Kennedy/Jenks Consultants

32001 32nd Avenue South, Suite 100
Federal Way, Washington 98001
253-835-6400
FAX: 253-952-3435

Soil Vapor Extraction (SVE) System Construction Report

4 December 2012

Prepared for

Washington State Department of Ecology
Central Regional Office
15 West Yakima Avenue, Suite 200
Yakima, Washington 98902

K/J Project No. 1196016.00

Table of Contents

Table of Contents (cont'd)

List of Tables

List of Figures and Charts

List of Appendices

Section 1: Introduction

This *Soil Vapor Extraction (SVE) System Construction Report* (Report) documents the construction and system startup/performance testing of the Frank Wear SVE system at the former Frank Wear Dry Cleaners Site located in Yakima, Washington (site).

Field activities described in this report were conducted in general accordance with 1) *Specifications for Installation of Soil Vapor Extraction System, Frank Wear Site, Yakima, WA* (Project Manual) (Washington State Department of Ecology 2012) and 2) F*inal Soil Vapor Extraction System, Interim Action Plan* (Plan) (Kennedy/Jenks Consultants 2012).

1.1 Background

The site was historically used as a dry cleaner from the early 1940s to 2000. During many of those years, the dry cleaner used tetrachloroethene (PCE) as the dry cleaning solvent. As a result of the past dry cleaning operations, PCE has been detected in soil and groundwater at and adjacent to the site. PCE was also detected in soil vapor samples during a Soil Vapor Survey conducted in 1995 (AGRA Earth and Environmental 1995). A building located adjacent to the site is currently operated as a childcare center (Buckle My Shoe Early Learning Center). The location of the former Frank Wear Cleaners building and childcare center is shown on Figure 1.

In September and October 2011, a vapor intrusion study was performed at the childcare center to evaluate if PCE or other volatile organic compounds (VOCs) may be migrating into the building occupied by children and onsite staff. The vapor intrusion study consisted of sampling indoor air vapors at several locations in the building and outdoor ambient air on two occasions (24 September 2011 and 20 October 2011) and measuring the subslab soil vapor concentrations at several locations below the building (25 September 2011). The results of the investigation were summarized in the *Vapor Intrusion Study Report* (Kennedy/Jenks Consultants 2011) which concluded indoor air PCE concentrations at the childcare center exceeded Model Toxics Control Act (MTCA) Method B indoor air cleanup levels. The report recommended that a SVE system be constructed at the site to mitigate vapor intrusion of PCE into the childcare center.

1.2 Objectives of SVE System

The objectives for operation of the SVE system were to: 1) mitigate soil vapor intrusion of chemicals of concern (COCs) into the childcare center by creating subslab depressurization (SSD), and 2) physically remove residual COC mass from subsurface and groundwater. Three SVE wells were installed along the perimeter of the Buckle My Shoe Early Learning Center building to create an effective SSD footprint under the building and two additional SVE wells were installed in areas where PCE was historically detected in soil and groundwater.

1.3 SVE System Design/Bidding Process

Kennedy/Jenks Consultants assisted the Washington State Department of Ecology (Ecology) with preparation of technical plans and specifications for the construction of the SVE system.

Two separate bid packages were prepared for the SVE system construction; one for procurement of the SVE equipment and a second for the construction of the SVE facility. Bidding was performed by Ecology for both projects under an Ecology public works contracts for the equipment procurement in December 2011 and for construction in February 2012. The bid for providing the SVE equipment was awarded to Maple Leaf Environmental (currently newterra, Ltd.) and Anderson Environmental Contractors (Anderson) of Kelso, Washington was awarded the construction bid.

Kennedy/Jenks Consultants designed the SVE wells for use with the SVE system. The SVE wells were installed by Major Drilling Group of Portland, Oregon in March 2012.

1.4 Health and Safety

Kennedy/Jenks Consultants prepared a site-specific health and safety plan (HASP) for use by Kennedy/Jenks employees during construction and sampling field activities. Anderson prepared their own HASP for their employees and conducted daily safety briefings prior to field activities to discuss scope of work and health and safety considerations relevant to the day's activities.

1.5 Permits

The City of Yakima required two permits for the project: 1) a new building construction permit and 2) an electrical permit, which were obtained by the contractor. Initially, the Yakima Regional Clean Air Agency (YRCAA) indicated that an air discharge permit would be required for the SVE system discharge and a permit application was submitted on behalf of Ecology on 27 January 2012 by Kennedy/Jenks Consultants. Following a meeting between Ecology and YRCAA, it was decided that the SVE system discharge would not require a permit. Consequently, no permit was issued to Ecology. Copies of the City of Yakima permits (excluding the air permit application) are presented in Appendix A.

Section 2: SVE System Construction and Startup

This section describes the construction and initial startup operation and monitoring of the SVE system Startup of the SVE system was conducted in late June and early July 2012.

2.1 SVE Well Construction

The SVE wells (SVE-01 through SVE-05) were installed by Major Drilling Group between 26 and 28 March 2012. Three wells were constructed at the northern, northwestern, and southwestern corners of the existing childcare center building to induce SSD. Two additional wells were located north of the childcare center and west, respectively, near areas of higher groundwater concentrations as reported in the Plan. SVE well locations are shown on Figure 2 and on Drawing C-02 in the Record Drawings presented in Appendix B. SVE well construction logs are presented in Appendix C.

2.1.1 Preliminary Field Activities

Preliminary SVE system construction activities consisted of utility locates, establishing construction limits and installing security fencing, and preparing measurement take-offs. Kennedy/Jenks Consultants contacted Applied Professional Services (APS) to locate underground utilities prior to performing drilling activities for SVE wells. In addition, Washington 8-1-1 was contacted to locate utilities on public property immediately adjacent to the site.

2.1.2 SVE Well Construction

Drilling for the SVE well construction was performed using sonic drilling techniques, using a 6-inch inside diameter (ID) borehole. Boreholes were completed to a depth of approximately 20 feet below ground surface (bgs). Soil samples were collected continuously using grab sampling techniques and attempts were made to collect soil samples for analysis using a split-spoon sampler at 5-foot intervals. Portions of the soil samples retrieved during drilling were screened for organic vapors using a photoionization detector [PID; 11.7 electron volts (eV)] and tested for the presence of iridescent sheen. Soils encountered were visually classified using the Unified Soil Classification System (USCS), and observations were recorded on Boring and Well Construction Logs (see Appendix C).

The SVE wells were constructed inside the 6-inch (ID) sonic borehole using 4-inch-diameter Schedule 40 polyvinyl chloride (PVC) casing and 0.020-inch machine-slotted screen, and packed with 10/20 sand. Each well was completed with an upper and lower screened interval separated by a 2-foot blank section of PVC casing from approximately 13 feet to 15 feet bgs. In general, the upper and lower vertical screened intervals of the SVE wells measured approximately 5 feet in length, typically from 8 feet to 13 feet bgs and 15 feet to 20 feet bgs, respectively. The annular space adjacent to the blank section for 13 to 15 feet was surrounded by 20/40 silica sand to reduce short-circuiting between the slotted screen sections.

2.2 SVE System Construction

The SVE system was constructed from late April to early July 2012 with primary system components in operational condition by end of June 2012. Construction activities were performed by Anderson. Total Control Electric of Yakima, Washington, served as the electrical subcontractor to Anderson. Photographs of the system construction activities are provided in Appendix D.

2.2.1 System Trenching/Piping and SVE Well Construction

To connect the SVE wells to the system, trenches were excavated and piping was installed outside the childcare center building. For each SVE well, a drop pipe was installed with a rubber packer placed within the 2-foot blanked section of the well (i.e., to permit extraction from lower screened interval). The 2-inch diameter Schedule 40 PVC pipe was installed inside the 4-inch well. The 2-inch drop pipe was slotted from 15 feet 20 feet bgs. A 2-inch by 4-inch diameter Tri-seal rubber packer was placed around the 2-inch pipe at 13 to 15 feet bgs to seal the upper zone from the lower zone. This construction provided the option to isolate the upper and lower screen intervals for soil vapor extraction.

Both pipes tee to 2-inch diameter Schedule 80 PVC piping between approximately 3 and 4 feet underground and route to the SVE utility building. The 2-inch pipe was extended to the surface to allow access for water level measurements and sealed to the top of the 4-inch well pipe by 2-inch reducing tee with bentonite chips. The wellhead was completed with a threaded cap on the 2-inch extension and encased in a standard well monument and protective concrete apron. The well heads were constructed to allow adjustment of extraction vapor from the upper and/or lower screen intervals from inside the SVE utility building (i.e., valves for adjustment are located inside the building). Subsurface piping was placed in trenches and bedded with sand to provide protection around the pipe. The sand was covered with 5/8-inch crushed surface top course (CSTC) material. Subsurface piping from SVE wells were extended up on the outside of the SVE building and penetrated through the wall of the building. Exposed piping was secured in a protective box lined with 6-inch thick R19 insulation. Piping in the SVE utility building was affixed to and supported by Unistrut anchor supports.

2.2.2 SVE Utility Building Construction, Piping, and Equipment

SVE system components, supplied by newterra of Brockville, Ontario, were delivered to the site as skid mounted units. The primary components of the SVE system were assembled inside an 8-foot by 12-foot insulated wood building (SVE utility building) constructed on a concrete secondary containment pad, which includes the following:

- A 6-inch Schedule 80 PVC extraction manifold supporting two pipes from each SVE well (upper and lower zone piping).
    - Piping from each SVE well at the manifold is equipped with a vacuum gauge, flow control ball valve, ½-inch ball valve sample port for soil vapor sample collection, and a ¼-inch plug port for flow measurements via a hot-wire anemometer.

- A 140-gallon vacuum rated vapor liquid separator (VLS) to eliminate moisture from the SVE system.

  - Standard features include 6-inch inlet and outlet ports, 4-inch cleanout, sight glass with encased float switches, ¾-horsepower (hp) transfer pump, and manual drain. Condensate collected in the 140-gallon moisture separator will be transferred to a 165-gallon high density polyethylene (HDPE) tank for increased holding times. This tank contains additional float switches to notify personnel when disposal is required. A submersible pump and hose are located in the SVE utility building to pump condensate from the holding tank into a transfer container.

- A vapor extraction blower to create a negative pressure in the SVE wells.

  - The blower skid consists of a Rotron regenerative blower, model EN808BA72MXL with a 7.5 hp, 480-volt, 3-phase motor, 6-inch flanged connection to a Solberg inlet filter/silencer reduced to 3-inch Schedule 80 PVC blower inlet piping and 3-inch steel discharge piping. The inlet piping to the blower contains a spring-operated vacuum relief valve set at 6 inches mercury (Hg), a 0 to 100-inch water column (WC) vacuum gauge, temperature gauge, 0 to 2-inch WC differential pressure gauge for air flow rate determination via chart, and a 0.5 to 2 pounds per square inch differential (psid) pressure switch to alarm when the system has low vacuum. The blower is capable of 175 standard cubic feet per minute (SCFM) at 60 inches WC.

- Granular activated carbon (GAC) to treat extracted soil vapor prior to venting to the atmosphere.

  - The vapor-phase GAC filter system consists of two 2,000-pound units aligned in series on a concrete pad external to the SVE utility building. The GAC filtration system is positioned upstream of the blower to reduce potential negative effects on adsorption performance due to an increase in temperature across the blower. The system includes 0 to 60-inch WC vacuum gauges and sample ports are provided upstream, between, and downstream of the GAC vessels.

- Electronic monitoring and controlling equipment capable of sensing system faults, powering off in the event of a system fault, and notifying specified persons of system fault events through an autodialer.

  - The autodialer notification alarms include high level VLS float switch, high level discharge tank, high-high level discharge tank, low pressure switch, etc. The system also includes a timer for selecting desired operational periods.

- Noise barriers and muffling controls to reduce the potential noise emissions.

  - Vibrations are reduced by placing the blower on a steel skid plate and bolting to the floor. A 6-inch flanged Solberg silencer/filter is piped to the inlet of the blower. The manifold, blower, and moisture separator are contained inside a constructed 8-foot by 12-foot wood utility building with insulation that further reduces noise.

- A 3-inch discharge piping to vent GAC-treated soil gas, which exits the SVE utility building and terminates with a rain guard at approximately 15 feet above ground surface.

- Five subslab monitoring points installed by Kennedy/Jenks Consultants in the concrete floor of the Buckle My Shoes Early Learning Center building to monitor system performance for negative pressures below the building slab.

    - Monitoring points were completed using the Vapor Pin kits supplied by Cox Colin and Associates, Inc. The locations of subslab monitoring points are shown in Figure 3.

2.3 Resident Engineer Services

During construction activities, Kennedy/Jenks Consultants provided resident engineering services to review, approve, and document construction activities and for general adherence to technical specifications. During construction activities, excavated soil was hauled offsite, imported soil was compaction tested, and poured concrete was tested for strength. Weigh tickets for excavated soil transported for disposal, soil compaction test results, and concrete break strength test results are presented in Appendix E.

