conducting a shut-in test. The shut-in test consists of closing the valve to the probe and then creating a vacuum of approximately 100-inches of water using a pump or syringe. The line was then sealed at the pump end and the vacuum gauge was monitored for approximately 1 minute. A decrease in the vacuum during this period indicates that there is a leak in the line and fittings should be tightened.

Each probe was purged of approximately 3 sample train volumes (approximately 0.1 liters for sub-slab probes, and 0.3 to 0.9 liters for soil vapor probes) prior to sampling. Purging and sampling were generally conducted at a rate of approximately 200 mL/min, although flow rates from some soil vapor probes may have been lower due to tight soil conditions. Leak tests were conducted during the purging and sampling of each probe by placing a liquid (isopropyl alcohol) near the tubing at ground surface, and then analyzing the sample for those tracer compounds. After probes were purged, vapor samples were collected.

2.2.4 Groundwater Sampling and Analysis

On March 22, 2023 groundwater samples were collected from each of the three (3) onsite monitoring wells (MW-1, MW-2, and MW-3). Prior to sampling, the depth to water was gauged to range between depth of 3.35 and 6.87 feet below the top of well casing (TOC). The wells were then purged of a minimum of three well-casing volumes of water (approximately four to five gallons each) using a low-flow rate peristaltic pump equipped with polyethylene tubing. After purging the wells samples were collected directly from the pump discharge and transferred into laboratory-supplied vials appropriate for analysis of volatile organic compounds.

Upon collection, the sample containers were capped, labeled, stored in a chilled container, and delivered under chain of custody documentation to a state of Washing certified analytical laboratory for analysis. Samples were analyzed for VOCs in accordance with EPA Method 8260D.

2.3 ANALYTICAL RESULTS

2.3.1 Sub-Slab Vapor Analytical Results

Four (4) CVOCs; PCE, TCE, cis-1,2-DCE and chloroform were reported in one or more of the analyzed sub-slab vapor samples collected this reporting period. The sub-slab vapor sample results from all sampling events, along with the CGs, are summarized in **Table 2**.

- PCE was reported in 5 of the 9 sub-slab probe samples at concentrations ranging between 77 µg/m^3 and 570 µg/m^3. Two of the reported PCE concentrations exceed the CG of 320 µg/m^3.

- TCE was reported in 4 of the 9 sub-slab probe samples at concentrations ranging from 1.2 to 39 ug/m^3. Two (2) of the reported TCE concentration (VMP-1 and VMP-3) exceeded the CG of 11 µg/m^3.

- Cis-1,2-DCE was reported in 1 of the 9 samples (VMP-3) at a concentration of 13 ug/m^3. This reported concentration is less than the CG of 610 µg/m^3.

- Chloroform was reported in 2 of the 9 samples at concentrations ranging from 0.61 to 1.6 ug/m^3. Thess reported chloroform concentrations are less than the CG of 3.6 µg/m^3.

PCE and TCE concentrations in sub-slab vapor samples are presented on **Figure 4A**.

2.3.2 Soil Vapor Analytical Results

Five (5) CVOCs were reported in one or more of the seven (7) soil vapors samples collected this reporting period; PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and chloroform. The analytical data for soil vapor probes, along with the CGs, are summarized in **Table 3**.

- PCE was reported in 2 of the 7 probes sampled at a maximum concentration of 420 µg/m^3. Both reported PCE concentrations are less than the CG of 960 µg/m^3.

- TCE was reported in 2 of the 7 soil vapor probes sampled at a concentration of 24 and 39 µg/m^3. One reported TCE concentration is greater than the CG of 33 µg/m^3 (VMP-25D).

- cis-1,2-DCE was reported in 1 of the 7 soil vapor probes sampled. The concentration of 19 µg/m^3 in probe VMP-25D is less than the CG of 1,800 µg/m^3.

- trans-1,2-DCE was reported in 1 of the 7 soil vapor probes sampled. The concentration of 24 µg/m^3 in probe VMP-25D is less than the CG of 1,800 µg/m^3.

- Chloroform was reported in 2 of the 7 soil vapor probes sampled at concentrations of 0.48 and 4.8 µg/m^3. All reported conentrations are less than the CG of 11 µg/m^3.

Reported PCE and TCE concentrations in soil vapor samples are presented on **Figure 4B**.

2.3.3 Groundwater Analytical Results

No CVOCs were reported in the groundwater sample collected from down-gradient monitoring wells MW-1 or MW-2.

PCE was the only CVOC detected in the sample from groundwater monitoring well MW-3, which is located behind the cleaners building. The reported PCE concentration of 11 ug/L is greater than the CG for drinking water of 5 ug/L, but less than the CG for vapor intrusion and 24 ug/L.

The analytical data for groundwater samples, along with the CGs, are summarized in **Table 4**.

3.0 DISCUSSION OF FINDINGS

3.1 CHEMICAL PARAMETERS

3.1.1 Monitoring Probe Analytical Results

Prior to beginning remedial activities concentrations of three (3) CVOCs (PCE, TCE, and chloroform) were reported in excess of CGs in 10 of the 16 sub-slab monitoring probes. In the 9 sub-slab vapor probes sampled at the end of the 1st quarter 2023, the same three (3) compounds, along with cis-1,2-DCE, were the only CVOCs detected in any sub-slab vapor samples.

- PCE concentrations have been reduced from a baseline maximum of 7,000 ug/m^3 at VMP-3 down to 570 ug/m^3 at VMP-1. In the approximately 4 months since the remedial system shut down the concentrations of PCE have rebound such that levels in 2 probes (VMP-1 and VMP-3) currently exceed the CG of 320 ug/m^3.
- TCE concentrations have been reduced from a baseline maximum of 690 ug/m^3 at VMP-3 down to 39 ug/m^3 at VMP-3. TCE concentrations in 2 of the nine 9 probes sampled (VMP-1 and VMP-3) remain in excess of the CG of 11 ug/m^3.
- cis-1,2-DCE concentrations have been reduced from a baseline maximum of 480 ug/m^3 at VMP-3 down to 13 ug/m^3 at VMP-3. This concentration in less than the CG of 610 ug/m^3.
- Chloroform concentrations have been reduced from a pre-remediation maximum of 4.69 ug/m^3 at VMP-13 down to 1.6 ug/m^3 at VMP-3. The current maximum concentration is less than the CG of 3.6 ug/m^3.

Prior to beginning remedial activities concentrations of four (4) CVOCs (PCE, TCE, vinyl chloride, and chloroform) were reported in excess of CGs in three (3) soil vapor monitoring probes (VMP-7, VMP-23D, and VMP-25D). Each of these three (3) soil vapor probes were sampled during this monitoring event along with VMP-8, VMP-21D, VMP-22D, and SVE-1, and currently TCE is the only COVC reported in excess of the CGs.

- PCE was reduced from a baseline maximum of 3,100 ug/m^3 down to 420 ug/m^3, which is less than the CG of 960 ug/m^3.
- TCE was reduced form a baseline maximum of 210 ug/m^3 down to 39 ug/m^3 at location VMP-25D, which slightly exceeds the CG of 33 ug/m^3.
- Chloroform was reduced from a baseline maximum of 38 ug/m^3 down to 4.8 ug/m^3 during this reporting period, which is less than the CG of 11 ug/m^3.
- Vinyl chloride was reduced from a baseline maximum of 170 ug/m^3 down to 0.931 ug/m^3 during this reporting period, which is less than the CG of 28 ug/m^3.

- All other reported CVOC concentrations were initially, and currently remain, less than their respective CGs.

3.1.2 Groundwater Monitoring Well Analytical Results

Prior to beginning remedial activities PCE was the only CVOC detected in any of the three (3) onsite groundwater monitoring wells. PCE has historically only ever been detected in well MW-3, which is located behind the cleaners, and has never been detected in either of the two (2) down gradient monitoring wells (MW-1 and MW-2). The concentration of PCE in well MW-3 has been reduced from a baseline concentration of 17 micrograms per liter (ug/L) down to 11 ug/L, which is greater than the CG for drinking water of 5 ug/L, but less than the CG for vapor intrusion and 24 ug/L. The increase from the prior reporting period can be attributed to rebound resulting from the blower system remaining offline.

No other VOCs were reported in any of the groundwater samples collected this reporting period.

3.2 PHYSICAL PARAMETERS

Routine monitoring of the SVE system has found that it has generally been operating as designed. However, the motor of the SVE blower failed in late November 2022, and the system is currently off pending repairs.

The total combined flow rate from all extraction wells, as measured prior to the blower, has ranged from 150 to 200 SCFM with a vacuum level of approximately 10 inches of water. The temperature of vapors extracted from the wells were typically measured to be around 60 degrees Fahrenheit, and were heated by the blower to approximately 175 degrees Fahrenheit prior to entering the carbon units.

The air sparge compressor is configured to supply air into air sparge well AS-1. The rate of air being injected has previously been measured to be approximately 3 to 4 SCFM. However, the air sparge system has been turned off until repairs to the SVE system are complete.

4.0 CONCLUSIONS AND RECOMMENDATION

Based on the data gathered during this reporting period (2023, Q1), Converse presents the following conclusions:

- The SVE/AS system is temporarily down pending repairs to the SVE blower motor. It will be restored to normal operation once the repairs are completed. Prior to shutting down the SVE/AS system appears to have been functioning as planned.
- Field monitored concentrations of VOCs in the carbon system influent and effluent indicate that vapors were being sufficiently treated, and that emissions were in compliance with PSCAA permit requirements.
- Analytical results of the quarterly groundwater samples indicate that the AS system had reduced the concentration of PCE to levels less than the CG, but since the system shut down concentrations have increased to be greater than the CG for drinking water.
- Analytical results of quarterly vapor samples indicate that the SVE system has significantly reduced concentrations of CVOCs in the subsurface. PCE and TCE are the only compounds currently reported in excess of their CGs, and the exceedances are limited to the rear portions of the Cleaners and adjoining suites.

Based on the results of monitoring and testing activities performed to date at the Site, the SVE/AS system appears to have been operating as designed. Therefore, it is recommended that the SVE/AS system continue to be operated and monitored as outlined in the RAW once repairs to the SVE blower motor are completed.

5.0 RELIANCE

This report is for the sole benefit and exclusive use of DS Canyon Park, L.P. in accordance with the terms and conditions of the mutually agreed upon contract. Its preparation has been in accordance with generally accepted environmental practices. No other warranty, either expressed or implied is made. The Scope of Services associated with the report was designed solely in accordance with the objectives, schedule, budget, and risk-management preferences of DS Canyon Park, L.P.

This report should not be regarded as a guarantee that no further contamination, beyond that which could be detected within the scope of this assessment, is present at the Site. Converse makes no warranties or guarantees as to the accuracy or completeness of information provided or complied by others. It is possible to absolutely confirm that no hazardous materials and/or substances exist at the Site. If none are identified as part of a limited scope of work, such a conclusion should not be construed as a guaranteed absence of such materials, but merely the results of the evaluation of the property at the time of the assessment. Also, events may occur after the site visit, which was not found or available to Converse at the time of report preparation, may result in a modification of the conclusions and recommendations presented.

6.0 REFERENCES

Washington State Department of Ecology (Ecology) Model Toxic Control Act (MTCA) 2013, Model Toxics Control Act Cleanup Regulation, Chapter 174-340 WAC, Publication No. 94-06, November 2007, revised 2013.

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Ecology, Opinion Pursuant to WAC 173-340-515(5) on Remedial Action For Dry Clean US, 22833 Bothell Way SE, Suite 114, Bothell, WA 98201, Facility/Site No. 5125580, Cleanup Site ID 1629, VCP No.: NW3229, September 23, 2020.