2.4 Investigation-Derived Waste

During SVE construction activities, the following investigation-derived waste (IDW) was generated:

- **Drilling Soil Cuttings**: Soil cuttings were generated during advancement of soil borings and construction of SVE wells. Soil cuttings were transferred to labeled, 55-gallon steel drums and stored onsite pending characterization and disposal. Drums were transported offsite along with IDW generated by Hart-Crowser during additional monitoring well installation.

- **Residual Soil**: Residual soil was generated during SVE trenching activities. The residual soil was stored onsite on plastic sheeting and covered with plastic sheeting to prevent exposure to the elements. Anderson characterized the excavated soil in accordance with the specifications and the waste was disposed of at a subtitle D waste facility, Waste Connections WASCO County Landfill (WASCO), located in The Dalles, Oregon. Residual soils were transported to WASCO by D&R Dietrich Sons Truck Hauling. Landfill weigh disposal receipts are presented in Appendix E.

- **Impacted Import Material for Backfill**: The Contractor provided three types of imported material for backfill: bedding sand, 1-1/4-inch crushed stone base course (CSBC) for general trench backfill, and 5/8-inch CSTC for structural backfill. These materials were sampled in accordance with the project manual specifications to confirm the material being delivered to the site were free of contaminants. To maintain construction progress, Anderson chose to continue construction activities, including trench backfilling, prior to receiving analytical results for the fill materials.

  The analytical results of the CSBC used to backfill pipe trenches contained carcinogenic polycyclic aromatic hydrocarbons (cPAHs) at concentrations above MTCA Method A cleanup levels. Following discovery that the backfill contained unacceptable

concentrations of cPAHs, Ecology directed Anderson to conduct sampling along trench sections where CSBC was placed to determine the amount of material that would require removal and replacement with clean material. Over a series of several sampling events, Anderson characterized the trench backfill for semivolatile organic compounds (SVOCs), removed the material as directed, and replaced the trench material with clean structural fill (CSTC). Analytical results for imported material are provided in Appendix F. Tables 1 through 4 in Appendix F summarize the results of the additional imported backfill sampling. Figures 2, 3, and 4 (Appendix F) show the locations of samples collected and materials removed. Impacted imported material that was removed was stockpiled separately from native excavated soil, covered with plastic liner, and disposed of at the Contractor's cost. This material was transferred by D&R Dietrich and Sons trucking for disposal at WASCO. Landfill weigh disposal receipts are presented in Appendix E.

- **Condensate Water**: Accumulated moisture (if any) will be temporarily contained in the 140-gallon VLS and transferred by a float controlled ¾-hp pump to a 160-gallon HDPE tank within the SVE utility building. When the condensate has approached approximately 80 gallons in the HDPE holding tank and requires disposal, an alarm will trigger and the autodialer system will notify Ecology and Kennedy/Jenks Consultants. If condensate water is produced, it will be sampled and characterized, then transported offsite to an appropriate waste disposal facility. After 4 months of operation, no condensate water has been generated requiring disposal.

2.5 System Startup and Performance Testing

2.5.1 System Startup

Substantial completion of construction activities occurred by 22 June 2012 and a site walk to identify punch list items was conducted on 25 June 2012. The blower motor was bumped to confirm correct rotation. The air dilution valve and flow control valves were opened to each SVE well to minimize work load on the blower motor. The SVE system was started to evaluate operating conditions, i.e. no excessive vibrations, no leaks, or other construction-related issues. Leaks were observed at the SVE well ball valves and eliminated by tightening unions.

SVE utility building electrical components such as lighting, outlets, and heat trace were tested for proper installation and functionality. A checklist of equipment startup operation was completed for newterra equipment and finalized with the installation of a phone line for the autodialer. The checklist included testing system controls and alarms. The equipment checklist was sent to newterra to validate the warranty on 24 October 2012. On 25 October 2012, newterra acknowledged receipt of the checklist and confirmed equipment warranty had been validated upon receipt of the checklist.

Additional startup operations consisted of determining safe operating limits of the SVE system by adjusting the SVE well and air dilution valves. Flow rates, vacuum pressures, and discharge temperatures were noted during various adjustments between extraction from upper and lower zones. The SVE well air extraction valves and the air dilution valve were systematically closed to determine the number of wells that could be operated before the blower motor was overworked. The following operating limits were observed during the ambient conditions upon startup:

- The air dilution valve should be completely open or the system shut off during re-configuration of SVE well extraction conditions (when extraction is changed from upper to lower zone wells) to avoid overworking the blower.

- No less than three SVE wells should be operated in either the upper or lower zones at any time to avoid blower overload.

- The vacuum at the blower inlet should not exceed 50 inches WC and the discharge temperature should not exceed 140 degrees Fahrenheit to avoid possible damage to discharge piping.

2.5.2 System Performance Testing

On 22 June 2012, baseline pressure and depth-to-water measurements were taken of both the upper and lower zones of each SVE well prior to starting the system. These measurements were later used to compare the responses of the targeted area under varying SVE system operating conditions and to determine the radii of influence of individual SVE wells.

2.5.3 Multiple SVE Well Testing: General Performance

Performance testing to establish general system operations consisted of testing four configurations:

1. Extracting from five SVE wells in the upper zone only

2. Extracting from five SVE wells in the lower zone only

3. Extracting from three SVE wells in the upper zone only: SVE-3, SVE-4, SVE-5

4. Extracting from three SVE wells in the lower zone only: SVE-3, SVE-4, SVE-5.

As the SVE wells were brought online, the valves for each well were fully opened to provide a baseline for initial comparison and the air dilution valve was fully closed. Extracting all five SVE wells from the upper zone produced the highest extraction flow rate and the lowest vacuum pressure (i.e. the lowest duty on the blower). Extracting from wells SVE-3, SVE-4, and SVE-5 adjacent to the childcare center building in the upper zone produced slightly more extraction flow rate and had less vacuum pressure. Extracting the three SVE wells from the lower zone only produced the same extraction flow rate as operating all five SVE wells from the lower zone only but had a considerable increase in vacuum pressure. Pressure was measured in each of the five subslab monitoring points for each test. These measurements ranged from negative (vacuum) 0.022 inch WC to negative 0.168 inch WC. SSD values in the range of 0.025 to 0.035 inch WC vacuum are generally considered sufficient to maintain downward pressure gradients and mitigate vapor intrusion [US Environmental Protection Agency (EPA) 1993]. Additional data collected during testing include pressure measurements temperature and contaminant concentrations prior to and after the GAC units. The data from these tests are tabulated on field sheets presented in Appendix G. In general, operation in the upper zone in either the three or five well configuration produced higher negative vacuum pressures under the childcare center building foundation (i.e. increased SSD).

2.5.4 Individual SVE Well Testing: Pressure Radius of Influence (ROI)

On 28 June 2012, testing began on each individual SVE well operating from the lower zone first and then the upper zone. Only one well was tested at a time and valves were closed on the remaining SVE wells. The air dilution valve was initially fully opened during each test and then slowly closed until a targeted vacuum was reached at the SVE well inlet piping to the manifold. In general, each well was tested at 20, 30, and 40 inches WC and the corresponding extraction flow rates. Monitoring wells were identified for each SVE well test that ranged from 15.5 feet to 67 feet distance from the operating well. Test caps were placed on the monitoring wells and baseline ambient pressures were measured to compare vacuums induced from operating the SVE well at the predetermined vacuums. The apparent effective pressure ROI is given as the distance at which the response pressure (positive or negative) has decreased to approximately 0.01 inch WC (Hinchee 1996). The apparent effective ROI for the operation of the system between 20 and 40 inches WC at the manifold from either the upper or lower zones can be determined by establishing the furthest distance from the operating SVE well a vacuum response of 0.01 inch WC is measured. The pressure ROI data are collated for each of the SVE wells and presented in Appendix H. Figure 4 shows the approximate ROI for each SVE well operating at 20 inches WC as measured at the manifold.

Section 3: SVE System Operations, Monitoring, Sampling Results and Data Analyses

This section summarizes the initial monitoring and sampling results of the Frank Wear SVE system operation.

3.1 System Operation

On 3 July 2012, the primary components of the Frank Wear SVE system were activated and extracted soil gas was treated using the GAC treatment system and then vented to the atmosphere. The system was configured to extract soil gas from the upper zone of wells SVE-3, SVE-4, and SVE-5. The system was operated in this manner to produce the greatest subslab depressurization of the adjacent Buckle My Shoe Early Learning Center and to reduce the initial effort of the blower motor until further monitoring had occurred. During the first months of operation, the following operating parameters were:

- For each individual well piping at the extraction manifold, flow measurements were made using a hot-wire anemometer. Total flow was also measured at the blower inlet.
- Partial vacuum measurements were recorded from vacuum gauges for each individual well, between the GAC vessels, and at the blower inlet to assess pressure drop through the system.
- A PID was used to measure approximate VOCs concentrations in the extracted soil vapor. Measurements were made for individual wells at the extraction manifold, prior to GAC treatment (i.e., total influent), between GAC vessels, and at the effluent to assess conditions of extracted soil vapor and allow for qualitative correlation to laboratory analytical data (see below).
- Temperature was measured at the blower discharge and at the discharge piping transition to PVC.
- Soil vapor samples were collected at the influent (total influent), between the GAC vessels (i.e., midpoint), and the effluent port and submitted for chemical analyses. Soil vapor sampling and chemical analyses are discussed in Section 3.2.3.

3.2 System Monitoring

Over a three-month period (July through September 2012), the Frank Wear SVE system has operated continually with only minor shut-downs. System performance monitoring sheets completed during this time are presented in Appendix G. A summary of system monitoring observations are as follows:

- Individual well manifold vacuum measurements have remained relatively stable, varying between 17 and 22 inches WC per well.

- Extraction rates have remained relatively stable for each SVE well, varying between 60 to 70 SCFM for SVE-3, 105 to 111 SCFM for SVE-4, and 98 to 104 SCFM for SVE-5.
- No condensate water has been collected from the air-water moisture separator.
- Monitoring of VOC concentrations before, in-between, and after the treatment by the SVE GAC treatment unit by PID occurred on two of four field observations. Concentrations ranged from 2.7 to 6.6 parts per million (ppm).
- Using the monitoring points (SS-1 through SS-5) in the floor slab of the childcare facility to measure SSD, vacuum beneath the floor slab ranged from 0.033 to 0.162 inch WC, which is sufficient to maintain negative pressure and mitigate vapor intrusion into the building.

3.3 GAC Treatment System Soil Vapor Samples

Bi-weekly soil vapor samples were collected from the SVE system during the first three months of operation, on the following dates:

- 3 July 2013 samples: Influent 1A, Inbetween 1B, Effluent 1C
- 30 July 2012 samples: FW-Influent-001, FW-Inbtwn-070, FW-effluent
- 13 August 2012 samples: FW-Influent-323, FW-Inbtwn-219, FW-effluent-217
- 28 August 2012 samples: FW-Influent-067, FW-Inbtwn-219, FW-Effluent-355
- 12 September 2012 samples: FW-Influent-101, FW-Inbtwn-105, FW-Effluent-102
- 25 September 2012 samples: FW-Influent-074, FW-Inbtwn-241, FW-Effluent-245.

Soil vapor samples were collected from the SVE GAC treatment system at the influent, in-between, and effluent sampling ports of the GAC vessels into pre-cleaned, evacuated 400 milliliter (mL) Summa™ canisters using a short piece of Tygon tubing connecting the sampling barb on the Summa™ canister to the barb(s) on each ½-inch ball valve on the SVE system. Samples were analyzed for VOCs by modified EPA Method TO-15 at H&P Mobile Geochemistry (H&P), of Carlsbad, California.

On 3 July 2012, PCE was detected at concentrations of 7,700 micrograms per cubic meter (µg/m^3) in the influent soil vapor sample, 24 µg/m^3 in the midpoint sample, and 17 µg/m^3 in the effluent sample. Benzene, toluene, and acetone were also detected in each of the influent, midpoint, and effluent samples. Benzene was detected at concentrations of 92 µg/m^3 in the influent and 23 µg/m^3 at the effluent of the treatment system during the 3 July 2012 sampling event. The source of benzene, toluene and acetone are uncertain, but likely associated with past industrial activities at this location.PCE concentrations significantly decreased in the five subsequent soil vapor samples collected from the influent port, ranging from 110 to 380 µg/m^3. PCE concentrations have decreased in subsequent samples collected from the midpoint and effluent ports to concentrations below the laboratory reporting limit (6.9 µg/m^3).

Benzene was also detected in influent, midpoint, and effluent samples collected during subsequent sampling events at the following concentrations ranges:

- Influent: Benzene ranges from 32 to 100 µg/m^3
- Midpoint: Benzene ranges from 28 to 430 µg/m^3
- Effluent: Benzene ranges from 23 to 190 µg/m^3.

Additional VOCs detected in the influent, midpoint, and effluent samples including constituents such as chloroform, ethylbenzene, xylenes, dichlorodifluoromethane, etc., will be monitored during future SVE system operation.

Analytical results for all SVE system samples are summarized in Table 1. Laboratory analytical reports for SVE system samples are presented in Appendix I. Influent soil vapor PCE and benzene concentrations have been graphed and are provided in Appendix I.

3.3.1 Mass Removal Estimate

Cumulative mass removal of PCE over time were estimated using influent vapor sample analytical results and measured air flow rates. A graph of the estimated cumulative PCE mass removal is provided in Appendix I. PCE mass removal was calculated as the product of the influent VOC concentrations (i.e., sum of detected PCE concentrations) averaged between sampling events, the average influent flow rate of 250 cubic feet per minute (CFM), and the time accumulated since the previous sampling event. For the purpose of this evaluation, measured airflow rates and concentrations were assumed to be constant between sampling events. For the initial three months of system operation, PCE mass removal is estimated at approximately 2.8 pounds (including the 25 September 2012 sampling event).

3.3.2 Post-Startup – Indoor and Outdoor Ambient Air/Subslab Sampling

In September and October 2011, Kennedy/Jenks Consultants conducted a vapor intrusion study at the Buckle My Shoe Early Learning Center to evaluate if vapor intrusion of PCE and other VOCs were potentially occurring. Analytical results indicated PCE concentrations inside the childcare facility were above MTCA Method B indoor air cleanup levels. After startup of the SVE system, Kennedy/Jenks Consultants performed follow-up indoor air, outdoor air, and subslab soil vapor sampling to monitor the effects of the SVE and SSD on the childcare center building. Indoor and outdoor ambient air and subslab soil vapor analytical results are presented in Tables 2 and 3, respectively. Laboratory analytical reports for indoor air, outdoor ambient air, and subslab soil vapor samples are presented in Appendix J.

Indoor air and outdoor ambient air, and subslab soil vapor samples were collected during similar times as the SVE system soil vapor samples, on the following dates:

- 7 July 2012 samples: Indoor air and outdoor ambient air sampling
- 13 August 2012 samples: Indoor air and outdoor ambient air, and subslab soil vapor sampling

- 12 September 2012 samples: Indoor air and outdoor ambient air, and subslab soil vapor sampling.

Samples were collected using certified, pre-cleaned, 6-liter Summa™ canisters. A description of the indoor and outdoor sampling locations is provided on the completed Field Indoor Air Sampling Logs presented in Appendix J. Field notes obtained during subslab soil vapor sample collection are provided on the completed Subslab and Soil Vapor Survey Log Sheets presented in Appendix J.

On 6 July 2012, indoor air and outdoor ambient air samples were collected over a 12-hour time period and analyzed for VOCs by EPA Method TO-15 with selected compounds analyzed in selective ion monitoring (SIM) mode at Air Toxics, Ltd. (ATL) of Folsom, California. Indoor air PCE concentrations (ranging from 0.25 µg/m^3 to 0.29 µg/m^3) were significantly below indoor air PCE concentrations measured in 2011 (5.7 to 6.6 µg/m^3), and below the MTCA Method B indoor air cleanup level of 0.42 µg/m^3. Chloroform concentrations were similar to concentrations measured in 2011. As noted in the *Vapor Intrusion Study Report* (Kennedy/Jenks Consultants 2011), occupants reported that bleach and tap water are used daily for cleaning surfaces on the main floor. These potential sources may contribute small concentrations of chloroform to indoor air (Kennedy/Jenks Consultants 2011). During monthly sampling events conducted on 13 August 2012 and 12 September 2012, PCE concentrations decreased in indoor air and were not detected at or above the laboratory reporting limit. During these same months, benzene was detected in indoor air at concentrations ranging from 0.46 to 4.4 µg/m^3, above the MTCA Method B indoor air cleanup level of 0.32 µg/m^3. Since benzene was detected at similar concentrations in the upwind outdoor air samples collected at the site during the same sampling events, these indoor air concentrations appear to be attributed to ubiquitous benzene commonly associated with industrial and urban areas. Indoor air analytical results for PCE and other VOCs are presented in Table 2.

Outdoor ambient air samples were also collected in July, August, and September 2012, over a 12-hour sampling period and analyzed for VOCs by EPA Method TO-15 by ATL. Outdoor ambient air analytical results are presented in Table 2. With the exception of benzene, outdoor ambient air concentrations of VOCs are below MTCA Method B cleanup levels. Benzene was detected in outdoor ambient air at concentrations ranging from 0.40 and 0.64 µg/m^3.

In addition to indoor and outdoor ambient air samples, subslab soil vapor samples were collected from below the floor slab of the childcare facility in August and September 2012. Subslab pressure monitoring points were installed during SVE system construction activities by drilling holes through the floor slab at five locations (SS-1 through SS-5, see Figure 2), inserting ¼-inch tubing into the void space, and sealing the tubing in place with neat cement. A valve was placed on the end of the tubing and closed between monitoring events. In August 2012, two of these pressure monitoring points (SS-1 and SS-3) were used to collect subslab soil vapor samples. Locations SS-1 and SS-3 were selected for subslab soil vapor sampling based on their proximity to indoor air sample locations.

Connector tubing was used to join monitoring point tubing to the sampling train. The sampling train was tested for leaks by conducting a shut-in test, which consisted of applying a vacuum on the sampling train (vacuum gauge, Summa™ canister, and connector fittings) and observing if vacuum loss occurred over a period of 60 seconds. Then, the subslab monitoring points were tested for leaks by placing a shroud over the subslab monitoring point. Helium was introduced

into the shroud and concentrations were maintained at approximately 70 to 90 percent while purging and sampling each subslab sampling location. The dead-volume of the connecting tubing and sampling train was purged by removing approximately 200 milliliters of air from the probe. The purge air was immediately tested using a portable helium meter to evaluate the probe for potential leaks. Subslab soil vapor samples were then collected using individually certified 6-liter Summa™ canisters. The valve on the sample tubing was closed upon completion of sampling; tubing was recessed into the slab and covered until the next sampling event.

Because helium was detected in subslab soil vapor samples collected in August 2012, monitoring points were abandoned and reinstalled prior to sampling in September 2012. The previous monitoring points were abandoned by sealing the hole with neat cement to match the original condition of the floor slab. New holes were drilled through the floor slab adjacent to the abandoned locations, and permanent subslab Vapor Pins™ were installed to replace each of the five monitoring points. Following the same steps as above, subslab soil vapor samples were collected in September 2012, and monitoring points were temporarily capped after completion of sampling.

Subslab and soil vapor samples were analyzed for VOCs by modified EPA Method TO-15 and for helium by ASTM Method 1945-46 by H&P. PCE was detected in subslab soil vapor samples at concentrations ranging from 14 to 450 µg/m^3 during the August and September 2012 sampling events. Though PCE concentrations were above the draft MTCA Method B screening level for subslab soil gas (4.2 µg/m^3), concentrations were significantly less than those measured in 2011 (3,600 to 50,000 µg/m^3). Benzene was also detected in subslab soil vapor at concentrations ranging from 0.47 to 4.3 µg/m^3. [Note: Recently the inhalation cancer potency factor (CPFi) was decreased and the MTCA Method B air cleanup level changed from 0.42 µg/m^3 to 9.6 µg/m^3. It is anticipated that the MTCA Method B soil gas screening level would go up proportionally].

In addition to PCE and benzene, chloroform and methylene chloride have been detected in subslab soil vapor at concentrations above their respective draft MTCA Method B screening levels for subslab soil gas. These concentrations will be monitored during continued SVE system operation for significant trends. Subslab soil vapor analytical results are presented in Table 3.

Benzene concentrations in outdoor ambient air were similar to indoor air when first measured in August 2012. Though indoor air benzene concentrations increased in September 2012, concentrations are likely attributed to outdoor ambient air or an indoor source, as indoor air benzene concentrations are slightly higher than subslab soil vapor concentrations. PCE concentrations in indoor air and subslab soil vapor have significantly decreased since 2011. These concentrations will be monitored during continued SVE system operation for significant trends.

Section 4: Conclusions

We understand that Ecology plans to continue operation and monitoring of the SVE system at the site to assess influent VOC concentrations and PCE mass removal over time. The SVE system is operating as designed and is effectively inducing a negative pressure below the Buckle My Shoes Early Learning Center building. In doing so, the SVE system appears to be effective at mitigating intrusion of PCE vapors to childcare facility. This section discusses the system vapor analytical data and provides recommendations for future adjustments to the system configuration.

4.1 SVE System Soil Vapor Analytical Data

During the four months of operation, there have been six sampling and performance monitoring events of the SVE system. Samples collected using Summa^{TM} canisters show an initial influent vapor PCE concentration at 7,700 µg/m^3 that declined to 260 µg/m^3 in the following sampling events. These subsequent sampling events show influent PCE concentrations ranging from 110 to 380 µg/m^3. In-between and effluent PCE concentrations were generally not detected at or above the laboratory reporting limit indicating the vapor treatment unit is operating as designed. A continued decline in the PCE concentrations to an asymptotic level is expected over time. However, continued monitoring and more data points are necessary to show if an asymptotic level have been reached given the current operating configuration. Future monitoring can probably be reduced in frequency to once a month for the next three months and then possibly quarterly thereafter.

Indoor air sampling, as well as subslab soil vapor sampling at the Buckle My Shoes Early Learning Center before and after SVE installation show that PCE concentrations have significantly decreased as SSD is achieved under the floor slab. Elevated PCE concentration in indoor air should continue to be mitigated through future operation of SVE system (as long as PCE mass remains in the subsurface).

4.2 System Operation and Adjustment Recommendations

Over the four months of operations, the system has remained relatively stable in the current configuration with wells SVE-3, SVE-4, and SVE-5 extracting from the upper screened interval. The existing monitoring data suggest that the continued operation of these wells (with vapor removal from the upper section) may provide the best opportunities for sub-slab depressurization for the adjacent Buckle My Shoe Early Learning Center.

Future adjustments to the system may include operating from the lower zone and/or inclusion of additional SVE wells to target areas with elevated residual PCE concentrations that are below the water table or have not been subjected to SVE. Initial system testing suggests that all three wells adjacent to the Buckle My Shoe Early Learning Center (SVE-3, SVE-4, and SVE-5) should continue to be operated to provide the greatest vacuum (SSD) below the childcare center. Adjustments to the SVE system, including the addition of wells SVE-1 and/or SVE-2 or extracting from different depth intervals could be performed; however, maintaining an adequate a negative pressure (approximately 0.025 inches WC or more) below the childcare center should be the primary goal.

Vapor extraction from either the deeper zone or a combination of the deeper zone and the shallow zone may be performed if groundwater levels have dropped to adequate levels (i.e., approximately 17.5 feet below grade or more) to expose approximately half of the lower screened interval of the SVE wells. Since, extraction of soil vapor from the lower interval (that is typically saturated) and extraction from wells SVE-1 and SVE-2 could greatly increase PCE mass removal rates from the site, we recommend that performance testing be performed to assess if these additional activities can be performed while maintaining adequate negative pressure below the childcare center.

References

AGRA Earth and Environmental, Inc. 1995. Soil Vapor Survey, Frank Wear Cleaners, 106 South Third Avenue, Yakima, Washington. January 1995.

Hinchee, R., Leeson, A. 1996. Principles and Practices of Bioventing, Volume II: Bioventing Design.

Kennedy/Jenks Consultants. 2011. Vapor Intrusion Study Report, Former Frank Wear Cleaners Site. 4 November.

Kennedy/Jenks Consultants. 2012. Final Soil Vapor Extraction System, Interim Action Plan, Former Frank Wear Cleaners Site, Yakima, Washington. 13 March.

U.S. Environmental Protection Agency. 1993. Radon Reduction Techniques for Existing Detached Houses, Technical Guidance for Active Soil Depressurization Systems. EPA/625/R-93/011.

Washington State Department of Ecology. 2012. Soil Vapor Extraction System, Frank Wear Site, Yakima, WA.