EMR Incorporated (EMR 2012), Feasibility Study, Dryclean-US, 22833 Bothell-Everett Highway, Bothell, Washington, April 9, 2012

Converse Consultants, Remedial Action Workplan, Dryclean-US, Canyon Park Place Shopping Center, 22833 Bothell Everett Highway, Bothell, Washington 98201

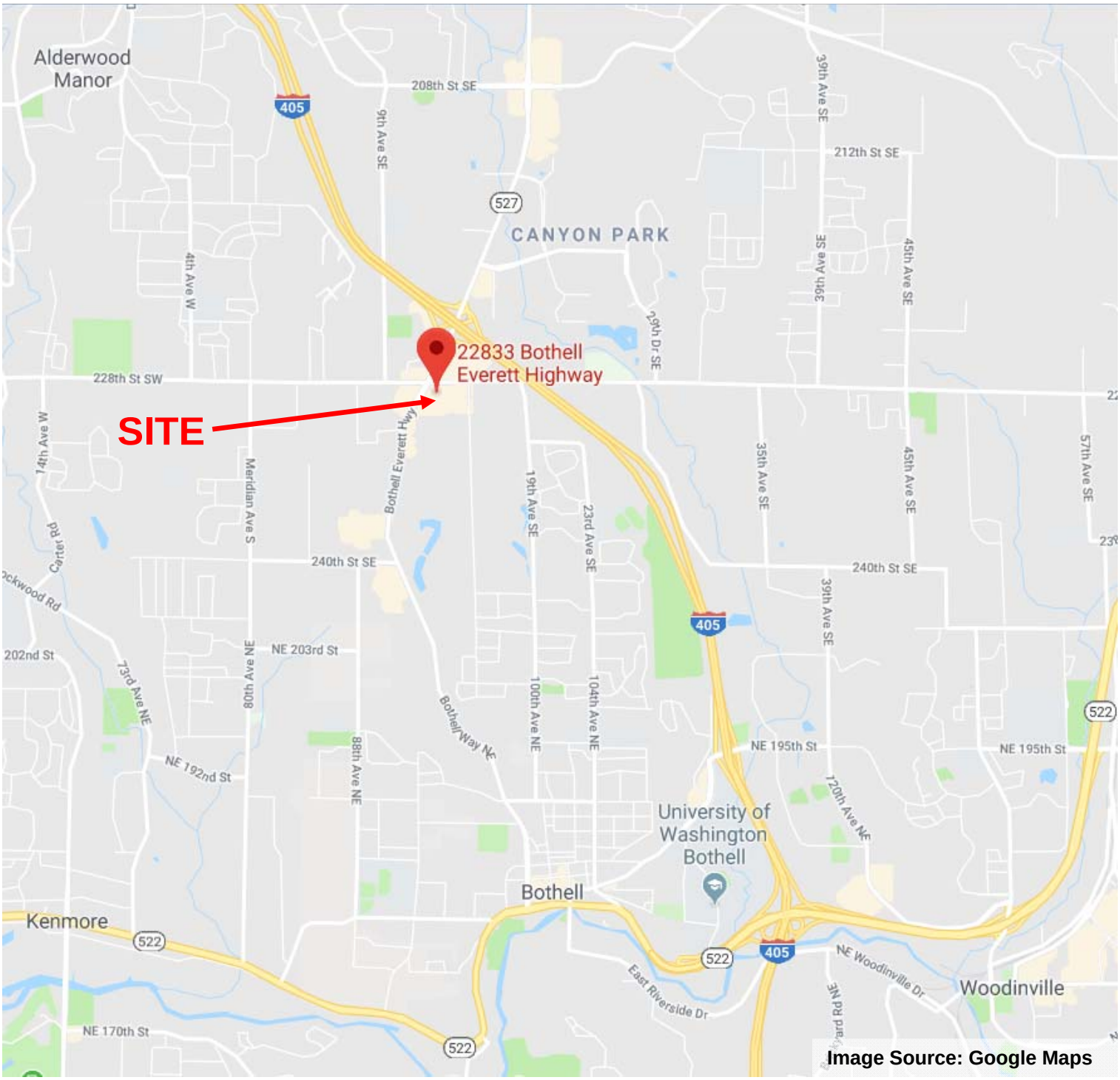
Converse Consultants, Workplan – Soil Vapor and Sub-Slab Vapor Sampling, Dryclean-US – Canon Park Place Shopping Center, May 2, 2019.

Converse Consultants, Workplan – Supplemental Assessment Report, Dryclean-US – Canon Park Place Shopping Center, January 31, 2020.

Moore Twining Associates, Inc., Pilot Study Report, 22833 Bothell-Everett Highway, Bothell, Washington, July 5, 2017.

Figures

Figures



SITE VICINITY

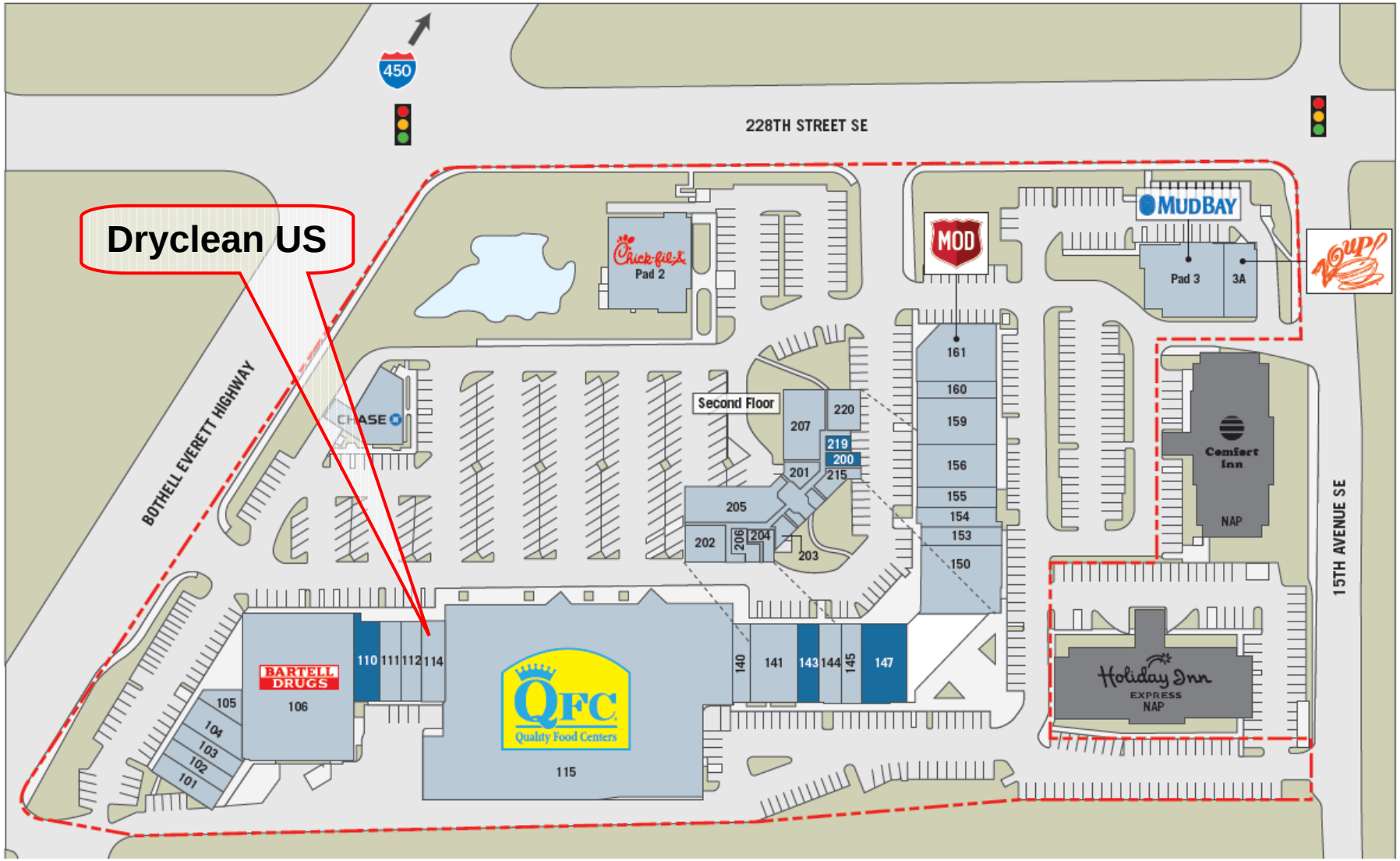
DS Canyon Park, L.P.
Dryclean US - Canyon Park Place Shopping Center
22833 Bothell Everett Highway
Bothell, Washington 98021

Project No:

17-42-200-07

Converse Consultants

FIGURE **1**



SITE PLAN

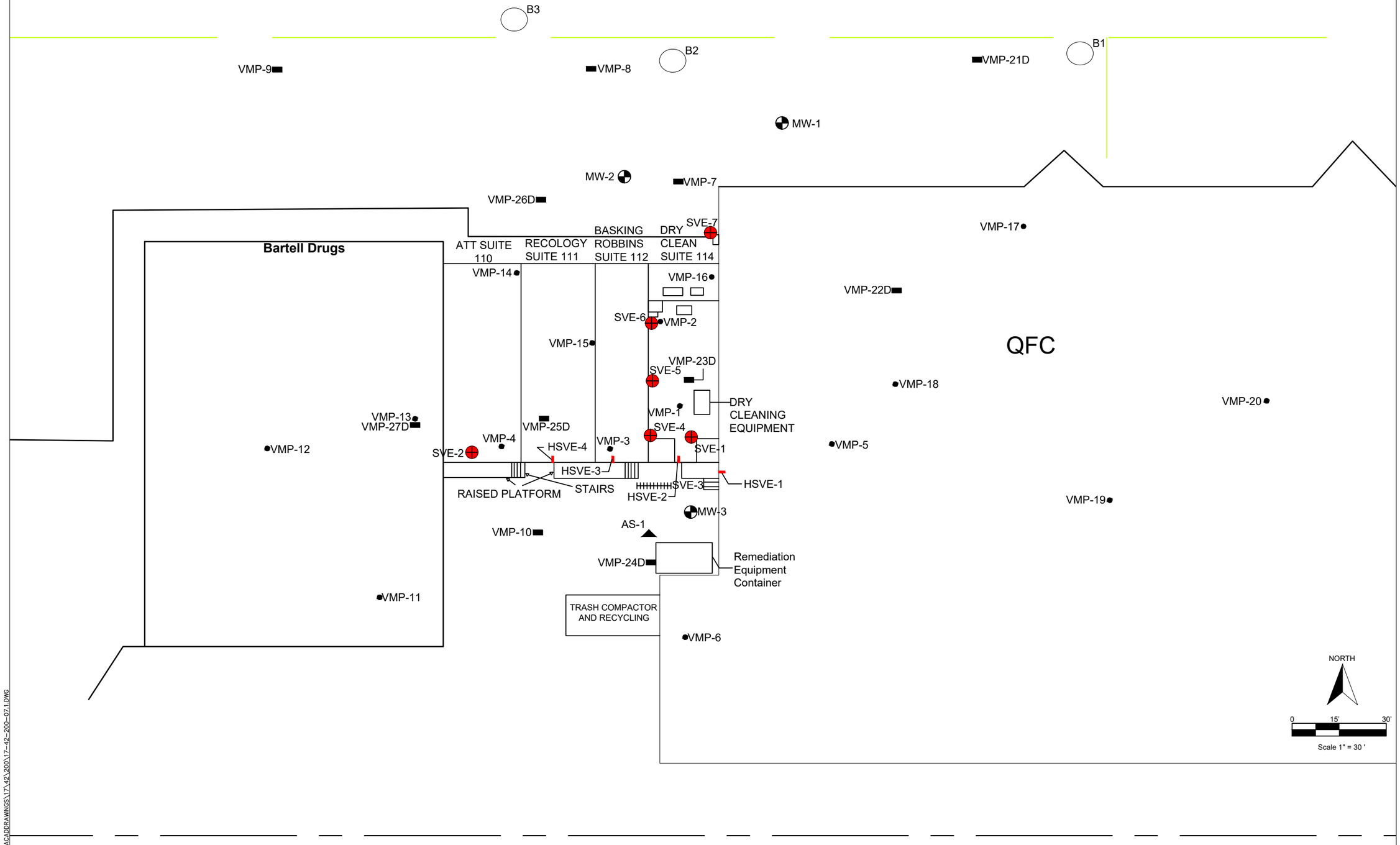
DS Canyon Park, L.P.
Dryclean US - Canyon Park Place Shopping Center
22833 Bothell Everett Highway
Bothell, Washington 98021

Project No:

17-42-200-07

Converse Consultants

FIGURE **2**



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- Vertical SVE Well
- Horizontal SVE Well
- Sub-Slab Vapor Monitoring Probe
- Air Sparge Well
- Soil Vapor Monitoring Probe
- Horizontal SVE Well
- Group Groundwater and Soil Sample Location
- Approximate Location of Sewer Line