Tables

Table 1: Remediation System Analytical Data

			Removal Efficiency for Tetrachloro-ethene	**Tetrachloro-ethene**	**Chloroform**	**Benzene**	**1,2-Dichloro-ethane**	**Trichloro-ethene**	**Toluene**	**Ethyl-benzene**	**m,p-Xylene**	**o-Xylene**
MTCA Method B Soil Gas Screening Level [a]			***NA***	***4.2***	***1.1***	***32***	***0.96***	***1***	***220,000***	***46,000***	***4,600***	***4,600***
Influent	**Influent 1A**	**7/3/2012**	--	**7,700**	<25	**92**	<21	<27	**49**	<22	<44	<22
	FW-Influent-001	**7/30/2012**	--	**260**	**9.6**	**66**	<4.1	<5.5	**66**	**8.7**	**35**	**11**
	FW-Influent-323	**8/13/2012**	--	**110**	**5.9**	**32**	<4.1	<5.5	**29**	<4.4	<8.8	<4.4
	FW-Influent-067	**8/28/2012**	--	**380**	**25**	**100**	<4.1	<5.5	**35**	<4.4	<8.8	<4.4
	FW-Influent-101	**9/12/2012**	--	**260**	**19**	**32**	<4.1	<5.5	**120**	**6.6**	**17**	**6.9**
	FW-Influent-074	**9/25/2012**	--	**210**	**20**	**39**	<4.1	<5.5	**16**	<4.4	<8.8	<4.4
Midpoint	**Inbetween 1B**	**7/3/2012**	--	**24**	<4.9	**260**	<4.1	<5.5	**7.2**	<4.4	<8.8	<4.4
	FW-Inbtwn-070	**7/30/2012**	--	<6.9	<4.9	**230**	<4.1	<5.5	**8.4**	<4.4	<8.8	<4.4
	FW-Inbtwn-219	**8/13/2012**	--	<6.9	<4.9	**370**	<4.1	<5.5	**4.4**	<4.4	<8.8	<4.4
	FW-Inbtwn-219	**8/28/2012**	--	<6.9	<4.9	**28**	<4.1	<5.5	<3.8	<4.4	<8.8	<4.4
	FW-Inbtwn-105	**9/12/2012**	--	<6.9	<4.9	**51**	<4.1	<5.5	**5.0**	<4.4	<8.8	<4.4
	FW-Inbtwn-241	**9/25/2012**	--	<6.9	<4.9	**430**	<4.1	<5.5	**26**	<4.4	**15**	**6.3**
Effluent	**Effluent 1C**	**7/3/2012**	*99.8%*	**17**	<4.9	**23**	<4.1	<5.5	**6.8**	<4.4	<8.8	<4.4
	FW-effluent	**7/30/2012**	*97.3%*	<6.9	<4.9	**37**	<4.1	<5.5	**17**	<4.4	<8.8	<4.4
	FW-effluent-217	**8/13/2012**	*93.7%*	<6.9	<4.9	**84**	<4.1	<5.5	<3.8	<4.4	<8.8	<4.4
	FW-Effluent-355	**8/28/2012**	*98.2%*	<6.9	<4.9	**190**	<4.1	<5.5	**56**	<4.4	**9.2**	<4.4
	FW-Effluent-102	**9/12/2012**	*97.3%*	<6.9	<4.9	**130**	<4.1	<5.5	**280**	**19**	**45**	**18**
	FW-Effluent-245	**9/25/2012**	*96.7%*	<6.9	<4.9	**150**	<4.1	<5.5	**17**	<4.4	**52**	**18**

Table 1: Remediation System Analytical Data

			Dichloro-difluoro-methane	Chloro-methane	Dichloro-tetrafluoro-ethane	Vinyl chloride	Bromo-methane	Chloro-ethane	Trichloro-fluoro-methane	Acetone	1,1-Dichloro-ethene	1,1,2-Trichloro-trifluoro-ethane
MTCA Method B Soil Gas Screening Level [a]			***8,000***	***140***	***NA***	***28***	***230***	***NA***	***32,000***	***NA***	***NA***	***1,400,000***
Influent	**Influent 1A**	**7/3/2012**	<25	<10	<35	<13	<79	<40	<28	**180**	<20	<39
	FW-Influent-001	**7/30/2012**	**6.6**	**6.3**	<7.1	<2.6	<16	<8.0	<5.6	**280**	<4.0	<7.7
	FW-Influent-323	**8/13/2012**	<5.0	<2.1	<7.1	<2.6	<16	<8.0	<5.6	**66**	<4.0	<7.7
	FW-Influent-067	**8/28/2012**	<5.0	<2.1	<7.1	<2.6	<16	<8.0	<5.6	**140**	<4.0	<7.7
	FW-Influent-101	**9/12/2012**	<5.0	<2.1	<7.1	<2.6	<16	<8.0	<5.6	**100**	<4.0	<7.7
	FW-Influent-074	**9/25/2012**	<5.0	<2.1	<7.1	<2.6	<16	<8.0	<5.6	**37**	<4.0	<7.7
Midpoint	**Inbetween 1B**	**7/3/2012**	<5.0	<2.1	<7.1	<2.6	<16	<8.0	<5.6	**190**	<4.0	<7.7
	FW-Inbtwn-070	**7/30/2012**	**14**	<2.1	<7.1	<2.6	<16	<8.0	<5.6	**940**	<4.0	<7.7
	FW-Inbtwn-219	**8/13/2012**	**12**	<2.1	<7.1	<2.6	<16	<8.0	<5.6	**1,200**	<4.0	<7.7
	FW-Inbtwn-219	**8/28/2012**	**5.1**	<2.1	<7.1	<2.6	<16	<8.0	<5.6	**120**	<4.0	<7.7
	FW-Inbtwn-105	**9/12/2012**	<5.0	<2.1	<7.1	<2.6	<16	<8.0	<5.6	**88**	<4.0	<7.7
	FW-Inbtwn-241	**9/25/2012**	**12**	<2.1	<7.1	<2.6	<16	<8.0	<5.6	**1,000**	<4.0	<7.7
Effluent	**Effluent 1C**	**7/3/2012**	<5.0	<2.1	<7.1	<2.6	<16	<8.0	<5.6	**490**	<4.0	<7.7
	FW-effluent	**7/30/2012**	**5.6**	<2.1	<7.1	<2.6	<16	<8.0	<5.6	**1,300**	<4.0	<7.7
	FW-effluent-217	**8/13/2012**	**8.8**	<2.1	<7.1	<2.6	<16	<8.0	<5.6	**350**	<4.0	<7.7
	FW-Effluent-355	**8/28/2012**	**21**	<2.1	<7.1	<2.6	<16	<8.0	<5.6	**640**	<4.0	<7.7
	FW-Effluent-102	**9/12/2012**	**20**	<2.1	<7.1	<2.6	<16	<8.0	<5.6	**580**	<4.0	<7.7
	FW-Effluent-245	**9/25/2012**	**21**	<2.1	<7.1	<2.6	<16	<8.0	<5.6	**550**	<4.0	<7.7

Table 1: Remediation System Analytical Data

			Methylene chloride	Carbon disulfide	trans-1,2-Dichloro-ethene	1,1-Dichloro-ethane	2-Butanone	cis-1,2-Dichloro-ethene	1,1,1-Trichloro-ethane	Carbon tetrachloride	1,2-Dichloro-propane	Bromo-dichloro-methane
MTCA Method B Soil Gas Screening Level [a]			***530***	***32,000***	***NA***	***32,000***	***NA***	***160***	***48,000***	***17***	***180***	***0.33***
Influent	**Influent 1A**	**7/3/2012**	<18	<32	<40	<21	<150	<20	<28	<32	<47	<34
	FW-Influent-001	**7/30/2012**	**7.5**	<6.3	<8.0	<4.1	<30	<4.0	<5.5	<6.4	<9.4	<6.8
	FW-Influent-323	**8/13/2012**	<3.5	<6.3	<8.0	<4.1	<30	<4.0	<5.5	<6.4	<9.4	<6.8
	FW-Influent-067	**8/28/2012**	<3.5	<6.3	<8.0	<4.1	<30	<4.0	<5.5	<6.4	<9.4	<6.8
	FW-Influent-101	**9/12/2012**	<3.5	<6.3	<8.0	<4.1	**45**	<4.0	<5.5	<6.4	<9.4	<6.8
	FW-Influent-074	**9/25/2012**	<3.5	<6.3	<8.0	<4.1	<30	<4.0	<5.5	<6.4	<9.4	<6.8
Midpoint	**Inbetween 1B**	**7/3/2012**	<3.5	<6.3	<8.0	<4.1	**34**	<4.0	<5.5	<6.4	<9.4	<6.8
	FW-Inbtwn-070	**7/30/2012**	**3.6**	<6.3	<8.0	<4.1	<30	<4.0	<5.5	<6.4	<9.4	<6.8
	FW-Inbtwn-219	**8/13/2012**	<3.5	<6.3	<8.0	<4.1	**33**	<4.0	<5.5	<6.4	<9.4	<6.8
	FW-Inbtwn-219	**8/28/2012**	<3.5	<6.3	<8.0	<4.1	<30	<4.0	<5.5	<6.4	<9.4	<6.8
	FW-Inbtwn-105	**9/12/2012**	<3.5	<6.3	<8.0	<4.1	<30	<4.0	<5.5	<6.4	<9.4	<6.8
	FW-Inbtwn-241	**9/25/2012**	**3.8**	<6.3	<8.0	<4.1	**31**	<4.0	<5.5	<6.4	<9.4	<6.8
Effluent	**Effluent 1C**	**7/3/2012**	<3.5	<6.3	<8.0	<4.1	<30	<4.0	<5.5	<6.4	<9.4	<6.8
	FW-effluent	**7/30/2012**	<3.5	<6.3	<8.0	<4.1	<30	<4.0	<5.5	<6.4	<9.4	<6.8
	FW-effluent-217	**8/13/2012**	<3.5	<6.3	<8.0	<4.1	<30	<4.0	<5.5	<6.4	<9.4	<6.8
	FW-Effluent-355	**8/28/2012**	<3.5	<6.3	<8.0	<4.1	<30	<4.0	<5.5	<6.4	<9.4	<6.8
	FW-Effluent-102	**9/12/2012**	**9.3**	**6.5**	<8.0	<4.1	**130**	<4.0	<5.5	<6.4	<9.4	<6.8
	FW-Effluent-245	**9/25/2012**	<3.5	<6.3	<8.0	<4.1	<30	<4.0	<5.5	<6.4	<9.4	<6.8

Table 1: Remediation System Analytical Data

			cis-1,3-Dichloro-propene	4-Methyl-2-pentanone	trans-1,3-Dichloro-propene	1,1,2-Trichloro-ethane	2-Hexanone	Dibromo-chloro-methane	1,2-Dibromo-ethane	1,1,1,2-Tetrachloro-ethane	Chloro-benzene	Styrene	Bromoform
MTCA Method B Soil Gas Screening Level [a]			***63***	***NA***	***NA***	***16***	***NA***	***0.45***	***NA***	***3.4***	***80***	***140***	***230***
Influent	**Influent 1A**	**7/3/2012**	<23	<41	<23	<28	<41	<43	<39	<35	<23	<22	<52
	FW-Influent-001	**7/30/2012**	<4.6	<8.3	<4.6	<5.5	<8.3	<8.6	<7.8	<7.0	<4.7	<4.3	<10
	FW-Influent-323	**8/13/2012**	<4.6	<8.3	<4.6	<5.5	<8.3	<8.6	<7.8	<7.0	<4.7	<4.3	<10
	FW-Influent-067	**8/28/2012**	<4.6	<8.3	<4.6	<5.5	<8.3	<8.6	<7.8	<7.0	<4.7	<4.3	<10
	FW-Influent-101	**9/12/2012**	<4.6	<8.3	<4.6	<5.5	<8.3	<8.6	<7.8	<7.0	<4.7	<4.3	<10
	FW-Influent-074	**9/25/2012**	<4.6	<8.3	<4.6	<5.5	<8.3	<8.6	<7.8	<7.0	<4.7	<4.3	<10
Midpoint	**Inbetween 1B**	**7/3/2012**	<4.6	<8.3	<4.6	<5.5	<8.3	<8.6	<7.8	<7.0	<4.7	<4.3	<10
	FW-Inbtwn-070	**7/30/2012**	<4.6	<8.3	<4.6	<5.5	<8.3	<8.6	<7.8	<7.0	<4.7	<4.3	<10
	FW-Inbtwn-219	**8/13/2012**	<4.6	<8.3	<4.6	<5.5	<8.3	<8.6	<7.8	<7.0	<4.7	<4.3	<10
	FW-Inbtwn-219	**8/28/2012**	<4.6	<8.3	<4.6	<5.5	<8.3	<8.6	<7.8	<7.0	<4.7	<4.3	<10
	FW-Inbtwn-105	**9/12/2012**	<4.6	<8.3	<4.6	<5.5	<8.3	<8.6	<7.8	<7.0	<4.7	<4.3	<10
	FW-Inbtwn-241	**9/25/2012**	<4.6	<8.3	<4.6	<5.5	<8.3	<8.6	<7.8	<7.0	<4.7	<4.3	<10
Effluent	**Effluent 1C**	**7/3/2012**	<4.6	<8.3	<4.6	<5.5	<8.3	<8.6	<7.8	<7.0	<4.7	<4.3	<10
	FW-effluent	**7/30/2012**	<4.6	<8.3	<4.6	<5.5	<8.3	<8.6	<7.8	<7.0	<4.7	<4.3	<10
	FW-effluent-217	**8/13/2012**	<4.6	<8.3	<4.6	<5.5	<8.3	<8.6	<7.8	<7.0	<4.7	<4.3	<10
	FW-Effluent-355	**8/28/2012**	<4.6	<8.3	<4.6	<5.5	<8.3	<8.6	<7.8	<7.0	<4.7	<4.3	<10
	FW-Effluent-102	**9/12/2012**	<4.6	**11**	<4.6	<5.5	<8.3	<8.6	<7.8	<7.0	<4.7	**4.9**	<10
	FW-Effluent-245	**9/25/2012**	<4.6	<8.3	<4.6	<5.5	<8.3	<8.6	<7.8	<7.0	<4.7	<4.3	<10