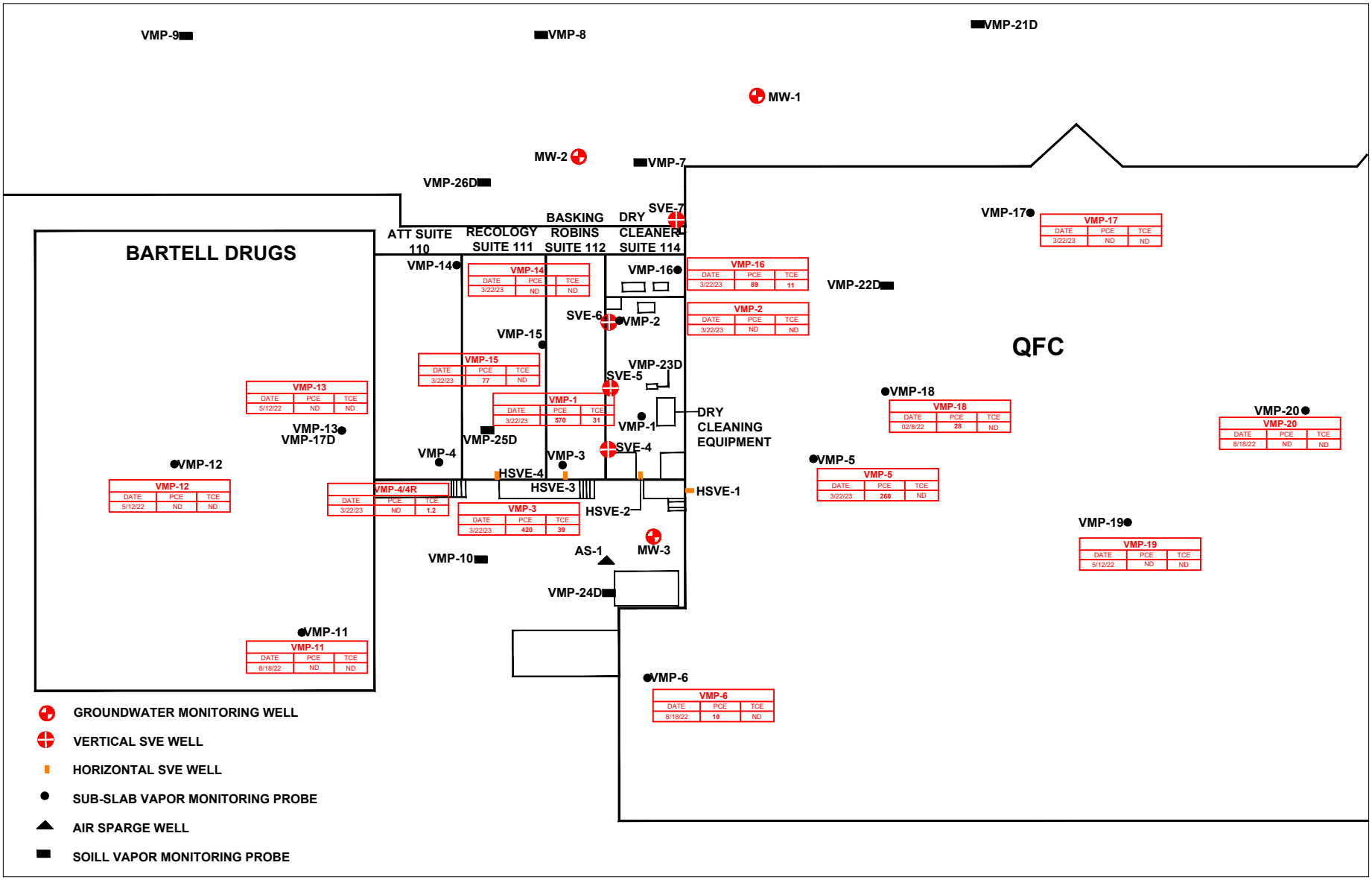
Well and Sample Locations

Converse Consultants

CANYON PARK PLACE
22833 BOTHELL WAY SE
BOTHELL, WASHINGTON

PROJECT NO. 17-42-200-07

FIGURE NO. 3



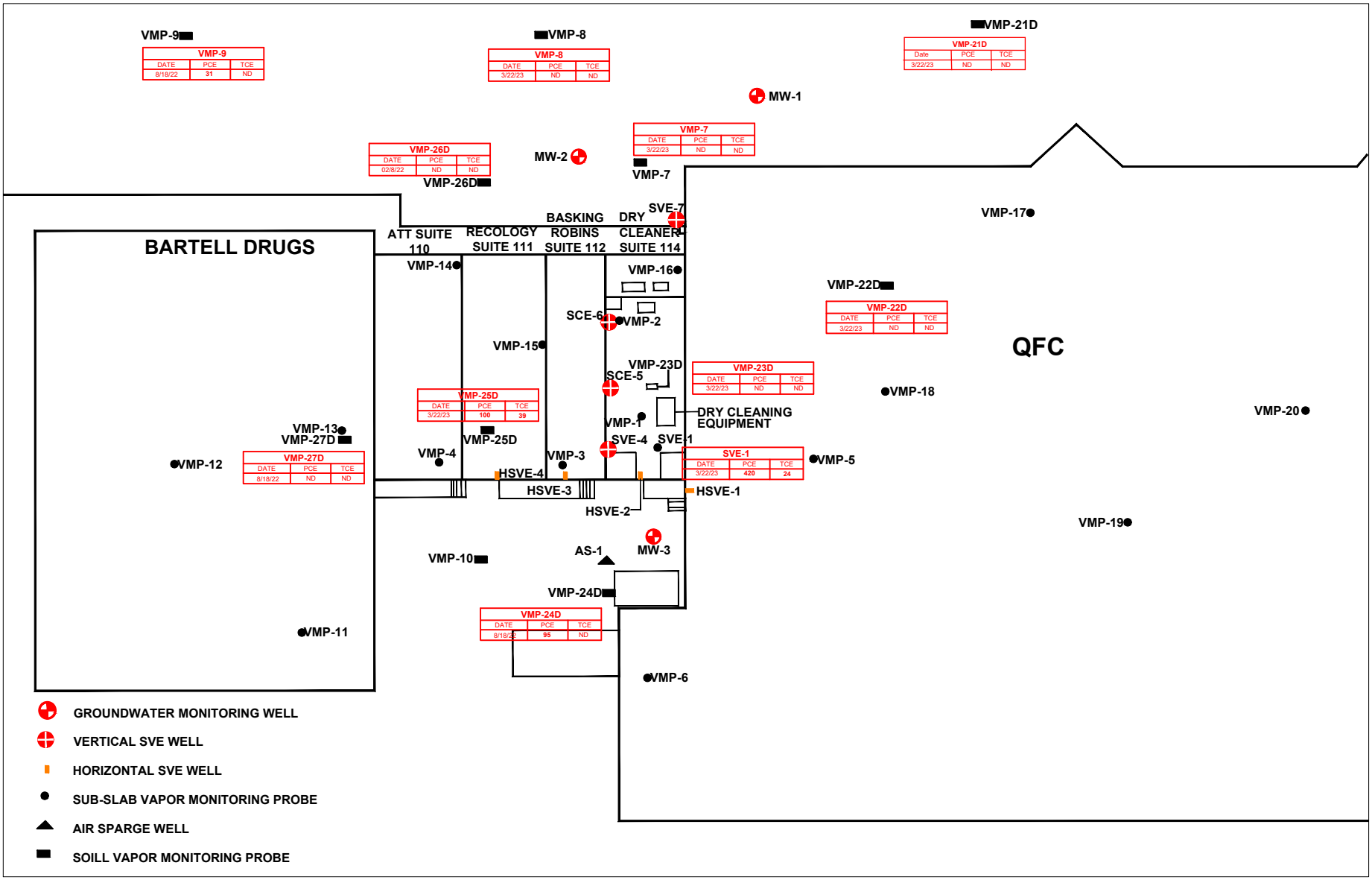
PCE and TCE Concentrations in Sub-Slab Vapor Samples

Converse Consultants

CANYON PARK PLACE
22833 BOTHELL WAY SE
BOTHELL, WASHINGTON

Project No. 17-42-200-07

Figure No. 4A



PCE and TCE Concentrations in Soil Vapor Samples

Converse Consultants

CANYON PARK PLACE
22833 BOTHELL WAY SE
BOTHELL, WASHINGTON

Project No. 17-42-200-07

Figure No. 4B

Tables

Tables

TABLE 1

INDOOR/OUTDOOR AIR ANALYTICAL SUMMARY

CANYON PARK PLACE

BOTHEL WA

			TETRACHLOROETHENE (PCE)	TRICHLOROETHENE (TCE)	BENZENE	CARBON TETRACHLORIDE	CHLOROFORM	CHLOROMETHANE	CIS-1,2-DICHLOROETHENE (DCE)	TRANS-1,2-DICHLOROETHENE (DCE)	ETHYLBENZENE	VINYL ACETATE	All OTHER VOCs
Suite Samples	**Location**	**Sample Date**	**ug/m3**										
Outdoor / Ambient	Front of Suites	9/7/2011	**0.172**	**0.186**	**1.286**	--	ND<0.097	--	ND<0.080	ND<0.051	**3.27**	ND<0.052	ND
	Rear of Suites	9/7/2011	ND<0.32	ND<0.256	0.238	--	ND<0.230	--	ND<0.189	ND<0.121	**0.86**	ND<0.123	ND
		09/05/2019	**0.189**	ND<0.107	**0.345**	**0.431**	ND<0.0973	**0.871**	ND<0.0793	**0.0850**	**0.206**	ND<0.0704	ND
#114 - Dryclean-US	Front of Suite	9/7/2011	**0.175**	**0.116**	**1.271**	--	ND<0.087	--	ND<0.071	ND<0.045	ND<2.03	ND<0.046	ND
	Rear of Suite	9/7/2011	**0.356**	**0.202**	**1.209**	--	**0.101**	--	ND<0.075	ND<0.048	**1.97**	**0.049**	ND
		09/05/2019	**15.5**	**18.3**	**0.561**	**0.441**	ND<0.0973	**1.32**	ND<0.0793	**0.0999**	**0.321**	ND<0.0704	ND
#115 - QFC	East Side	9/7/2011	**0.173**	**0.271**	**1.186**	--	**2.649**	--	ND<0.073	ND<0.047	ND<1.67	ND<0.048	ND
	West Side	9/7/2011	**0.142**	**0.22**	**1.323**	--	**1.935**	--	ND<0.011	ND<0.046	**2.061**	ND<0.047	ND
		09/05/2019	**4.00**	**0.143**	**1.02**	**0.693**	ND<0.0973	**1.54**	ND<0.0793	**0.130**	**1.19**	**1.47**	ND
#112 - Baskin Robins	Rear of Suite	9/7/2011	**1.162**	**0.258**	**1.388**	--	**1.144**	--	ND<0.074	ND<0.048	ND<1.70	**0.048**	ND
		09/05/2019	**0.517**	**0.136**	**0.521**	**0.433**	ND<0.0973	**0.942**	**0.175**	**0.0941**	**2.05**	**0.132**	ND
#111 - Recology	Rear of Suite	09/05/2019	**1.77**	**0.643**	**1.98**	**0.932**	**4.67**	**1.05**	ND<0.0793	**0.113**	**0.668**	**0.0870**	ND
DOE MTCA Method B - Indoor Air Screening Levels			9.6	0.33	0.32	0.42	0.11	41	18	18	460	91	--

Notes:

DOE MTCA = Washington State Department of Ecology, Model Toxics Control Act

Bold results are above laboratory detection limits

Shaded results indicate concentrations above regulatory limits

-- = not analyzed or data not available

ND = Nod detected above indicated laboratory detection limit

TABLE 2
SUB-SLAB VAPOR ANALYTICAL SUMMARY
CANYON PARK PLACE
BOTHEL, WA

Sample Location	Sample Date	Note	TETRACHLOROETHENE (PCE)	TRICHLOROETHENE (TCE)	CIS-1,2-DICHLOROETHENE (Cis-1,2-DCE)	TRANS-1,2-DICHLOROETHENE (Trans-1,2-DCE)	VINYL CHLORIDE	CARBON TETRACHLORIDE	CHLOROFORM	2-PROPANOL (Isopropyl Alcohol - tracer)	ALL OTHER VOCs
			ug/m3								
VMP-1	4/27/2016	PS Baselne	**8,300**	**140**	<17	<17	<11	-	<21	-	ND
	6/23/2016	Pre - PS	**5,200**	**83**	<12	<12	<7.6	-	<14	-	ND
	6/24/2016	Post - PS	**4,900**	**88**	<11	<11	<7.2	-	<14	-	ND
	10/25/2016	Pre - PS	**10,000**	**180**	<21	<21	<14	-	<26	-	ND
	10/27/2016	Post - PS	**4,800**	**90**	<9.1	<9.1	<5.9	-	<11	-	ND
	10/18/2021	Rem. Baseline	**6,800**	**100**	<29	<29	<18	<46	<35	**2,000**	ND
	11/16/2021	Week 2	**59**	**10**	<3.7	<3.7	<2.4	<5.9	<4.6	**5,800**	ND
	2/8/2022	O&M 2022 Q1	**80**	**14**	<3.8	<3.8	<2.5	<6.1	<4.7	**150**	ND
	5/12/2022	O&M 2022 Q2	**36**	**16**	<3.9	<3.9	<2.5	<6.2	<4.8	**440**	ND
	8/18/2022	O&M 2022 Q3	**12**	<5.5	<4.1	<4.1	<2.6	<6.5	<5.0	<10	ND
	12/5/2022	O&M 2022 Q4	**64**	**18**	<3.9	<3.9	<2.5	<6.2	<4.8	<9.7	ND
	3/22/2023	**O&M 2023 Q1**	**570**	**31**	<2.9	<2.9	<1.9	-	<20	-	ND
VMP-2	4/28/2016	PS Baselne	**1,300**	**24**	<9.4	<9.4	<6.0	-	<12	-	ND
	6/23/2016	Pre - PS	**1,000**	**11**	<3.0	<3.0	<1.9	-	<3.6	-	ND
	6/24/2016	Post - PS	**930**	**12**	<3.1	<3.1	<2.0	-	<3.8	-	ND
	10/25/2016	Pre - PS	**1,200**	**19**	<8.8	<8.0	<5.6	-	<11	-	ND
	10/27/2016	Post - PS	**750**	**14**	<2.1	<2.1	<1.4	-	<2.6	-	ND
	10/18/2021	Rem. Baseline	**480**	<45	<34	<34	<21	<53	<41	**21,000**	ND
	11/16/2021	Week 2	**87**	**13**	<3.7	<3.7	<2.4	<5.9	<4.6	**5,400**	ND
	2/8/2022	O&M 2022 Q1	<45	**10**	<3.7	<3.7	<2.4	<5.9	<4.6	**15**	ND
	8/18/2022	O&M 2022 Q3	<6.6	<5.2	<3.8	<3.8	<2.5	<6.1	<4.7	<9.5	ND
	3/23/2023	**O&M 2023 Q1**	<35	<0.55	<2	<2	<1.3	-	<0.25	-	ND
VMP-3	4/28/2016	PS Baselne	**18,000**	**1,200**	**330**	<46	<30	-	<57	-	ND
	6/23/2016	Pre - PS	**19,000**	**1,200**	**300**	<36	<23	-	<44	-	ND
	6/24/2016	Post - PS	**18,000**	**1,100**	**270**	<38	<24	-	<46	-	ND
	10/25/2016	Pre - PS	**18,000**	**1,100**	**210**	<37	<24	-	<46	-	ND
	10/27/2016	Post - PS	**14,000**	**1,000**	**350**	<24	<15	-	<29	-	ND
	10/18/2021	Rem. Baseline	**7,000**	**690**	**480**	<28	<18	<45	<35	**250**	ND
	11/16/2021	Week 2	**280**	**120**	**380**	**7.5**	<2.3	<5.8	**7.5**	**1,000**	ND
	2/8/2022	O&M 2022 Q1	**170**	**39**	**73**	<3.7	<2.4	<5.9	<4.6	**1500**	ND
	5/12/2022	O&M 2022 Q2	**120**	**29**	**61**	<3.8	<2.5	<6.1	<4.7	**24**	ND
	8/17/2022	O&M 2022 Q3	<6.4	<5.1	<3.8	<3.8	<2.4	<6.0	<4.6	**13**	ND
	11/29/2022	O&M 2022 Q4	**73**	**12**	**23**	<3.5	<2.3	<5.6	<4.4	**230**	ND
	3/22/2023	**O&M 2023 Q1**	**420**	**39**	**13**	<2.9	<1.9	-	**1.6**	-	ND

TABLE 2
SUB-SLAB VAPOR ANALYTICAL SUMMARY
CANYON PARK PLACE
BOTHEL, WA

Sample Location	Sample Date	Note	TETRACHLOROETHENE (PCE)	TRICHLOROETHENE (TCE)	CIS-1,2-DICHLOROETHENE (Cis-1,2-DCE)	TRANS-1,2-DICHLOROETHENE (Trans-1,2-DCE)	VINYL CHLORIDE	CARBON TETRACHLORIDE	CHLOROFORM	2-PROPANOL (Isopropyl Alcohol - tracer)	ALL OTHER VOCs
			ug/m3								
VMP-4/4R	4/28/2016	PS Basellne	<1,100	<880	<650	<650	<420	-	<800	-	ND
	6/21/2016	PS Basellne	**3,600**	**60**	<9.5	<9.5	<6.1	-	<12	-	ND
	6/23/2016	Pre - PS	**3,700**	**63**	<9.0	<9.0	<5.8	-	<11	-	ND
	6/24/2016	Post - PS	**3,500**	**58**	<9.5	<9.5	<6.1	-	<12	-	ND
	10/25/2016	Pre - PS	**2,800**	**40**	<8.5	<8.5	<5.5	-	<10	-	ND
	10/27/2016	Post - PS	***1,500***	**26**	<4.7	<4.7	<3.0	-	<5.8	-	ND
	2/8/2022	O&M 2022 Q1	***88***	<4.7	<3.4	<3.4	<2.2	<5.5	<4.2	**500**	ND
	8/18/2022	O&M 2022 Q3	*<6.6*	<5.2	<3.8	<3.8	<2.5	<6.1	**60**	**490**	ND
	11/29/2022	O&M 2022 Q4	**12**	<5.2	<3.8	<3.8	<2.5	<6.1	**23**	**380**	ND
	3/22/2023	**O&M 2023 Q1**	<33	**1.2**	<1.9	<1.9	<1.3	-	<0.24	**-**	ND
VMP-5	4/28/2016	PS Baseline	**1,400**	*<3.9*	<2.9	<2.9	<1.8	-	<3.5	-	ND
	6/24/2016	Post-PS	**1,100**	**2.8**	<2.1	<2.1	<1.4	-	<2.6	-	ND
	10/18/2021	Rem. Baseline	**850**	<96	<71	<71	<71	<110	<88	**8,900**	ND
	11/16/2021	Week 2	<6.1	<4.8	<3.6	<3.6	<2.3	<5.7	<4.4	**640**	ND
	2/8/2022	O&M 2022 Q1	**390**	<5.2	<3.8	<3.8	<2.4	<6.0	<4.7	**27**	ND
	5/12/2022	O&M 2022 Q2	**330**	<5.4	<4.0	<4.0	<2.6	<6.4	<4.9	**510**	ND
	8/18/2022	O&M 2022 Q3	**320**	<4.8	<3.5	<3.5	<2.3	<5.6	<4.3	**8.7**	ND
	12/5/2022	O&M 2022 Q4	**110**	**8.6**	<3.7	<3.7	<2.4	<5.8	<4.5	**24**	ND
	3/22/2023	**O&M 2023 Q1**	**260**	<0.81	<3	<3	<1.9	-	<0.37	**-**	ND
VMP-6	4/28/2016	PS Baseline	**23**	*<6.0*	<2.8	<4.4	<2.8	-	**5.2**	-	ND
	10/19/2021	Rem. Baseline	<120	*<94*	<70	<70	<70	<110	<86	**37,000**	ND
	2/8/2022	O&M 2022 Q1	**11**	*<5.1*	<3.8	<3.8	<2.4	<6.0	<4.6	<9.3	ND
	8/18/2022	O&M 2022 Q3	**10**	*<4.9*	<3.6	<3.6	<2.3	<5.8	<4.5	**57**	ND
VMP-10	4/28/2016	Assessment	**2.8**	<1.1	<0.84	<0.84	<0.54	-	**9.3**	-	ND
VMP-11 (BRT)	9/6/2019	Assessment	<1.36	**6.33**	<0.793	<0.793	<0.511	<1.26	<0.973	-	ND
	2/8/2022	O&M 2022 Q1	<5.8	<4.6	<3.4	<3.4	<2.2	<5.4	<4.2	**490**	ND
	8/17/2022	O&M 2022 Q3	<6.6	<5.2	<3.8	<3.8	<2.5	<6.1	<4.7	**480**	ND
VMP-12 (BRT)	9/6/2019	Assessment	<1.36	**1.52**	<0.793	<0.793	<0.511	<1.26	<0.973	-	ND
	5/12/2022	O&M 2022 Q2	<6.1	<4.8	<3.6	<3.6	<2.3	<5.7	<4.4	**25**	ND
VMP-13 (BRT)	9/6/2019	Assessment	**1.78**	**1.95**	<0.793	<0.793	<0.511	<1.26	**4.69**	-	ND
	10/18/2021	Rem. Baseline	**71**	<9.6	<7.0	<7.0	<4.6	<11	<8.7	**2,100**	ND
	5/12/2022	O&M 2022 Q2	<6.8	<5.4	<4.0	<4.0	<2.6	<6.3	<4.9	**32**	ND
VMP-14 (AT&T)	9/5/2019	Assessment	**2.63**	<1.07	<0.793	<0.793	<0.511	<1.26	<0.973	-	ND
	10/18/2021	Rem. Baseline	<63	<50	<37	<37	<24	<59	<46	**6,400**	ND
	2/8/2022	O&M 2022 Q1	<6.2	<4.9	<3.6	<3.6	<2.3	<5.8	<4.5	**220**	ND
	11/29/2022	O&M 2022 Q4	<6.6	<5.2	<3.8	<3.8	<2.5	<6.1	<4.7	**96**	ND
	3/22/2023	**O&M 2023 Q1**	<36	<0.57	<2.1	<2.1	<1.4	-	<0.26	-	ND

TABLE 2
SUB-SLAB VAPOR ANALYTICAL SUMMARY
CANYON PARK PLACE
BOTHEL, WA

Sample Location	Sample Date	Note	TETRACHLOROETHENE (PCE)	TRICHLOROETHENE (TCE)	CIS-1,2-DICHLOROETHENE (Cis-1,2-DCE)	TRANS-1,2-DICHLOROETHENE (Trans-1,2-DCE)	VINYL CHLORIDE	CARBON TETRACHLORIDE	CHLOROFORM	2-PROPANOL (Isopropyl Alcohol - tracer)	ALL OTHER VOCs
			ug/m3								
VMP-15 (Recology)	9/11/2019	Assessment	**811**	**1.08**	**3.65**	**0.795**	<0.511	<1.26	<0.973	-	ND
	10/18/2021	Rem. Baseline	**460**	<19	<14	<14	<9.1	<22	<17	**5,200**	ND
	5/12/2022	O&M 2022 Q2	**7.3**	<5.0	<3.7	<3.7	<2.4	<5.9	<4.6	**480**	ND
	11/29/2022	O&M 2022 Q4	<7.2	<5.7	<4.2	<4.2	<2.7	<6.7	<5.2	**240**	ND
	3/22/2023	**O&M 2023 Q1**	**77**	<0.55	<2	<2	<1.3	-	<0.25	**-**	ND
VMP-16 (Cleaners)	9/9/2019	Assessment	**274**	**12.3**	<0.793	<0.793	**0.532**	<1.26	<0.973	-	ND
	10/18/2021	Rem. Baseline	<2,600	<2,000	<1,500	<1,500	<980	<2,400	<1,900	**930,000**	ND
	2/8/2022	O&M 2022 Q1	**110**	**14**	<3.8	<3.8	<2.4	<6.0	<4.7	**360**	ND
	5/12/2022	O&M 2022 Q2	**160**	**14**	<4.2	<4.2	<2.7	<6.7	<5.2	**420**	ND
	8/18/2022	O&M 2022 Q3	**120**	**10**	<3.7	<3.7	<2.4	<5.9	<4.6	**200**	ND
	12/5/2022	O&M 2022 Q4	**48**	**8.5**	<4.0	<4.0	<2.6	<6.3	<4.9	**72**	ND
	3/23/2023	**O&M 2023 Q1**	**89**	**11**	<3.8	<3.8	<2.5	-	**0.61**	-	ND
VMP-17 (QFC)	9/9/2019	Assessment	<1.36	<1.07	<0.793	<0.793	<0.511	<1.26	<0.973	-	ND
	12/5/2022	O&M 2022 Q4	<6.5	<5.2	<3.8	<3.8	<2.5	<6.1	<4.7	<9.5	ND
	3/22/2023	**O&M 2023 Q1**	<37	<0.59	<2.2	<2.2	<1.4	-	<0.27	-	ND
VMP-18 (QFC-W)	9/6/2019	Assessment	**19.2**	<1.07	<0.793	<0.793	<0.511	<1.26	<0.973	-	ND
	10/18/2021	Rem. Baseline	<130	<100	<74	<74	<74	<120	<91	**23,000**	ND
	2/8/2022	O&M 2022 Q1	**28**	<5.1	<3.8	<3.8	<2.4	<6.0	<4.6	**14**	ND
VMP-19 (QFC)	9/6/2019	Assessment	<1.36	<1.07	<0.793	<0.793	<0.511	**1.56**	<0.973	-	ND
	5/12/2022	O&M 2022 Q2	<7.1	<5.6	<4.1	<4.1	<2.7	<6.6	<5.1	**27**	ND
VMP-20 (QFC-E)	9/6/2019	Assessment	**6.49**	<1.07	<0.793	<0.793	<0.511	<1.26	<0.973	-	ND
	2/8/2022	O&M 2022 Q1	<6.2	<4.9	<3.6	<3.6	<2.3	<5.7	<4.4	<8.9	ND
	8/18/2022	O&M 2022 Q3	<6.4	<5.1	<3.8	<3.8	<2.4	<6.0	<4.6	**120**	ND
Manifold - HSVE Wells (-1, -2, -3, -4)	11/16/2021	O&M - Week 2	**20**	<4.7	<3.4	<3.4	<2.2	<5.5	<4.2	**59**	ND
DOE MTCA Method B - Sub-Slab Soil Gas Screening Levels			320	11	610	610	9.5	14	3.6	-	--