Table 1: Remediation System Analytical Data

			1,1,2,2-Tetrachloro-ethane	4-Ethyltoluene	1,3,5-Trimethyl-benzene	1,2,4-Trimethyl-benzene	1,3-Dichloro-benzene	1,4-Dichloro-benzene	1,2-Dichloro-benzene	1,2,4-Trichloro-benzene	Hexachloro-butadiene
MTCA Method B Soil Gas Screening Level[(a)]			***4.3***	***NA***	***270***	***270***	***NA***	***37,000***	***640***	***9,100***	***11***
Influent	**Influent 1A**	**7/3/2012**	<35	<25	<25	<25	<61	<61	<61	<38	<54
	FW-Influent-001	**7/30/2012**	<7.0	<5.0	<5.0	**12**	<12	<12	<12	<7.5	<11
	FW-Influent-323	**8/13/2012**	<7.0	<5.0	<5.0	<5.0	<12	<12	<12	<7.5	<11
	FW-Influent-067	**8/28/2012**	<7.0	<5.0	<5.0	<5.0	<12	<12	<12	<7.5	<11
	FW-Influent-101	**9/12/2012**	<7.0	<5.0	<5.0	<5.0	<12	<12	<12	<7.5	<11
	FW-Influent-074	**9/25/2012**	<7.0	<5.0	<5.0	<5.0	<12	<12	<12	<7.5	<11
Midpoint	**Inbetween 1B**	**7/3/2012**	<7.0	<5.0	<5.0	<5.0	<12	<12	<12	<7.5	<11
	FW-Inbtwn-070	**7/30/2012**	<7.0	<5.0	<5.0	<5.0	<12	<12	<12	<7.5	<11
	FW-Inbtwn-219	**8/13/2012**	<7.0	<5.0	<5.0	<5.0	<12	<12	<12	<7.5	<11
	FW-Inbtwn-219	**8/28/2012**	<7.0	<5.0	<5.0	<5.0	<12	<12	<12	<7.5	<11
	FW-Inbtwn-105	**9/12/2012**	<7.0	<5.0	<5.0	<5.0	<12	<12	<12	<7.5	<11
	FW-Inbtwn-241	**9/25/2012**	<7.0	<5.0	<5.0	<5.0	<12	<12	<12	<7.5	<11
Effluent	**Effluent 1C**	**7/3/2012**	<7.0	<5.0	<5.0	<5.0	<12	<12	<12	<7.5	<11
	FW-effluent	**7/30/2012**	<7.0	<5.0	<5.0	<5.0	<12	<12	<12	<7.5	<11
	FW-effluent-217	**8/13/2012**	<7.0	<5.0	<5.0	<5.0	<12	<12	<12	<7.5	<11
	FW-Effluent-355	**8/28/2012**	<7.0	<5.0	<5.0	<5.0	<12	<12	<12	<7.5	<11
	FW-Effluent-102	**9/12/2012**	<7.0	<5.0	<5.0	**6.1**	<12	<12	<12	<7.5	<11
	FW-Effluent-245	**9/25/2012**	<7.0	<5.0	<5.0	**6.1**	<12	<12	<12	<7.5	<11

Notes:

(a) Screening levels published in Table B-1 of Ecology's *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action* ; Review Draft, October 2009.

All units are in micrograms per cubic meter ($\mu g/m^3$), unless otherwise noted.

Detected concentrations are shown in **boldface.**

Table 2: Indoor and Ambient Air Analytical Data

			Tetrachloro-ethene	Chloroform	Benzene	1,2-Dichloro-ethane	Trichloro-ethene	Toluene	Ethyl Benzene	m,p-Xylene
MTCA Method B Indoor Air Cleanup Level[(a)]			***0.42***	***0.11***	***0.32***	***0.096***	***0.1***	***2,200***	***460***	***46***
Upstairs (Kitchen)	**BMS-U1-092411**	**9/25/2011**	**5.7**	**1.3**		<0.17	<0.22			
	BMS-U1-102011	**10/20/2011**	**6.1**	**2.9**		<0.14	**0.086**			
NE Corner Nap/ Play Area	**BMS-M1-092411**	**9/25/2011**	**6.3**	**1.4**		**0.15**	<0.19			
	BMS-M1-102011	**10/20/2011**	**6.0**	**2.3**		<0.14	**0.08**			
	BMS-M1-070612	**7/6/2012**	**0.29**	**2.9**		**0.34**	**0.071**			
	BMS-M1-081312	**8/13/2012**	<0.25	**1.8**	**0.50**	**0.25**	**0.083**	**3.8**	**0.30**	**0.78**
	BMS-M1-091212	**9/12/2012**	<0.24	**1.2**	**4.4**	<0.14	**0.058**	**3.8**	**0.34**	**1.2**
Reception Desk	**BMS-M2-092411**	**9/25/2011**	**6.2**	**1.3**		<0.14	**0.27**			
	BMS-M2-102011	**10/20/2011**	**6.2**	**2.4**		<0.15	**0.083**			
S Corner Nap/ Play Area	**BMS-M3-092411**	**9/25/2011**	**6.6**	**1.3**		**0.15**	<0.18			
	BMS-M3-102011	**10/20/2011**	**6.5**	**2.7**		<0.14	**0.085**			
	BMS-M3-070612	**7/6/2012**	**0.25**	**2.7**		**0.33**	**0.067**			
	BMS-M3-081312	**8/13/2012**	<0.25	**1.8**	**0.46**	**0.23**	**0.077**	**3.8**	**0.26**	**0.75**
	BMS-M3-091212	**9/12/2012**	<0.24	**1.1**	**1.0**	<0.14	**0.032**	**2.8**	**0.31**	**1.0**
Upwind Ambient Air	**AMB-UPWIND-092411**	**9/25/2011**	<0.23	<0.84		<0.14	<0.18			
	AMB-UPWIND-070612	**7/6/2012**	<0.26	<0.94		<0.16	**0.048**			
	AMB-UPWIND-081312	**8/13/2012**	<0.27	<0.98	**0.40**	<0.16	**0.068**	**1.1**	**0.20**	**0.46**
	AMB-UPWIND-091212	**9/12/2012**	<0.25	<0.89	**0.64**	<0.15	<0.030	**1.6**	**0.19**	**0.58**
Upwind Ambient Air along North Wall	**AMB-NWALL-092411**	**9/25/2011**	<0.25	<0.90		<0.15	<0.20			

Table 2: Indoor and Ambient Air Analytical Data

			o-Xylene	Freon 12	Freon 114	Chloro-methane	1,3-Butadiene	Bromo-methane	Chloro-ethane	Freon 11	Ethanol
MTCA Method B Indoor Air Cleanup Level[(a)]			***46***	***80***	***NA***	***1.4***	***0.08***	***2.3***	***NA***	***320***	***NA***
Upstairs (Kitchen)	**BMS-U1-092411**	**9/25/2011**									
	BMS-U1-102011	**10/20/2011**									
NE Corner Nap/ Play Area	**BMS-M1-092411**	**9/25/2011**									
	BMS-M1-102011	**10/20/2011**									
	BMS-M1-070612	**7/6/2012**									
	BMS-M1-081312	**8/13/2012**	**0.33**	**2.1**	<1.3	**1.2**	<0.41	<3.6	<2.5	**1.2**	**1,100 E**
	BMS-M1-091212	**9/12/2012**	**0.42**	**2.0**	<1.2	**0.83**	<0.40	<0.70	<2.4	**1.1**	**160 E**
Reception Desk	**BMS-M2-092411**	**9/25/2011**									
	BMS-M2-102011	**10/20/2011**									
S Corner Nap/ Play Area	**BMS-M3-092411**	**9/25/2011**									
	BMS-M3-102011	**10/20/2011**									
	BMS-M3-070612	**7/6/2012**									
	BMS-M3-081312	**8/13/2012**	**0.30**	**2.4**	<1.3	**1.1**	<0.41	<3.6	<2.5	**1.5**	**840 E**
	BMS-M3-091212	**9/12/2012**	**0.35**	**2.2**	<1.2	**1.1**	<0.40	<0.70	<2.4	**1.3**	**170 E**
Upwind Ambient Air	**AMB-UPWIND-092411**	**9/25/2011**									
	AMB-UPWIND-070612	**7/6/2012**									
	AMB-UPWIND-081312	**8/13/2012**	**0.17**	**2.5**	<1.4	**1.0**	<0.44	<3.9	<2.6	**1.3**	**12**
	AMB-UPWIND-091212	**9/12/2012**	**0.22**	**2.2**	<1.3	**0.90**	<0.40	<0.71	<2.4	**1.2**	**3.2**
Upwind Ambient Air along North Wall	**AMB-NWALL-092411**	**9/25/2011**									

Table 2: Indoor and Ambient Air Analytical Data

			Freon 113	Acetone	2-Propanol	Carbon Disulfide	3-Chloro-propene	Methylene Chloride	Hexane	2-Butanone	Tetra-hydrofuran
MTCA Method B Indoor Air Cleanup Level[(a)]			***14,000***	***NA***	***NA***	***320***	***NA***	***5.3***	***NA***	***NA***	***NA***
Upstairs (Kitchen)	**BMS-U1-092411**	**9/25/2011**									
	BMS-U1-102011	**10/20/2011**									
NE Corner Nap/ Play Area	**BMS-M1-092411**	**9/25/2011**									
	BMS-M1-102011	**10/20/2011**									
	BMS-M1-070612	**7/6/2012**									
	BMS-M1-081312	**8/13/2012**	<1.4	**30**	**41**	<2.9	<2.9	<1.3	<0.66	<2.8	<2.8
	BMS-M1-091212	**9/12/2012**	<1.4	**22**	**18**	<2.8	<2.8	<1.2	<0.63	<2.6	<2.6
Reception Desk	**BMS-M2-092411**	**9/25/2011**									
	BMS-M2-102011	**10/20/2011**									
S Corner Nap/ Play Area	**BMS-M3-092411**	**9/25/2011**									
	BMS-M3-102011	**10/20/2011**									
	BMS-M3-070612	**7/6/2012**									
	BMS-M3-081312	**8/13/2012**	<1.4	**32**	**41**	<2.9	<2.9	<1.3	**0.78**	**3.0**	<2.8
	BMS-M3-091212	**9/12/2012**	<1.4	**23**	**35**	<2.8	<2.8	<1.2	<0.63	<2.6	<2.6
Upwind Ambient Air	**AMB-UPWIND-092411**	**9/25/2011**									
	AMB-UPWIND-070612	**7/6/2012**									
	AMB-UPWIND-081312	**8/13/2012**	<1.5	**9.2**	<2.5	<3.1	<3.1	<1.4	<0.71	<3.0	<3.0
	AMB-UPWIND-091212	**9/12/2012**	<1.4	**7.4**	<2.2	<2.8	<2.9	<1.3	<0.64	<2.7	<2.7
Upwind Ambient Air along North Wall	**AMB-NWALL-092411**	**9/25/2011**									

Table 2: Indoor and Ambient Air Analytical Data

			Cyclohexane	Carbon Tetrachloride	2,2,4-Trimethyl-pentane	Heptane	Styrene	1,2-Dichloro-propane	1,4-Dioxane	Bromo-dichloro-methane
MTCA Method B Indoor Air Cleanup Level[(a)]			***NA***	***0.17***	***NA***	***NA***	***4.4***	***1.8***	***NA***	***0.0033***
Upstairs (Kitchen)	**BMS-U1-092411**	**9/25/2011**								
	BMS-U1-102011	**10/20/2011**								
NE Corner Nap/ Play Area	**BMS-M1-092411**	**9/25/2011**								
	BMS-M1-102011	**10/20/2011**								
	BMS-M1-070612	**7/6/2012**								
	BMS-M1-081312	**8/13/2012**	<0.64	<1.2	<4.4	**0.84**	**1.1**	<0.86	<0.67	<1.2
	BMS-M1-091212	**9/12/2012**	<0.62	<1.1	<4.2	**3.3**	<0.76	<0.83	<0.64	<1.2
Reception Desk	**BMS-M2-092411**	**9/25/2011**								
	BMS-M2-102011	**10/20/2011**								
S Corner Nap/ Play Area	**BMS-M3-092411**	**9/25/2011**								
	BMS-M3-102011	**10/20/2011**								
	BMS-M3-070612	**7/6/2012**								
	BMS-M3-081312	**8/13/2012**	<0.64	<1.2	<4.4	**0.98**	**1.0**	<0.86	<0.67	<1.2
	BMS-M3-091212	**9/12/2012**	<0.62	<1.1	<4.2	**1.8**	<0.76	<0.83	<0.64	<1.2
Upwind Ambient Air	**AMB-UPWIND-092411**	**9/25/2011**								
	AMB-UPWIND-070612	**7/6/2012**								
	AMB-UPWIND-081312	**8/13/2012**	<0.69	<1.3	<4.7	<0.82	<0.86	<0.93	<0.72	<1.3
	AMB-UPWIND-091212	**9/12/2012**	<0.63	<1.2	<4.3	<0.75	<0.78	<0.84	<0.66	<1.2
Upwind Ambient Air along North Wall	**AMB-NWALL-092411**	**9/25/2011**								