Notes:

DOE MTCA = Washington State Department of Ecology, Model Toxics Control Act

-- = not analyzed or data not available

ND = Not detected above laboratory detection limits

Bold results are above laboratory detection limits

Shaded results indicate concentrations above regulatory limits

PS = Pilot Study

ug/m^3 = micrograms per cubic meter

TABLE 3
SOIL VAPOR ANALYTICAL SUMMARY
CANYON PARK PLACE
BOTHELL WA

				TETRACHLOROETHENE (PCE)	TRICHLOROETHENE (TCE)	CIS-1,2-DICHLOROETHENE (cis 1,2-DCE)	TRANS-1,2-DICHLOROETHENE (trans 1,2-DCE)	1,1-DICHLOROETHENE (1,1-DCE)	VINYL CHLORIDE	CHLOROFORM	ALL OTHER VOCs
Sample Location	**Depth (feet bgs)**	**Sample Date**	**Note**	**(µg/m³)**							
VMP-7	6	4/27/2016	PS Baseline	**6,000**	**40**	<9.6	<9.6	--	<6.2	**18**	ND
		6/23/2016	Pre-PS	**11,000**	**80**	**31**	<22	--	<14	**32**	ND
		6/24/2016	Post-PS	**11,000**	**88**	**36**	<22	--	<14	**29**	ND
		10/18/2021	Rem. Baseline	**3,100**	**29**	**47**	<15	<15	<9.6	**38**	ND
		11/16/2021	Week 2	**970**	**5.8**	<3.6	<3.6	<3.6	<2.3	<4.4	ND
		2/8/2022	O&M 2022 Q1	**11**	<4.9	<3.6	<3.6	<3.6	<2.3	<4.4	ND
		12/05/2022	O&M 2022 Q4	**66**	<5.1	<3.8	<3.8	<3.8	<2.4	<4.6	ND
		3/22/2023	**O&M 2023 Q1**	<35	<0.56	<2.1	<2.1	<2.1	<1.3	<0.26	ND
VMP-8	6	4/27/2016	PS Baseline	<1.6	**1.6**	**0.99**	<0.91	--	<0.59	**4.6**	ND
		12/05/2022	O&M 2022 Q4	<6.0	<4.8	<3.5	<3.5	<3.6	<2.3	**10**	ND
		3/22/2023	**O&M 2023 Q1**	<35	<0.56	<2.1	<2.1	<2.1	<1.3	**4.8**	ND
VMP-9	6	4/27/2016	PS Baseline	**5.2**	**1.8**	<0.97	<0.97	--	<0.62	**20**	ND
		8/18/2022	O&M 2022 Q3	**31**	<5.9	<4.3	<4.3	<2.8	<6.9	<5.3	ND
VMP-21D	5	9/9/2019	Assessment	<1.36	<1.07	<0.793	<0.793	<0.793	<0.511	<0.973	ND
		3/22/2023	**O&M 2023 Q1**	<120	<1.8	<6.7	<6.7	<6.7	<4.3	<0.83	ND
VMP-22D	5	9/9/2019	Assessment	**10.5**	<1.07	<0.793	<0.793	<0.793	<0.511	<0.973	ND
		10/18/2021	Rem. Baseline	<59,000	<47,000	<34,000	<34,000	<34,000	<22,000	<42,000	ND
		2/8/2022	O&M 2022 Q1	**46**	<4.9	<3.6	<3.6	<3.6	<2.3	<4.4	ND
		8/17/2022	O&M 2022 Q3	**40**	<5.2	<3.8	<3.8	<3.9	<2.5	<4.7	ND
		12/5/2022	O&M 2022 Q4	**36**	<4.9	<3.6	<3.6	<3.7	<2.3	<4.5	ND
		3/22/2023	**O&M 2023 Q1**	<48	<0.76	<2.8	<2.8	<2.8	<1.8	<0.35	ND
VMP-23D	5	9/9/2019	Assessment	**459**	**39.8**	**125**	**1.58**	<0.793	**0.931**	**2.93**	ND
		10/18/2021	Rem. Baseline	**520**	**118**	**300**	**15**	<7.5	**14**	<9.2	ND
		11/16/2021	Week 2	**660**	**49**	**30**	<3.6	<3.6	<2.3	<4.4	ND
		2/8/2022	O&M 2022 Q1	**290**	**35**	**16**	<3.9	<3.9	<2.5	<4.8	ND
		5/12/2022	O&M 2022 Q2	**320**	**58**	**27**	<3.8	<3.9	<2.5	<4.7	ND
		8/18/2022	O&M 2022 Q3	**520**	**130**	**20**	<4.0	<4.1	<2.6	<4.9	ND
		12/5/2022	O&M 2022 Q4	**240**	**38**	**9.6**	<4.1	<4.2	<2.6	**5.0**	ND
		3/23/2023	**O&M 2023 Q1**	<37	<0.58	<2.1	<2.1	<2.1	<1.4	<0.27	ND
VMP-24D	3	9/9/2019	Assessment	**241**	**2.03**	<0.793	<0.793	<0.793	**1.09**	<0.973	ND
		8/17/2022	O&M 2022 Q3	**95**	<5.6	<4.2	<4.2	<4.2	<2.7	<5.1	ND
VMP-25D	5	9/11/2019	Assessment	**306**	**118**	**3,560**	**1,370**	**23.8**	**91.5**	<0.973	ND
		10/18/2021	Rem. Baseline	**190**	**210**	**3,300**	**840**	<39	**170**	<48	ND
		5/12/2022	O&M 2022 Q2	**310**	**54**	**27**	**22**	<3.9	<2.4	<4.7	ND
		8/17/2022	O&M 2022 Q3	**7.8**	<4.9	<3.6	<3.6	<3.7	<2.3	<4.5	ND
		11/29/2022	O&M 2022 Q4	**180**	**44**	**16**	**12**	<3.7	<2.3	<4.5	ND
		3/22/2023	**O&M 2023 Q1**	**100**	**39**	**19**	**24**	<3.3	<2.1	**0.48**	ND

TABLE 3
SOIL VAPOR ANALYTICAL SUMMARY
CANYON PARK PLACE
BOTHELL WA

Sample Location	Depth (feet bgs)	Sample Date	Note	TETRACHLOROETHENE (PCE)	TRICHLOROETHENE (TCE)	CIS-1,2-DICHLOROETHENE (cis 1,2-DCE)	TRANS-1,2-DICHLOROETHENE (trans 1,2-DCE)	1,1-DICHLOROETHENE (1,1-DCE)	VINYL CHLORIDE	CHLOROFORM	ALL OTHER VOCs
				(µg/m³)							
VMP-26D	5	9/9/2019	Assessment	<1.36	<1.07	<0.793	<0.793	<0.793	<0.511	<0.973	ND
		10/18/2021	Rem. Baseline	<6.2	<4.9	<3.6	<3.6	<3.6	<2.3	<4.5	ND
		2/8/2022	O&M 2022 Q1	<6.5	<5.2	<3.8	<3.8	<3.8	<2.4	<4.7	ND
VMP-27D	5	9/9/2019	Assessment	**2.94**	<1.07	<0.793	<0.793	<0.793	<0.511	<0.973	ND
		8/18/2022	O&M 2022 Q3	<6.6	<5.2	<3.8	<3.8	<3.9	<2.5	<4.7	ND
SVE-1	3-8	10/18/2021	Rem. Baseline	<61,000	<48,000	<36,000	<36,000	<36,000	<23,000	<44,000	ND
		5/12/2022	O&M 2022 Q2	**200**	**59**	**13**	<3.7	<3.7	<2.4	<4.5	ND
		12/5/2022	O&M 2022 Q4	**150**	**40**	<3.9	<3.9	<4.0	<2.5	<4.8	ND
		3/23/2023	**O&M 2023 Q1**	**420**	**24**	<3	<3	<3	<1.9	<0.37	ND
Manifold - Vertical SVE Wells (SVE-4, -5, -6, -7)	3-5	11/16/2021	O&M - Week 2	**110**	**12**	**26**	<3.3	<3.3	<2.1	<4.1	ND
DOE MTCA Method B - Deep Soil Gas Screening Levels				960	33	1,800	1,800	9,100	28	11	--

Notes:
DOE MTCA = Washington State Department of Ecology, Model Toxics Control Act
bgs = below ground surface
Bold results are above laboratory detection limits
Shaded results indicate concentrations above regulatory limits
-- = not analyzed or data not available
ND = Not detected above laboratory detection limits
ug/m^3 = micrograms per cubic meter

TABLE 4
GROUNDWATER ANALYTICAL SUMMARY
CANYON PARK PLACE
BOTHEL WA

		PCE	TCE	VINYL CHLORIDE	CHLOROFORM	BENZENE	ALL OTHER VOCs
Sample Location	**Sample Date**	**ug/L**					
MW-1	8/6/2007	<0.2	<0.2	<0.2	**0.63**	<0.2	ND
	12/28/2007	<0.2	<0.2	<0.2	**3.57**	<0.2	ND
	3/19/2008	<0.2	<0.2	<0.2	<0.2	-	ND
	6/26/2008	<0.2	<0.2	<0.2	<0.2	-	ND
	3/23/2012	<1.0	<1.0	<0.2	<1.0	<1.0	ND
	2/8/2016	<1.0	<1.0	<0.2	<1.0	<1.0	ND
	9/23/2016	<1.0	<1.0	<0.2	<1.0	-	ND
	5/18/2017	<1.0	<1.0	<0.2	<1.0	-	ND
	10/19/2021	<1	<0.5	<0.02	-	-	ND
	5/13/2022	<1	<1	<0.2	<1	<0.35	ND
	8/18/2022	<1	<0.5	<0.02	<1	<0.35	ND
	11/21/2022	<0.2	<0.2	<0.02	**0.38**	<0.2	ND
	3/22/2023	<1	<0.5	<0.02	<1	<0.35	ND
MW-2	8/6/2007	<0.2	<0.2	<0.2	**0.85**	<0.2	ND
	12/28/2007	<0.2	<0.2	<0.2	<0.2	<0.2	ND
	3/19/2008	<0.2	<0.2	<0.2	<0.2	-	ND
	6/26/2008	<0.2	<0.2	<0.2	<0.2	-	ND
	3/23/2012	<0.1	<0.1	<0.2	<1.0	<1.0	ND
	2/8/2016	<0.1	<0.1	<0.2	<1.0	<1.0	ND
	6/21/2016	<1.0	<1.0	<0.2	<1.0	-	ND
	6/27/2016	<1.0	<1.0	<0.2	<1.0	-	ND
	9/23/2016	<1.0	<1.0	<0.2	<1.0	-	ND
	5/18/2017	<1.0	<1.0	<0.2	<1.0	-	ND
	10/19/2021	<1	<0.5	<0.02	-	-	ND
	5/13/2022	<1	<1	<0.2	<1	<0.35	ND
	8/18/2022	<1	<0.5	<0.02	<1	<0.35	ND
	11/21/2022	<0.2	<0.2	<0.02	<0.2	<0.2	ND
	3/22/2023	<1	<0.5	<0.02	<1	<0.35	ND

TABLE 4
GROUNDWATER ANALYTICAL SUMMARY
CANYON PARK PLACE
BOTHEL WA

		PCE	TCE	VINYL CHLORIDE	CHLOROFORM	BENZENE	ALL OTHER VOCs
Sample Location	**Sample Date**	**ug/L**					
MW-3	8/6/2007	**5**	<0.2	<0.2	**0.22**	<0.2	ND
	12/28/2007	**15.5**	**0.24**	<0.2	<0.2	<0.2	ND
	3/19/2008	**18**	**0.20**	<0.2	<0.2	-	ND
	6/26/2008	**6.4**	<0.2	<0.2	**1.60**	-	ND
	7/18/2008	**0.62**	<0.2	<0.2	<0.2	-	ND
	10/22/2008	**4.7**	<0.2	<0.2	<0.2	-	ND
	1/6/2009	**34**	<0.2	<0.2	<0.2	-	ND
	10/23/2009	**39**	**0.39**	<0.2	<0.2	-	ND
	1/18/2010	**29**	**0.33**	<0.2	**0.32**	-	ND
	3/31/2010	**19**	<0.2	<0.2	**0.59**	-	ND
	6/24/2010	**35**	**0.36**	<0.2	<0.2	-	ND
	8/18/2020	**22**	<0.2	<0.2	<0.2	-	ND
	3/23/2012	**56**	<1.0	<0.2	<1.0	<1.0	ND
	2/8/2016	**43**	<1.0	<0.2	<1.0	<1.0	ND
	6/21/2016	**33**	<1.0	<0.2	<1.0	-	ND
	6/27/2016	**9.3**	<1.0	<0.2	<1.0	-	ND
	9/23/2016	**19**	<1.0	<0.2	<1.0	-	ND
	5/18/2017	**21**	<1.0	<0.2	<1.0	-	ND
	10/19/2021	**17**	<0.5	<0.02	-	-	ND
	5/13/2022	**1.7**	<1	<0.2	<1	<0.35	ND
	8/18/2022	**1.1**	<0.5	<0.02	<1	<0.35	ND
	11/21/2022	**2.3**	<0.2	<0.2	<0.2	<0.2	ND
	3/22/2023	**11**	<0.5	<0.02	<1	<0.35	ND
Maximum Conctentration		56	0.39	ND	3.57	ND	ND
DOE MTCA Method A Cleanup Levels - For Drinking Water		5	4	0.29	14	5	--
DOE MTCA Method A Cleanup Levels - For Vapor Intrusion		24	1.4	0.35	1.2	2.4	--

Notes:

DOE MTCA = Washington State Department of Ecology, Model Toxics Control Act

-- = not analyzed or data not available

ND = Not detected above laboratory detection limits

Bold results are above laboratory detection limits

Shaded results indicate concentrations above regulatory limits

* = Value is MTCA level B

** = Maximum contaminant level

TABLE 5
CARBON SYSTEM ANALYTICAL SUMMARY
CANYON PARK PLACE
BOTHEL, WA

			TETRACHLOROETHENE (PCE)	TRICHLOROETHENE (TCE)	CIS-1,2-DICHLOROETHENE (Cis-1,2-DCE)	ACETONE	BENZENE	2-BUTANONE (Methyl Ethyl Ketone)	DICHLORODIFLUOROMETHANE (FREON 12)	ETHANOL	TETRAHYDROFURAN	2-PROPANOL (Isopropyl Alcohol - tracer)	ALL OTHER VOCs
Sample Location	**Sample Date**	**Note**	**ug/m3**										
Carbon Influent	11/4/2021	O&M - Day 1	**210**	**7.0**	**15**	**50**	**3.0**	**49**	**250**	**30**	**1,500**	**27**	ND
	11/16/2021	O&M - Week 2	**38**	**8.1**	**7.5**	**25**	<2.9	<11	**19**	**78**	**8.4**	**53**	ND
	2/8/2022	O&M 2022 Q1	<7.0	<5.5	<4.1	**31**	<3.3	<12	<5.1	**130**	<3.0	<10	ND
	3/22/2022	O&M 2022 Q2	<6.5	<5.1	<3.8	-	-	-	-	-	-	-	ND
	5/12/2022	O&M 2022 Q2	<6.2	<4.9	<3.6	<22	<2.9	<11	**13**	**82**	<2.7	**26**	ND
Carbon Effluent	11/4/2021	O&M - Day 1	<6.3	<5.0	<3.7	<22	<3.0	<11	<4.6	<18	**36**	**24**	ND
	11/16/2021	O&M - Week 2	<5.7	<4.5	<3.3	<20	<2.7	<9.9	**16**	**71**	<2.5	ND	ND
	5/12/2022	O&M 2022 Q2	<6.6	<5.2	<3.9	**24**	<3.1	<11	**10**	**72**	**2.9**	**28**	ND

Notes:
ND = Not detected above laboratory detection limits
ug/m^3 = micrograms per cubic meter

Laboratory Analytical Reports

Appendix A

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.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

April 5, 2023

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

Dear Mr Whitman:

Included is the amended report from the testing of material submitted on March 23, 2023 from the Canyon Park WES 1683A, F&BI 303378 project. Chloroform has been added to the list of analytes to match the list from the previous laboratory.

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
WES0330R.DOC

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.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

March 30, 2023

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

Dear Mr Whitman:

Included are the results from the testing of material submitted on March 23, 2023 from the Canyon Park WES 1683A, F&BI 303378 project. There are 19 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
WES0330R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 23, 2023 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences Canyon Park WES 1683A, F&BI 303378 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
303378 -01	VMP-16
303378 -02	VMP-23D
303378 -03	SVE-1
303378 -04	VMP-2
303378 -05	VMP-22D
303378 -06	VMP-17
303378 -07	VMP-5
303378 -08	VMP-8
303378 -09	VMP-21D
303378 -10	VMP-14
303378 -11	VMP-7
303378 -12	VMP-4R
303378 -13	VMP-25D
303378 -14	VMP-15
303378 -15	VMP-3

All quality control requirements were acceptable.

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VMP-16	Client:	Whitman Environmental Sciences
Date Received:	03/23/23	Project:	Canyon Park WES 1683A
Date Collected:	03/23/23	Lab ID:	303378-01 1/9.6
Date Analyzed:	03/24/23	Data File:	032424.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	83	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<2.5	<0.96
Chloroethane	<25	<9.6
1,1-Dichloroethene	<3.8	<0.96
trans-1,2-Dichloroethene	<3.8	<0.96
1,1-Dichloroethane	<3.9	<0.96
cis-1,2-Dichloroethene	<3.8	<0.96
Chloroform	0.61	0.13
1,2-Dichloroethane (EDC)	<0.39	<0.096
1,1,1-Trichloroethane	<5.2	<0.96
Trichloroethene	11	2.1
1,1,2-Trichloroethane	<0.52	<0.096
Tetrachloroethene	89	13

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VMP-23D	Client:	Whitman Environmental Sciences
Date Received:	03/23/23	Project:	Canyon Park WES 1683A
Date Collected:	03/23/23	Lab ID:	303378-02 1/5.4
Date Analyzed:	03/24/23	Data File:	032413.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	83	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.4	<0.54
Chloroethane	<14	<5.4
1,1-Dichloroethene	<2.1	<0.54
trans-1,2-Dichloroethene	<2.1	<0.54
1,1-Dichloroethane	<2.2	<0.54
cis-1,2-Dichloroethene	<2.1	<0.54
Chloroform	<0.27	<0.054
1,2-Dichloroethane (EDC)	<0.22	<0.054
1,1,1-Trichloroethane	<2.9	<0.54
Trichloroethene	<0.58	<0.11
1,1,2-Trichloroethane	<0.29	<0.054
Tetrachloroethene	<37	<5.4

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SVE-1	Client:	Whitman Environmental Sciences
Date Received:	03/23/23	Project:	Canyon Park WES 1683A
Date Collected:	03/23/23	Lab ID:	303378-03 1/7.5
Date Analyzed:	03/25/23	Data File:	032427.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	83	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.9	<0.75
Chloroethane	<20	<7.5
1,1-Dichloroethene	<3	<0.75
trans-1,2-Dichloroethene	<3	<0.75
1,1-Dichloroethane	<3	<0.75
cis-1,2-Dichloroethene	<3	<0.75
Chloroform	<0.37	<0.075
1,2-Dichloroethane (EDC)	<0.3	<0.075
1,1,1-Trichloroethane	<4.1	<0.75
Trichloroethene	24	4.5
1,1,2-Trichloroethane	<0.41	<0.075
Tetrachloroethene	420	62

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VMP-2	Client:	Whitman Environmental Sciences
Date Received:	03/23/23	Project:	Canyon Park WES 1683A
Date Collected:	03/23/23	Lab ID:	303378-04 1/5.1
Date Analyzed:	03/24/23	Data File:	032414.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	84	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.3	<0.51
Chloroethane	<13	<5.1
1,1-Dichloroethene	<2	<0.51
trans-1,2-Dichloroethene	<2	<0.51
1,1-Dichloroethane	<2.1	<0.51
cis-1,2-Dichloroethene	<2	<0.51
Chloroform	<0.25	<0.051
1,2-Dichloroethane (EDC)	<0.21	<0.051
1,1,1-Trichloroethane	<2.8	<0.51
Trichloroethene	<0.55	<0.1
1,1,2-Trichloroethane	<0.28	<0.051
Tetrachloroethene	<35	<5.1

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VMP-22D	Client:	Whitman Environmental Sciences
Date Received:	03/23/23	Project:	Canyon Park WES 1683A
Date Collected:	03/22/23	Lab ID:	303378-05 1/7.1
Date Analyzed:	03/24/23	Data File:	032420.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	83	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.8	<0.71
Chloroethane	<19	<7.1
1,1-Dichloroethene	<2.8	<0.71
trans-1,2-Dichloroethene	<2.8	<0.71
1,1-Dichloroethane	<2.9	<0.71
cis-1,2-Dichloroethene	<2.8	<0.71
Chloroform	<0.35	<0.071
1,2-Dichloroethane (EDC)	<0.29	<0.071
1,1,1-Trichloroethane	<3.9	<0.71
Trichloroethene	<0.76	<0.14
1,1,2-Trichloroethane	<0.39	<0.071
Tetrachloroethene	<48	<7.1

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VMP-17	Client:	Whitman Environmental Sciences
Date Received:	03/23/23	Project:	Canyon Park WES 1683A
Date Collected:	03/22/23	Lab ID:	303378-06 1/5.5
Date Analyzed:	03/25/23	Data File:	032425.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	85	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.4	<0.55
Chloroethane	<15	<5.5
1,1-Dichloroethene	<2.2	<0.55
trans-1,2-Dichloroethene	<2.2	<0.55
1,1-Dichloroethane	<2.2	<0.55
cis-1,2-Dichloroethene	<2.2	<0.55
Chloroform	<0.27	<0.055
1,2-Dichloroethane (EDC)	<0.22	<0.055
1,1,1-Trichloroethane	<3	<0.55
Trichloroethene	<0.59	<0.11
1,1,2-Trichloroethane	<0.3	<0.055
Tetrachloroethene	<37	<5.5

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VMP-5	Client:	Whitman Environmental Sciences
Date Received:	03/23/23	Project:	Canyon Park WES 1683A
Date Collected:	03/22/23	Lab ID:	303378-07 1/7.5
Date Analyzed:	03/25/23	Data File:	032426.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	82	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.9	<0.75
Chloroethane	<20	<7.5
1,1-Dichloroethene	<3	<0.75
trans-1,2-Dichloroethene	<3	<0.75
1,1-Dichloroethane	<3	<0.75
cis-1,2-Dichloroethene	<3	<0.75
Chloroform	<0.37	<0.075
1,2-Dichloroethane (EDC)	<0.3	<0.075
1,1,1-Trichloroethane	<4.1	<0.75
Trichloroethene	<0.81	<0.15
1,1,2-Trichloroethane	<0.41	<0.075
Tetrachloroethene	260	39

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VMP-8	Client:	Whitman Environmental Sciences
Date Received:	03/23/23	Project:	Canyon Park WES 1683A
Date Collected:	03/22/23	Lab ID:	303378-08 1/5.2
Date Analyzed:	03/24/23	Data File:	032415.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	85	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.3	<0.52
Chloroethane	<14	<5.2
1,1-Dichloroethene	<2.1	<0.52
trans-1,2-Dichloroethene	<2.1	<0.52
1,1-Dichloroethane	<2.1	<0.52
cis-1,2-Dichloroethene	<2.1	<0.52
Chloroform	4.8	0.98
1,2-Dichloroethane (EDC)	<0.21	<0.052
1,1,1-Trichloroethane	<2.8	<0.52
Trichloroethene	<0.56	<0.1
1,1,2-Trichloroethane	<0.28	<0.052
Tetrachloroethene	<35	<5.2

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VMP-21D	Client:	Whitman Environmental Sciences
Date Received:	03/23/23	Project:	Canyon Park WES 1683A
Date Collected:	03/22/23	Lab ID:	303378-09 1/17
Date Analyzed:	03/25/23	Data File:	032428.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	96	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<4.3	<1.7
Chloroethane	<45	<17
1,1-Dichloroethene	<6.7	<1.7
trans-1,2-Dichloroethene	<6.7	<1.7
1,1-Dichloroethane	<6.9	<1.7
cis-1,2-Dichloroethene	<6.7	<1.7
Chloroform	<0.83	<0.17
1,2-Dichloroethane (EDC)	<0.69	<0.17
1,1,1-Trichloroethane	<9.3	<1.7
Trichloroethene	<1.8	<0.34
1,1,2-Trichloroethane	<0.94	<0.17
Tetrachloroethene	<120	<17