Table 2: Indoor and Ambient Air Analytical Data

			cis-1,3-Dichloro-propene	4-Methyl-2-pentanone	1,1,2-Trichloro-ethane	1,1,2,2-Tetrachloro-ethane	trans-1,2-Dichloro-ethene	Methyl tert-butyle ether	trans-1,3-Dichloro-propene	2-Hexanone	Dibromo-chloro-methane
MTCA Method B Indoor Air Cleanup Level[(a)]			***0.63***	***NA***	***0.16***	***0.043***		***9.6***	***0.63***	***NA***	***0.0045***
Upstairs (Kitchen)	**BMS-U1-092411**	**9/25/2011**							<0.95		
	BMS-U1-102011	**10/20/2011**							<0.77		
NE Corner Nap/ Play Area	**BMS-M1-092411**	**9/25/2011**							<0.80		
	BMS-M1-102011	**10/20/2011**							<0.81		
	BMS-M1-070612	**7/6/2012**							<0.85		
	BMS-M1-081312	**8/13/2012**	<0.85	<0.77	<0.20	<0.26	<0.74	<0.67	<0.85	<3.8	<1.6
	BMS-M1-091212	**9/12/2012**	<0.81	<0.73	<0.20	<0.24	<0.71	<0.64	<0.81	<3.7	<1.5
Reception Desk	**BMS-M2-092411**	**9/25/2011**							<0.81		
	BMS-M2-102011	**10/20/2011**							<0.82		
S Corner Nap/ Play Area	**BMS-M3-092411**	**9/25/2011**							<0.75		
	BMS-M3-102011	**10/20/2011**							<0.78		
	BMS-M3-070612	**7/6/2012**							<0.82		
	BMS-M3-081312	**8/13/2012**	<0.85	<0.77	<0.20	<0.26	<0.74	<0.67	<0.85	<3.8	<1.6
	BMS-M3-091212	**9/12/2012**	<0.81	<0.73	<0.20	<0.24	<0.71	<0.64	<0.81	<3.7	<1.5
Upwind Ambient Air	**AMB-UPWIND-092411**	**9/25/2011**							<0.78		
	AMB-UPWIND-070612	**7/6/2012**							<0.88		
	AMB-UPWIND-081312	**8/13/2012**	<0.91	<0.82	<0.22	<0.28	<0.80	<0.72	<0.91	<4.1	<1.7
	AMB-UPWIND-091212	**9/12/2012**	<0.83	<0.75	<0.20	<0.25	<0.72	<0.66	<0.83	<3.7	<1.6
Upwind Ambient Air along North Wall	**AMB-NWALL-092411**	**9/25/2011**							<0.84		

Table 2: Indoor and Ambient Air Analytical Data

			1,2-Dibromo-ethane	Chloro-benzene	Bromoform	Cumene	Propyl-benzene	4-Ethyl-toluene	1,3,5-Trimethyl-benzene	1,2,4-Trimethyl-benzene	1,3-Dichloro-benzene	1,4-Dichloro-benzene
MTCA Method B Indoor Air Cleanup Level[(a)]			***NA***	***8***	***2.3***	***180***	***NA***	***NA***	***2.7***	***2.7***	***NA***	***370***
Upstairs (Kitchen)	**BMS-U1-092411**	**9/25/2011**		<0.96								
	BMS-U1-102011	**10/20/2011**		<0.78								
NE Corner Nap/ Play Area	**BMS-M1-092411**	**9/25/2011**		<0.81								
	BMS-M1-102011	**10/20/2011**		<0.82								
	BMS-M1-070612	**7/6/2012**		<0.86								
	BMS-M1-081312	**8/13/2012**	<1.4	<0.86	<1.9	<0.92	<0.92	<0.92	<0.92	<0.92	<1.1	<1.1
	BMS-M1-091212	**9/12/2012**	<1.4	<0.82	<1.8	<0.88	<0.88	<0.88	<0.88	<0.88	<1.1	<1.1
Reception Desk	**BMS-M2-092411**	**9/25/2011**		<0.82								
	BMS-M2-102011	**10/20/2011**		<0.83								
S Corner Nap/ Play Area	**BMS-M3-092411**	**9/25/2011**		<0.76								
	BMS-M3-102011	**10/20/2011**		<0.80								
	BMS-M3-070612	**7/6/2012**		<0.83								
	BMS-M3-081312	**8/13/2012**	<1.4	<0.86	<1.9	<0.92	<0.92	<0.92	<0.92	<0.92	<1.1	<1.1
	BMS-M3-091212	**9/12/2012**	<1.4	<0.82	<1.8	<0.88	<0.88	<0.88	<0.88	<0.88	<1.1	<1.1
Upwind Ambient Air	**AMB-UPWIND-092411**	**9/25/2011**		<0.79								
	AMB-UPWIND-070612	**7/6/2012**		<0.89								
	AMB-UPWIND-081312	**8/13/2012**	<1.5	<0.92	<2.1	<0.99	<0.99	<0.99	<0.99	<0.99	<1.2	<1.2
	AMB-UPWIND-091212	**9/12/2012**	<1.4	<0.84	<1.9	<0.90	<0.90	<0.90	<0.90	<0.90	<1.1	<1.1
Upwind Ambient Air along North Wall	**AMB-NWALL-092411**	**9/25/2011**		<0.85								

Table 2: Indoor and Ambient Air Analytical Data

			alpha-Chloro-toluene	1,2-Dichloro-benzene	1,2,4-Trichloro-benzene	Hexachloro-butadiene	1,1,1,2-Tetrachloro-ethane[(b)]	Vinyl Chloride	1,1-Dichloro-ethene	1,1-Dichloro-ethane	cis-1,2-Dichloro-ethene	1,1,1-Trichloro-ethane
MTCA Method B Indoor Air Cleanup Level[(a)]			***NA***	***64***	***91***	***0.63***	***0.34***	***0.28***	***NA***	***320***	***16***	***4,800***
Upstairs (Kitchen)	**BMS-U1-092411**	**9/25/2011**		<1.2			<7.2				<0.16	<0.23
	BMS-U1-102011	**10/20/2011**		<1.0			<5.8				<0.13	<0.18
NE Corner Nap/ Play Area	**BMS-M1-092411**	**9/25/2011**		<1.0			<6.0				<0.14	<0.19
	BMS-M1-102011	**10/20/2011**		<1.1			<6.1				<0.14	<0.19
	BMS-M1-070612	**7/6/2012**		<1.1			<6.4				<0.15	<0.20
	BMS-M1-081312	**8/13/2012**	<0.97	<1.1	<6.9	<10	<6.4	<0.048	<0.074	<0.15	<0.15	<0.20
	BMS-M1-091212	**9/12/2012**	<0.93	<1.1	<6.6	<9.5	<6.1	<0.046	<0.071	<0.14	<0.14	<0.20
Reception Desk	**BMS-M2-092411**	**9/25/2011**		<1.1			<6.1				<0.14	<0.20
	BMS-M2-102011	**10/20/2011**		<1.1			<6.2				<0.14	<0.20
S Corner Nap/ Play Area	**BMS-M3-092411**	**9/25/2011**		<0.99			<5.7				<0.13	<0.18
	BMS-M3-102011	**10/20/2011**		<1.0			<5.9				<0.14	<0.19
	BMS-M3-070612	**7/6/2012**		<1.1			<6.2				<0.14	<0.20
	BMS-M3-081312	**8/13/2012**	<0.97	<1.1	<6.9	<10	<6.4	<0.048	<0.074	<0.15	<0.15	<0.20
	BMS-M3-091212	**9/12/2012**	<0.93	<1.1	<6.6	<9.5	<6.1	<0.046	<0.071	<0.14	<0.14	<0.20
Upwind Ambient Air	**AMB-UPWIND-092411**	**9/25/2011**		<1.0			<5.9				<0.14	<0.19
	AMB-UPWIND-070612	**7/6/2012**		<1.2			<6.6				<0.15	<0.21
	AMB-UPWIND-081312	**8/13/2012**	<1.0	<1.2	<7.4	<11	<6.9	<0.051	<0.080	<0.16		
	AMB-UPWIND-091212	**9/12/2012**	<0.95	<1.1	<6.8	<9.8	<6.3	<0.047	<0.072	<0.15	<0.14	<0.20
Upwind Ambient Air along North Wall	**AMB-NWALL-092411**	**9/25/2011**		<1.1			<6.3				<0.14	<0.20

Notes:

(a) Cleanup levels published in Table B-1 of Ecology's *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action* ; Review Draft, October 2009.

(b) 1,1,1,2-Tetrachloroethane is not on the standard TO-15 list for the laboratory; therefore, it could not be analyzed at a low level reporting limit.

All units are in micrograms per cubic meter ($\mu g/m^3$), unless otherwise noted.

Detected concentrations are shown in **boldface.**

"E" indicates the instrument calibration range was exceeded.

Table 3: Subslab Soil Gas Analytical Data

			Helium[(b)] (%)	Tetrachloro-ethene	Chloroform	Benzene	1,2-Dichloro-ethane	Trichloro-ethene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene
MTCA Method B Subslab Soil Gas Screening Level[(a)]			***NA***	***4.2***	***1.1***	***3.2***	***0.96***	***1***	***22,000***	***4,600***	***460***	***460***
NE Corner Nap/ Play Area	**BMS-SS-1-092511**	**9/25/2011**	<1.0	**3,600**	**7.5**	<3.2	<4.1	<5.5	**11**	<4.4	<8.8	<4.4
	BMS-SS-1-081312	**8/13/2012**	**0.8**	**450**	<0.49	**0.47**	<0.82	<1.1	**2.7**	<0.88	**2.8**	**1.1**
	BMS-SS-1-091212	**9/12/2012**	**0.2**	**57**	**1.9**	**4.3**	<0.82	<1.1	**29**	**6.1**	**21**	**7.6**
Main Floor Sink Area	**BMS-SS-2-092511**	**9/25/2011**	<1.0	**45,000**	**27**	<3.2	<4.1	<5.5	**19**	<4.4	<8.8	<4.4
Reception Area	**BMS-SS-3-092511**	**9/25/2011**	<1.0	**50,000**	**16**	<3.2	<4.1	<5.5	**15**	<4.4	<8.8	<4.4
SE Corner Nap/ Play Area	**BMS-SS-4-081312**	**8/13/2012**	**1.8**	**110**	**1.4**	**0.60**	<0.82	<1.1	**5.7**	**1.3**	**5.8**	**1.8**
	BMS-SS-4-091212	**9/12/2012**	**4.8**	**14**	**2.4**	**0.94**	<0.82	<1.1	**25**	**4.4**	**11**	**4.5**

Table 3: Subslab Soil Gas Analytical Data

			Dichloro-difluoro-methane	Chloro-methane	Dichloro-tetrafluoro-ethane	Vinyl chloride	Bromo-methane	Chloro-ethane	Trichloro-fluoro-methane	Acetone	1,1-Dichloro-ethene	1,1,2-Trichloro-trifluoro-ethane	Methylene chloride	Carbon disulfide
MTCA Method B Subslab Soil Gas Screening Level[(a)]			***800***	***14***	***NA***	***2.8***	***23***	***NA***	***3,200***	***NA***	***NA***	***140,000***	***53***	***3,200***
NE Corner Nap/ Play Area	**BMS-SS-1-092511**	**9/25/2011**	<5.0	<2.1	<7.1	<2.6	<16	<8.0	<5.7	**130**	<4.0	<7.7	<3.5	**7.2**
	BMS-SS-1-081312	**8/13/2012**	<2.0	<0.41	<1.4	<0.26	<0.79	<0.54	**1.4**	**5.4**	<0.80	<3.1	**0.97**	<0.63
	BMS-SS-1-091212	**9/12/2012**	**2.7**	**2.3**	<1.4	<0.26	**0.84**	<0.54	**3.7**	**55**	<0.80	<1.5	**8.5**	**30**
Main Floor Sink Area	**BMS-SS-2-092511**	**9/25/2011**	<5.0	<2.1	<7.1	<2.6	<16	<8.0	<5.7	**100**	<4.0	<7.7	<3.5	<6.3
Reception Area	**BMS-SS-3-092511**	**9/25/2011**	<5.0	<2.1	<7.1	<2.6	<16	<8.0	<5.7	**60**	<4.0	<7.7	<3.5	<6.3
SE Corner Nap/ Play Area	**BMS-SS-4-081312**	**8/13/2012**	<2.0	<0.41	<1.4	<0.26	<0.79	<0.54	<1.1	**11**	<0.80	<3.1	**6,200**	<0.63
	BMS-SS-4-091212	**9/12/2012**	**2.4**	<0.41	<1.4	<0.26	<0.79	<0.54	**1.5**	**23**	<0.80	<1.5	**1,300**	<0.63