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VMP-14	Client:	Whitman Environmental Sciences
Date Received:	03/23/23	Project:	Canyon Park WES 1683A
Date Collected:	03/22/23	Lab ID:	303378-10 1/5.3
Date Analyzed:	03/24/23	Data File:	032416.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	86	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.4	<0.53
Chloroethane	<14	<5.3
1,1-Dichloroethene	<2.1	<0.53
trans-1,2-Dichloroethene	<2.1	<0.53
1,1-Dichloroethane	<2.1	<0.53
cis-1,2-Dichloroethene	<2.1	<0.53
Chloroform	<0.26	<0.053
1,2-Dichloroethane (EDC)	<0.21	<0.053
1,1,1-Trichloroethane	<2.9	<0.53
Trichloroethene	<0.57	<0.11
1,1,2-Trichloroethane	<0.29	<0.053
Tetrachloroethene	<36	<5.3

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VMP-7	Client:	Whitman Environmental Sciences
Date Received:	03/23/23	Project:	Canyon Park WES 1683A
Date Collected:	03/22/23	Lab ID:	303378-11 1/5.2
Date Analyzed:	03/24/23	Data File:	032417.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	84	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.3	<0.52
Chloroethane	<14	<5.2
1,1-Dichloroethene	<2.1	<0.52
trans-1,2-Dichloroethene	<2.1	<0.52
1,1-Dichloroethane	<2.1	<0.52
cis-1,2-Dichloroethene	<2.1	<0.52
Chloroform	<0.26	<0.052
1,2-Dichloroethane (EDC)	<0.21	<0.052
1,1,1-Trichloroethane	<2.8	<0.52
Trichloroethene	<0.56	<0.1
1,1,2-Trichloroethane	<0.28	<0.052
Tetrachloroethene	<35	<5.2

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VMP-4R	Client:	Whitman Environmental Sciences
Date Received:	03/23/23	Project:	Canyon Park WES 1683A
Date Collected:	03/22/23	Lab ID:	303378-12 1/4.9
Date Analyzed:	03/24/23	Data File:	032418.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	83	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.3	<0.49
Chloroethane	<13	<4.9
1,1-Dichloroethene	<1.9	<0.49
trans-1,2-Dichloroethene	<1.9	<0.49
1,1-Dichloroethane	<2	<0.49
cis-1,2-Dichloroethene	<1.9	<0.49
Chloroform	<0.24	<0.049
1,2-Dichloroethane (EDC)	<0.2	<0.049
1,1,1-Trichloroethane	<2.7	<0.49
Trichloroethene	1.2	0.22
1,1,2-Trichloroethane	<0.27	<0.049
Tetrachloroethene	<33	<4.9

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VMP-25D	Client:	Whitman Environmental Sciences
Date Received:	03/23/23	Project:	Canyon Park WES 1683A
Date Collected:	03/22/23	Lab ID:	303378-13 1/8.2
Date Analyzed:	03/24/23	Data File:	032423.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	81	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<2.1	<0.82
Chloroethane	<22	<8.2
1,1-Dichloroethene	<3.3	<0.82
trans-1,2-Dichloroethene	24	6.1
1,1-Dichloroethane	<3.3	<0.82
cis-1,2-Dichloroethene	19	4.8
Chloroform	0.48	0.098
1,2-Dichloroethane (EDC)	<0.33	<0.082
1,1,1-Trichloroethane	<4.5	<0.82
Trichloroethene	39	7.3
1,1,2-Trichloroethane	<0.45	<0.082
Tetrachloroethene	100	15

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VMP-15	Client:	Whitman Environmental Sciences
Date Received:	03/23/23	Project:	Canyon Park WES 1683A
Date Collected:	03/22/23	Lab ID:	303378-14 1/5.1
Date Analyzed:	03/24/23	Data File:	032422.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	86	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.3	<0.51
Chloroethane	<13	<5.1
1,1-Dichloroethene	<2	<0.51
trans-1,2-Dichloroethene	<2	<0.51
1,1-Dichloroethane	<2.1	<0.51
cis-1,2-Dichloroethene	<2	<0.51
Chloroform	<0.25	<0.051
1,2-Dichloroethane (EDC)	<0.21	<0.051
1,1,1-Trichloroethane	<2.8	<0.51
Trichloroethene	<0.55	<0.1
1,1,2-Trichloroethane	<0.28	<0.051
Tetrachloroethene	77	11

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VMP-3	Client:	Whitman Environmental Sciences
Date Received:	03/23/23	Project:	Canyon Park WES 1683A
Date Collected:	03/22/23	Lab ID:	303378-15 1/7.3
Date Analyzed:	03/25/23	Data File:	032429.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	83	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.9	<0.73
Chloroethane	<19	<7.3
1,1-Dichloroethene	<2.9	<0.73
trans-1,2-Dichloroethene	<2.9	<0.73
1,1-Dichloroethane	<3	<0.73
cis-1,2-Dichloroethene	13	3.2
Chloroform	1.6	0.33
1,2-Dichloroethane (EDC)	<0.3	<0.073
1,1,1-Trichloroethane	<4	<0.73
Trichloroethene	39	7.2
1,1,2-Trichloroethane	<0.4	<0.073
Tetrachloroethene	420	62

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	Canyon Park WES 1683A
Date Collected:	Not Applicable	Lab ID:	03-0676 MB
Date Analyzed:	03/24/23	Data File:	032412.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	83	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<0.26	<0.1
Chloroethane	<2.6	<1
1,1-Dichloroethene	<0.4	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1
1,1-Dichloroethane	<0.4	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1
Chloroform	<0.049	<0.01
1,2-Dichloroethane (EDC)	<0.04	<0.01
1,1,1-Trichloroethane	<0.55	<0.1
Trichloroethene	<0.11	<0.02
1,1,2-Trichloroethane	<0.055	<0.01
Tetrachloroethene	<6.8	<1

Date of Report: 03/30/23
Date Received: 03/23/23
Project: Canyon Park WES 1683A, F&BI 303378

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 303378-05 1/7.1 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Vinyl chloride	ug/m3	<1.8	<1.8	nm
Chloroethane	ug/m3	<19	<19	nm
1,1-Dichloroethene	ug/m3	<2.8	<2.8	nm
trans-1,2-Dichloroethene	ug/m3	<2.8	<2.8	nm
1,1-Dichloroethane	ug/m3	<2.9	<2.9	nm
cis-1,2-Dichloroethene	ug/m3	<2.8	<2.8	nm
Chloroform	ug/m3	<0.35	<0.35	nm
1,2-Dichloroethane (EDC)	ug/m3	<0.29	<0.29	nm
1,1,1-Trichloroethane	ug/m3	<3.9	<3.9	nm
Trichloroethene	ug/m3	<0.76	<0.76	nm
1,1,2-Trichloroethane	ug/m3	<0.39	<0.39	nm
Tetrachloroethene	ug/m3	<48	<48	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	ug/m3	35	87	70-130
Chloroethane	ug/m3	36	89	70-130
1,1-Dichloroethene	ug/m3	54	94	70-130
trans-1,2-Dichloroethene	ug/m3	54	91	70-130
1,1-Dichloroethane	ug/m3	55	89	70-130
cis-1,2-Dichloroethene	ug/m3	54	86	70-130
Chloroform	ug/m3	66	94	70-130
1,2-Dichloroethane (EDC)	ug/m3	55	93	70-130
1,1,1-Trichloroethane	ug/m3	74	100	70-130
Trichloroethene	ug/m3	73	105	70-130
1,1,2-Trichloroethane	ug/m3	74	109	70-130
Tetrachloroethene	ug/m3	92	122	70-130

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, biased high; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. 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 standard reporting limit. 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.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

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.

303378

SAMPLE CHAIN OF CUSTODY 03/23/23

Page # 1 of 2

Report To Jim Whitman

Company Whitman Env. Sciences

Address 6812 16th Ave NE

City, State, ZIP Seattle, WA 98115

Phone _____ Email wh.tenyard@yahoo.com

SAMPLERS (*signature*)	
PROJECT NAME & ADDRESS Canyon Park	PO # AES 1683A
NOTES:	INVOICE TO

TURNAROUND TIME
- Standard
- RUSH _____
- Rush charges authorized by: _____

SAMPLE DISPOSAL
Default: Clean following final report delivery
Hold (Fee may apply): _____

SAMPLE INFORMATION										ANALYSIS REQUESTED						
Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium		Notes
VMP-16	01	4180	280	IA / (SG)	3-23	30	11:04	4.5	11:58			X				
VMP-23D	02	4177	258	IA / (SG)	"	30	11:45	4.5	11:49			X				
SVE-1	03	8537	241	IA / (SG)	"	30	11:02	4.5	11:11			X				
VMP-2	04	4179	72	IA / (SG)	"	30	11:34	4.5	11:39			X				
VMP-22D	05	9568	66	IA / (SG)	3-22	30	3:19	1	3:26			X				
VMP-17	06	3257	65	IA / (SG)	"	28	3:01	5	3:06			X				
VMP-5	07	7798	68	IA / (SG)	"	30	2:46	4	2:52			X				
VMP-8	08	8394	302	IA / (SG)	"	29	12:36	4.5	12:42			X				

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		AES	3/23/23	1:54
Received by:	ANHPHAN	F&B	03/23/23	13:54
Relinquished by:		**Samples received at 17 °C**		
Received by:				

Friedman & Bruya, Inc.
5500 4th Avenue South
Seattle, WA 98108
Ph. (206) 285-8282
Fax (206) 283-5044

~~303377~~ 303378

SAMPLE CHAIN OF CUSTODY

03/23/23

Page # 2 of 2

Report To Dan Whitman

Company WES

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*)	
PROJECT NAME & ADDRESS Canyon Park	PO # WES 1683A
NOTES:	INVOICE TO

TURNAROUND TIME
X Standard
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Default: Clean following final report delivery
Hold (Fee may apply):

SAMPLE INFORMATION										ANALYSIS REQUESTED						
Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium		Notes
VMP-25D	09	8539	308	IA / (SG)	3-22	30	1:14	4	1:26			X				
VMP-4	10	9569	255	IA / (SG)	"	30	1:06	4.5	1:17			X				
~~VMP-7~~		~~9894~~	~~304~~	~~IA / (SG)~~	~~"~~	~~30~~										
VMP-7	11	9894	304	IA / (SG)	3-22	30	12:36	5"	12:41			X				
VMP-4R	12	8526	60	IA / (SG)	"	30	1:32	4	1:37			X				
VMP-25D	13	8533	62	IA / (SG)	"	30	2:09	5	2:14			X				
VMP-15	14	9899	243	IA / (SG)	"	30	2:38	5	2:43			X				
VMP-3	15	8527	70	IA / (SG)	"	29	2:15	3	2:21			X				

Friedman & Bruya, Inc.
5500 4th Avenue South
Seattle, WA 98108
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:			WES	3-23-23	1:54
Received by:		ANH PHAN	FBI	03/23/23	13:54
Relinquished by:					
Received by:			Samples received at 17 °C		

FORMS\COC\COCTO-15.DOC

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.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

April 11, 2023

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

Dear Mr Whitman:

Included are the results from the testing of material submitted on March 28, 2023 from the Canyon Park WES 1683A, F&BI 303454 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
WES0411R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 28, 2023 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences Canyon Park WES 1683A, F&BI 303454 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
303454 -01	VMP-1

All quality control requirements were acceptable.

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VMP-1	Client:	Whitman Environmental Sciences
Date Received:	03/28/23	Project:	Canyon Park WES 1683A
Date Collected:	03/23/23	Lab ID:	303454-01 1/7.4
Date Analyzed:	03/31/23	Data File:	033026.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	83	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.9	<0.74
Chloroethane	<20	<7.4
1,1-Dichloroethene	<2.9	<0.74
trans-1,2-Dichloroethene	<2.9	<0.74
1,1-Dichloroethane	<3	<0.74
cis-1,2-Dichloroethene	<2.9	<0.74
Chloroform	<0.36	<0.074
1,2-Dichloroethane (EDC)	<0.3	<0.074
1,1,1-Trichloroethane	<4	<0.74
Trichloroethene	31	5.7
1,1,2-Trichloroethane	<0.4	<0.074
Tetrachloroethene	570	84

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	Canyon Park WES 1683A
Date Collected:	Not Applicable	Lab ID:	03-0688 MB
Date Analyzed:	03/30/23	Data File:	033013.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	80	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<0.26	<0.1
Chloroethane	<2.6	<1
1,1-Dichloroethene	<0.4	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1
1,1-Dichloroethane	<0.4	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1
Chloroform	<0.049	<0.01
1,2-Dichloroethane (EDC)	<0.04	<0.01
1,1,1-Trichloroethane	<0.55	<0.1
Trichloroethene	<0.11	<0.02
1,1,2-Trichloroethane	<0.055	<0.01
Tetrachloroethene	<6.8	<1

Date of Report: 04/11/23
Date Received: 03/28/23
Project: Canyon Park WES 1683A, F&BI 303454

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 303473-01 1/5.7 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Vinyl chloride	ug/m3	<1.5	<1.5	nm
Chloroethane	ug/m3	<15	<15	nm
1,1-Dichloroethene	ug/m3	<2.3	<2.3	nm
trans-1,2-Dichloroethene	ug/m3	<2.3	<2.3	nm
1,1-Dichloroethane	ug/m3	<2.3	<2.3	nm
cis-1,2-Dichloroethene	ug/m3	<2.3	<2.3	nm
Chloroform	ug/m3	0.45	0.45	0
1,2-Dichloroethane (EDC)	ug/m3	<0.23	<0.23	nm
1,1,1-Trichloroethane	ug/m3	<3.1	<3.1	nm
Trichloroethene	ug/m3	<0.61	<0.61	nm
1,1,2-Trichloroethane	ug/m3	<0.31	<0.31	nm
Tetrachloroethene	ug/m3	<39	<39	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	ug/m3	35	90	70-130
Chloroethane	ug/m3	36	94	70-130
1,1-Dichloroethene	ug/m3	54	100	70-130
trans-1,2-Dichloroethene	ug/m3	54	96	70-130
1,1-Dichloroethane	ug/m3	55	93	70-130
cis-1,2-Dichloroethene	ug/m3	54	91	70-130
Chloroform	ug/m3	66	100	70-130
1,2-Dichloroethane (EDC)	ug/m3	55	93	70-130
1,1,1-Trichloroethane	ug/m3	74	103	70-130
Trichloroethene	ug/m3	73	109	70-130
1,1,2-Trichloroethane	ug/m3	74	113	70-130
Tetrachloroethene	ug/m3	92	128	70-130

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, biased high; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. 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 standard reporting limit. 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.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

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.

303454

SAMPLE CHAIN OF CUSTODY 03/28/23

Report To Dan Wiltman

Company Wiltman Env. Sciences

Address 4812 16th Ave NE

City, State, ZIP Seattle, WA 98105

Phone _____ Email dwiltman@yahoo.com

SAMPLERS (*signature*)	
PROJECT NAME & ADDRESS Cruyer Park	PO # WES 16831
NOTES:	INVOICE TO

Page # _____ of _____

TURNAROUND TIME
X Standard
RUSH _____
Rush charges authorized by: _____

SAMPLE DISPOSAL
Default: Clean following final report delivery
Hold (Fee may apply): _____

SAMPLE INFORMATION										ANALYSIS REQUESTED						
Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium		Notes
VMP-1	01	8210	224	IA / (SG)	3-23	30	3:00	2	3:04			X				Please report other soil gas samples. Thank you!
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG	Samples received at 20 °C											
				IA / SG												
				IA / SG												

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		WES	3/28/23	4:14
Received by:	Liz Webber-Bruya	F:B	3/28/23	1614
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
5500 4th Avenue South
Seattle, WA 98108
Ph. (206) 285-8282
Fax (206) 283-5044

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.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

March 30, 2023

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

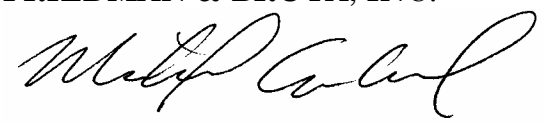
Dear Mr Whitman:

Included are the results from the testing of material submitted on March 23, 2023 from the Canyon Park WES-1683A, F&BI 303377 project. There are 8 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
WES0330R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 23, 2023 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences Canyon Park WES-1683A, F&BI 303377 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
303377 -01	MW-1
303377 -02	MW-2
303377 -03	MW-3

All quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-1	Client:	Whitman Environmental Sciences
Date Received:	03/23/23	Project:	Canyon Park WES-1683A, F&BI 303377
Date Extracted:	03/24/23	Lab ID:	303377-01
Date Analyzed:	03/24/23	Data File:	032412.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	md

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	78	126
Toluene-d8	99	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	Client:	Whitman Environmental Sciences
Date Received:	03/23/23	Project:	Canyon Park WES-1683A, F&BI 303377
Date Extracted:	03/24/23	Lab ID:	303377-02
Date Analyzed:	03/24/23	Data File:	032413.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	md

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	78	126
Toluene-d8	103	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	Client:	Whitman Environmental Sciences
Date Received:	03/23/23	Project:	Canyon Park WES-1683A, F&BI 303377
Date Extracted:	03/24/23	Lab ID:	303377-03
Date Analyzed:	03/24/23	Data File:	032409.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	md

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	78	126
Toluene-d8	100	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	11
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:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	Canyon Park WES-1683A, F&BI 303377
Date Extracted:	03/24/23	Lab ID:	03-0675 mb
Date Analyzed:	03/24/23	Data File:	032407.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	78	126
Toluene-d8	102	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		

Date of Report: 03/30/23
Date Received: 03/23/23
Project: Canyon Park WES-1683A, F&BI 303377

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

Laboratory Code: 303377-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	74	50-150
Chloromethane	ug/L (ppb)	10	<10	79	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	88	50-150
Bromomethane	ug/L (ppb)	10	<5	87	50-150
Chloroethane	ug/L (ppb)	10	<1	84	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	93	50-150
Acetone	ug/L (ppb)	50	<50	51	50-150
1,1-Dichloroethene	ug/L (ppb)	10	<1	90	50-150
Hexane	ug/L (ppb)	10	<5	90	50-150
Methylene chloride	ug/L (ppb)	10	<5	87	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	91	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	93	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	92	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	98	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	97	50-150
Chloroform	ug/L (ppb)	10	<1	94	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	69	50-150
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	97	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	94	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	94	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	92	50-150
Benzene	ug/L (ppb)	10	<0.35	92	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	88	50-150
1,2-Dichloropropane	ug/L (ppb)	10	<1	85	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	95	50-150
Dibromomethane	ug/L (ppb)	10	<1	84	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	96	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	94	50-150
Toluene	ug/L (ppb)	10	<1	98	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	93	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	96	50-150
2-Hexanone	ug/L (ppb)	50	<10	91	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	94	50-150
Tetrachloroethene	ug/L (ppb)	10	11	103 b	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	96	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	97	50-150
Chlorobenzene	ug/L (ppb)	10	<1	91	50-150
Ethylbenzene	ug/L (ppb)	10	<1	103	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	97	50-150
m,p-Xylene	ug/L (ppb)	20	<2	95	50-150
o-Xylene	ug/L (ppb)	10	<1	93	50-150
Styrene	ug/L (ppb)	10	<1	97	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	98	50-150
Bromoform	ug/L (ppb)	10	<5	100	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	96	50-150
Bromobenzene	ug/L (ppb)	10	<1	97	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	91	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	105	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	93	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	95	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	92	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	96	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	93	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	97	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	97	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	99	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	97	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	96	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	90	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	101	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	101	50-150
Naphthalene	ug/L (ppb)	10	<1	89	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	97	50-150

Date of Report: 03/30/23
Date Received: 03/23/23
Project: Canyon Park WES-1683A, F&BI 303377

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	97	102	46-206	5
Chloromethane	ug/L (ppb)	10	91	103	70-142	12
Vinyl chloride	ug/L (ppb)	10	99	112	70-130	12
Bromomethane	ug/L (ppb)	10	94	98	56-197	4
Chloroethane	ug/L (ppb)	10	93	103	70-130	10
Trichlorofluoromethane	ug/L (ppb)	10	98	112	70-130	13
Acetone	ug/L (ppb)	50	54	55	10-140	2
1,1-Dichloroethene	ug/L (ppb)	10	100	108	70-130	8
Hexane	ug/L (ppb)	10	100	105	54-136	5
Methylene chloride	ug/L (ppb)	10	97	100	43-134	3
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	100	109	70-130	9
trans-1,2-Dichloroethene	ug/L (ppb)	10	102	110	70-130	8
1,1-Dichloroethane	ug/L (ppb)	10	101	108	70-130	7
2,2-Dichloropropane	ug/L (ppb)	10	109	125	70-130	14
cis-1,2-Dichloroethene	ug/L (ppb)	10	100	108	70-130	8
Chloroform	ug/L (ppb)	10	104	107	70-130	3
2-Butanone (MEK)	ug/L (ppb)	50	74	75	17-154	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	105	111	70-130	6
1,1,1-Trichloroethane	ug/L (ppb)	10	102	109	70-130	7
1,1-Dichloropropene	ug/L (ppb)	10	102	107	70-130	5
Carbon tetrachloride	ug/L (ppb)	10	96	103	70-130	7
Benzene	ug/L (ppb)	10	100	105	70-130	5
Trichloroethene	ug/L (ppb)	10	94	100	70-130	6
1,2-Dichloropropane	ug/L (ppb)	10	92	95	70-130	3
Bromodichloromethane	ug/L (ppb)	10	100	109	70-130	9
Dibromomethane	ug/L (ppb)	10	93	93	70-130	0
4-Methyl-2-pentanone	ug/L (ppb)	50	98	95	68-130	3
cis-1,3-Dichloropropene	ug/L (ppb)	10	102	104	69-131	2
Toluene	ug/L (ppb)	10	108	107	70-130	1
trans-1,3-Dichloropropene	ug/L (ppb)	10	105	102	70-130	3
1,1,2-Trichloroethane	ug/L (ppb)	10	105	102	70-130	3
2-Hexanone	ug/L (ppb)	50	92	90	45-138	2
1,3-Dichloropropane	ug/L (ppb)	10	101	104	70-130	3
Tetrachloroethene	ug/L (ppb)	10	110	110	70-130	0
Dibromochloromethane	ug/L (ppb)	10	102	100	60-148	2
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	108	105	70-130	3
Chlorobenzene	ug/L (ppb)	10	100	102	70-130	2
Ethylbenzene	ug/L (ppb)	10	112	110	70-130	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	97	106	70-130	9
m,p-Xylene	ug/L (ppb)	20	103	102	70-130	1
o-Xylene	ug/L (ppb)	10	100	101	70-130	1
Styrene	ug/L (ppb)	10	100	102	70-130	2
Isopropylbenzene	ug/L (ppb)	10	104	107	70-130	3
Bromoform	ug/L (ppb)	10	106	103	69-138	3
n-Propylbenzene	ug/L (ppb)	10	100	106	70-130	6
Bromobenzene	ug/L (ppb)	10	101	102	70-130	1
1,3,5-Trimethylbenzene	ug/L (ppb)	10	99	100	70-130	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	111	111	70-130	0
1,2,3-Trichloropropane	ug/L (ppb)	10	91	100	70-130	9
2-Chlorotoluene	ug/L (ppb)	10	99	102	70-130	3
4-Chlorotoluene	ug/L (ppb)	10	97	98	70-130	1
tert-Butylbenzene	ug/L (ppb)	10	100	103	70-130	3
1,2,4-Trimethylbenzene	ug/L (ppb)	10	97	102	70-130	5
sec-Butylbenzene	ug/L (ppb)	10	102	106	70-130	4
p-Isopropyltoluene	ug/L (ppb)	10	102	106	70-130	4
1,3-Dichlorobenzene	ug/L (ppb)	10	103	105	70-130	2
1,4-Dichlorobenzene	ug/L (ppb)	10	102	104	70-130	2
1,2-Dichlorobenzene	ug/L (ppb)	10	98	103	70-130	5
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	99	95	70-130	4
1,2,4-Trichlorobenzene	ug/L (ppb)	10	103	112	70-130	8
Hexachlorobutadiene	ug/L (ppb)	10	108	114	70-130	5
Naphthalene	ug/L (ppb)	10	97	101	70-130	4
1,2,3-Trichlorobenzene	ug/L (ppb)	10	102	113	70-130	10

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, biased high; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. 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 standard reporting limit. 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.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

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.

303377

SAMPLE CHAIN OF CUSTODY 03/23/23 VW2

Report To Paul Whitman

Company Whitman Env. Sciences

Address 618 16th Ave NE

City, State, ZIP Seattle, WA 98115

Phone _____ Email whitmanp@yahoo.com

SAMPLERS (*signature*)

PROJECT NAME: Canyon Park

PO #: OES-1683A

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

Page # _____ of _____

TURNAROUND TIME
- [x] 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
MW-1	01A-C	3-22-23	11:08	water	3					X							
MW-2	02	"	11:30	"	"					X							
MW-3	03	"	12:00	"	"					X							
								Samples received at 15 °C									

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		OES	3-23-23	1:37
Received by:	ANH PHAN	FSB	03/24/23	13:37
Relinquished by:				
Received by:				

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