Table 3: Subslab Soil Gas Analytical Data

			trans-1,2-Dichloro-ethene	1,1-Dichloro-ethane	2-Butanone	cis-1,2-Dichloro-ethene	1,1,1-Trichloro-ethane	Carbon tetrachloride	1,2-Dichloro-propane	Bromo-dichloro-methane	cis-1,3-Dichloro-propene	4-Methyl-2-pentanone	trans-1,3-Dichloro-propene
MTCA Method B Subslab Soil Gas Screening Level[(a)]			***NA***	***3,200***	***NA***	***160***	***48,000***	***1.7***	***18***	***0.033***	***6.3***	***NA***	***NA***
NE Corner Nap/ Play Area	**BMS-SS-1-092511**	**9/25/2011**	<8.0	<4.1	**33**	<4.0	<5.5	<6.4	<9.4	<6.8	<4.6	**13**	<4.6
	BMS-SS-1-081312	**8/13/2012**	<0.80	<0.82	**2.7**	<0.80	<1.1	<0.64	<0.94	<1.4	<0.92	<1.7	<0.92
	BMS-SS-1-091212	**9/12/2012**	<0.80	<0.82	**5.6**	<0.80	<1.1	**0.95**	<0.94	<1.4	<0.92	<1.7	<0.92
Main Floor Sink Area	**BMS-SS-2-092511**	**9/25/2011**	<8.0	<4.1	**41**	<4.0	<5.5	<6.4	<9.4	<6.8	<4.6	**13**	<4.6
Reception Area	**BMS-SS-3-092511**	**9/25/2011**	<8.0	<4.1	<30	<4.0	<5.5	<6.4	<9.4	<6.8	<4.6	<8.3	<4.6
SE Corner Nap/ Play Area	**BMS-SS-4-081312**	**8/13/2012**	<0.80	<0.82	**1.8**	<0.80	<1.1	<0.64	<0.94	<1.4	<0.92	<1.7	<0.92
	BMS-SS-4-091212	**9/12/2012**	<0.80	<0.82	**7.1**	<0.80	<1.1	<0.64	<0.94	<1.4	<0.92	**21**	<0.92

Table 3: Subslab Soil Gas Analytical Data

			1,1,2-Trichloro-ethane	2-Hexanone	Dibromochloro-methane	1,2-Dibromo-ethane	1,1,1,2-Tetrachloro-ethane	Chloro-benzene	Styrene	Bromoform
MTCA Method B Subslab Soil Gas Screening Level[(a)]			***1.6***	***NA***	***0.045***	***NA***	***3.4***	***80***	***44***	***23***
NE Corner Nap/ Play Area	**BMS-SS-1-092511**	**9/25/2011**	<5.5	**11**	<8.6	<7.8	<7.0	<4.7	<4.3	<10
	BMS-SS-1-081312	**8/13/2012**	<1.1	<1.7	<1.7	<1.6	<1.4	<0.94	**0.99**	<2.1
	BMS-SS-1-091212	**9/12/2012**	<1.1	**2.5**	<1.7	<1.6	<1.4	<0.94	**1.4**	<2.1
Main Floor Sink Area	**BMS-SS-2-092511**	**9/25/2011**	<5.5	<8.3	<8.6	<7.8	<7.0	<4.7	<4.3	<10
Reception Area	**BMS-SS-3-092511**	**9/25/2011**	<5.5	<8.3	<8.6	<7.8	<7.0	<4.7	<4.3	<10
SE Corner Nap/ Play Area	**BMS-SS-4-081312**	**8/13/2012**	<1.1	<1.7	<1.7	<1.6	<1.4	<0.94	<0.86	<2.1
	BMS-SS-4-091212	**9/12/2012**	<1.1	<1.7	<1.7	<1.6	<1.4	<0.94	**2.3**	<2.1

Table 3: Subslab Soil Gas Analytical Data

			1,1,2,2-Tetrachloro-ethane	4-Ethyltoluene	1,3,5-Trimethyl-benzene	1,2,4-Trimethyl-benzene	1,3-Dichloro-benzene	1,4-Dichloro-benzene	1,2-Dichloro-benzene	1,2,4-Trichloro-benzene	Hexachloro-butadiene
MTCA Method B Subslab Soil Gas Screening Level[(a)]			***0.43***	***NA***	***27***	***27***	***NA***	***3,700***	***640***	***910***	***1.1***
NE Corner Nap/ Play Area	**BMS-SS-1-092511**	**9/25/2011**	<7.0	<5.0	<5.0	**5.8**	<12	<12	<12	<7.5	<11
	BMS-SS-1-081312	**8/13/2012**	<1.4	<1.0	<1.0	**3.3**	<1.2	<1.2	<1.2	<1.5	<4.3
	BMS-SS-1-091212	**9/12/2012**	<1.4	**1.7**	**2.0**	**7.9**	<1.2	<1.2	<1.2	<1.5	<4.3
Main Floor Sink Area	**BMS-SS-2-092511**	**9/25/2011**	<7.0	<5.0	<5.0	<5.0	<12	<12	<12	<7.5	<11
Reception Area	**BMS-SS-3-092511**	**9/25/2011**	<7.0	<5.0	<5.0	<5.0	<12	<12	<12	<7.5	<11
SE Corner Nap/ Play Area	**BMS-SS-4-081312**	**8/13/2012**	<1.4	<1.0	<1.0	**3.0**	<1.2	<1.2	<1.2	<1.5	<4.3
	BMS-SS-4-091212	**9/12/2012**	<1.4	**2.3**	**1.1**	**3.9**	<1.2	<1.2	<1.2	<1.5	<4.3

Notes:

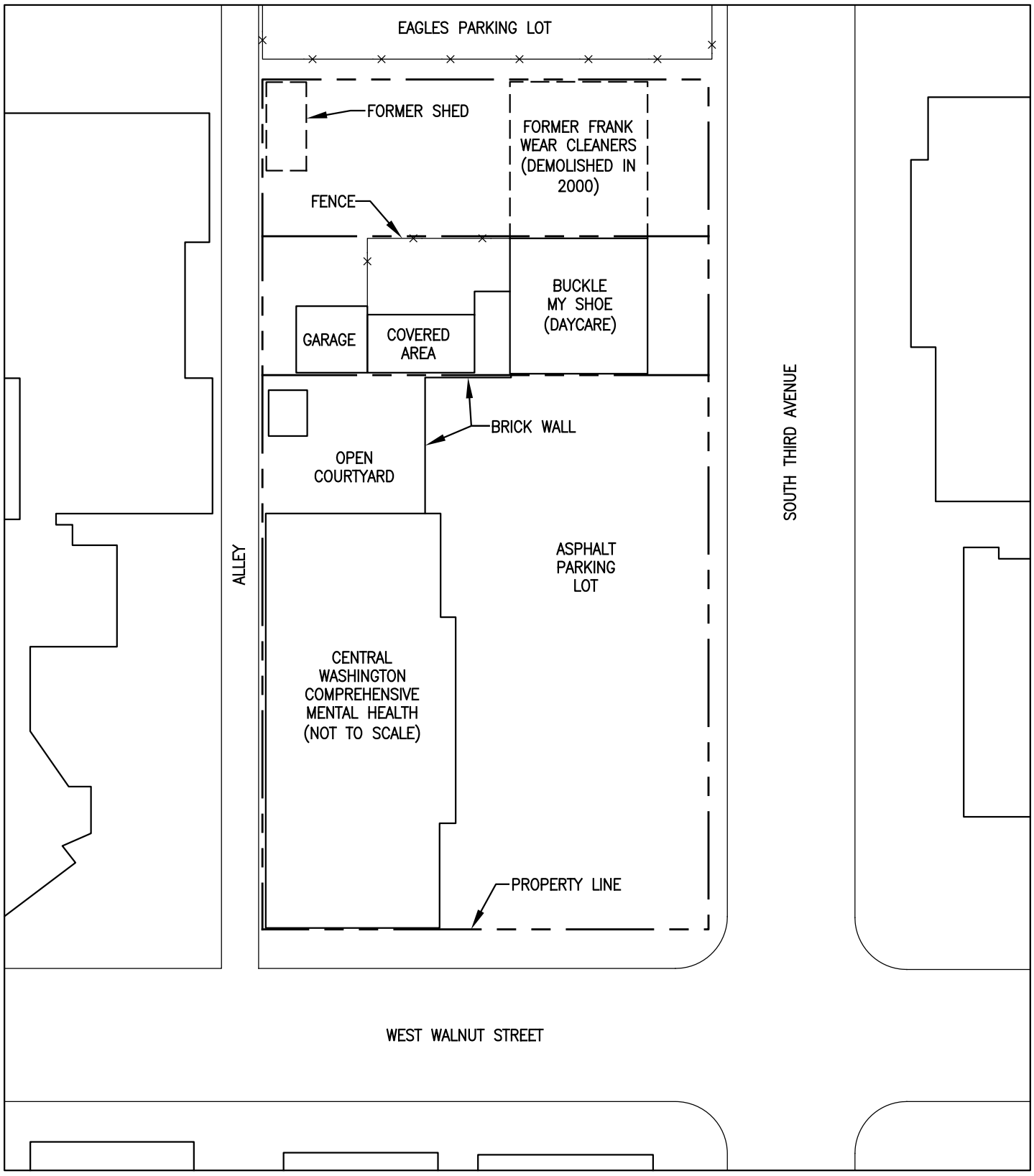
(a) Screening levels published in Table B-1 of Ecology's *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action* ; Review Draft, October 2009.

(b) Helium was used as a leak check compound during soil gas sampling. Results are presented in units of percent.

All units are in micrograms per cubic meter ($\mu g/m^3$), unless otherwise noted.

Detected concentrations are shown in **boldface.**

Figures



Kennedy/Jenks Consultants

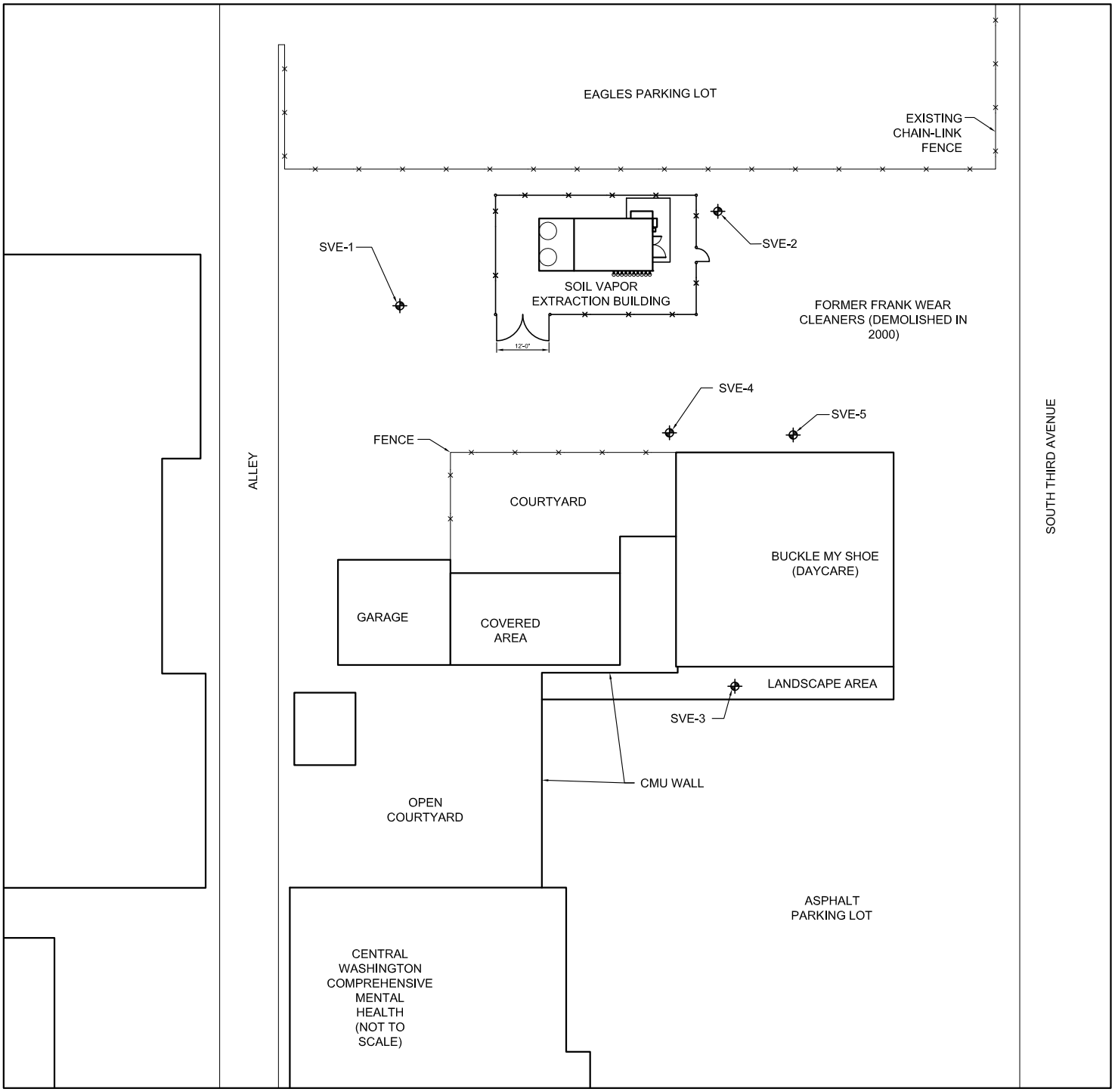
WASHINGTON DEPARTMENT OF ECOLOGY
FRANK WEAR SITE
YAKIMA, WASHINGTON

SITE MAP

119016.00\FIG-01

10/11

FIGURE 1



N

LEGEND

SOIL VAPOR EXTRACTION WELL

0 20 40 60

APPROXIMATE SCALE 1"=20'

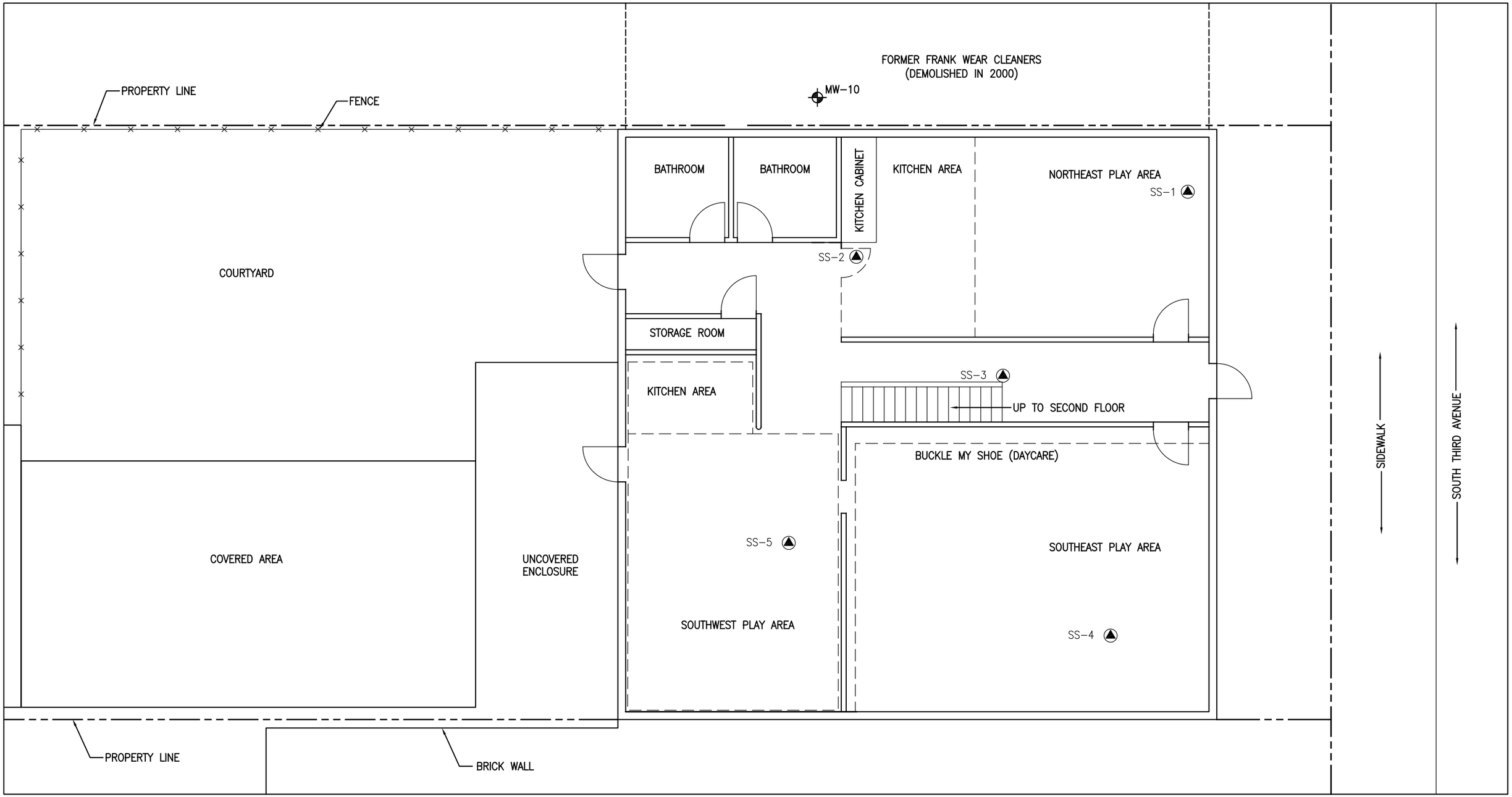
Kennedy/Jenks Consultants

WASHINGTON STATE DEPARTMENT OF ECOLOGY
FRANK WEAR SITE
YAKIMA, WASHINGTON

SVE WELL LOCATIONS

119016.00\FIG-02

FIGURE 2



LEGEND

SS-1 SUBSLAB MONITORING POINT

MW-10 MONITORING WELL

NOTE: ALL LOCATIONS ARE APPROXIMATE

N

0 5 10

APPROXIMATE SCALE 1/8"=1'

Kennedy/Jenks Consultants

WASHINGTON STATE DEPARTMENT OF ECOLOGY
FRANK WEAR SITE
YAKIMA, WASHINGTON

INDOOR AIR MONITORING LOCATIONS

119016.00\FIG-03

FIGURE 3

NOTES:

ESTIMATED EFFECTIVE PRESSURE RADII OF INFLUENCE SHOWN FOR INDIVIDUAL SOIL VAPOR EXTRACTION WELLS OPERATING FROM THE LOWER ZONE AND AT APPROXIMATELY 20-INCHES WATER COLUMN AS MEASURED AT THE MANIFOLD.

CENTRAL WASHINGTON COMPREHENSIVE MENTAL HEALTH (NOT TO SCALE)

OPEN COURTYARD

GARAGE

COVERED AREA

FENCE

R45'-0"

SVE-1

R60'-0"

SVE-4

SOIL VAPOR EXTRACTION BUILDING

12'-0"

EAGLES PARKING LOT

CMU WALL

R60'-0"

SVE-3

SVE-2

R60'-0"

FORMER FRANK WEAR CLEANERS (DEMOLISHED IN 2000)

SVE-5

R50'-0"

ASPHALT PARKING LOT

LANDSCAPE AREA

BUCKLE MY SHOE (DAYCARE)

EXISTING CHAIN-LINK FENCE

LEGEND

SVE 1 — SOIL VAPOR EXTRACTION WELL

NOTE: ALL LOCATIONS ARE APPROXIMATE

N

0 10 20 30

APPROXIMATE SCALE 1"=20'

Kennedy/Jenks Consultants

WASHINGTON STATE DEPARTMENT OF ECOLOGY
FRANK WEAR SITE
YAKIMA, WASHINGTON

SVE WELL RADIUS OF INFLUENCE

119016.00\FIG–04

FIGURE 4

Appendix A

City of Yakima Construction Permits

Department of Community and Economic Development
Office of Code Administration
129 North Second Street, 2nd Floor
Yakima, Washington 98901

Invoice

Date: 18-APR-12
Invoice No.: 985

ANDERSON ENVIRONMENTAL CONTRACTING
705 COLORADO ST
KELSO WA 98626

Application No.: BLD-12-0328
Project:
Permit Type: Commercial Building New
Parcel No.: 18132441442
Subdivision:
Block/Lot: CBD/N
Site Address: 106 S 3RD AVE

Description	Fee Amount	Paid/Credit	Balance Due	Account
State Surcharge	$4.50	$0.00	$4.50	000-000-000-0000-23729-901
Building Permit	$180.37	$0.00	$180.37	000-000-141-0000-32210-BLG
Building Plan Review	$117.24	$0.00	$117.24	000-000-141-0000-34583-G34

Total Fee Amount:	$302.11
Total Paid/Credits:	$0.00
Balance Due:	$302.11

Payment due upon receipt.

5110
POSTED
approval attached # 18403 4/19

ANDERSON ENVIRONMENTAL CONTRACTING, LLC KELSO, WA 98626

025521

City of Yakima

- Business License - 85.80
- Street Break Permit 50.00

$135.80

5110

POSTED

#18536 4/25

DUE 12-08-12

ANDERSON ENVIRONMENTAL CONTRACTING, LLC KELSO, WA 98626

025521

Brett M

4/23/12

City of Yakima
City Treasurer
129 N Second St, 2nd Floor
Yakima, WA 98901

Check: 25521
Date: 4/27/2012
Vendor: YAK02

Invoice	P.O. Num.	Invoice Amt	Prior Balance	Retention	Discount	Amt. Paid
120425	12-026	135.80	135.80	0.00	0.00	135.80
		135.80	135.80	0.00	0.00	135.80

25521

4/27/2012 **********135.80

THE SUM OF ONE HUNDRED THIRTY FIVE DOLLARS AND 80 CENTS **********

City of Yakima
City Treasurer
129 N Second St, 2nd Floor
Yakima, WA 98901

City of Yakima
City Treasurer
129 N Second St, 2nd Floor
Yakima, WA 98901

Check: 25521
Date: 4/27/2012
Vendor: YAK02

Invoice	P.O. Num.	Invoice Amt	Prior Balance	Retention	Discount	Amt. Paid
120425	12-026	135.80	135.80	0.00	0.00	135.80
		135.80	135.80	0.00	0.00	135.80

DEPARTMENT OF COMMUNITY AND ECONOMIC DEVELOPMENT

129 NORTH SECOND STREET, 2ND FLOOR
YAKIMA, WASHINGTON 98901 (509) 575-6126

ENGINEERING PERMIT

PERMIT NUMBER: STRBK-12-116
EXPIRATION DATE: 07/07/2012

PARCEL NUMBER: 18132441442 **LOT SIZE:** .16 ACRE
LEGAL DESCRIPTION: YAKIMA: LOT 3 BLK 252

ONLINE ACCESS CODE: 003652468

106 S 3RD AVE
ENGINEERING - STREETBREAK/CURB/SIDEWALK PERMIT

PROJECT: PROVIDING SUBSURFACE ELECTRIC CONDUIT FROM POLE ON WEST SIDE OF ALLEY TO NEW CONSTRUCTION FOR TEMP EQUIP BUILDING

	NAME			ADDRESS	PHONE
APPLICANT:	ANDERSON ENVIRONMENTAL CONTRACTING			705 COLORADO ST, KELSO, WA 98626	(360) 577-9194
CONTRACTOR:	ANDERSON ENVIRONMNTL CNTRG LLC	**LIC:** ANDEREC005PD	**EXP:**03/20/2014	705 COLORADO ST, KELSO, WA 98626	(360) 577-9194

PARCELS

PARCEL NUMBER: 18132441442 **LOT SIZE:** **PARCEL OWNER:** STOFFERS GREGORY
PARCEL NUMBER: 18132441442 **LOT SIZE:** **PARCEL OWNER:** STOFFERS GREGORY A & SONIA

FEE SUMMARY

STREET BREAK/CURB CUT	$50.00
TOTAL FEES PAID:	**$50.00**

The above-referenced paid fees may not include all applicable fees for your project. Any and all outstanding fees must be paid in full prior to obtaining a final inspection.

PROJECT: PROVIDING SUBSURFACE ELECTRIC CONDUIT FROM POLE ON WEST SIDE OF ALLEY TO NEW CONSTRUCTION FOR TEMP EQUIP BUILDING

CONDITIONS

A violation of any local, state or federal regulation, statute, code, standard, or policy at this location will constitute a violation of permit conditions and wil be subject to STOP WORK ORDER, INSPECTION HOLD, CERTIFICATE OF OCCUPANCY HOLD, NO OCCUPANCY NOTICE OR CEASE AND DESIST ORDER until such time as the violation(s) is corrected.

1. The applicant shall comply with the applicable sections of Titles 8, 12, 14 and 15 of the City of Yakima Municipal Code, applicable City of Yakima Standard Details, and the applicant provisions denoted below.
2. Applicant shall be responsible for all costs and expenses incident to the performing of this work and will also be responsible for any loss or damage that may be directly caused by the performing of this work.
3. A copy of this permit shall be kept in the possession of the person performing this work.
4. The Applicant shall maintain the required Insurance forms and certificates for the entire time that any work is performed subject to this Permit.
5. Open cuts in streets shall be filled, compacted and patched by the Permittee within 48 hours after completion of work, unless the inspector agrees, in advance, to a longer time period.
6. The contractor shall furnish and maintain signs, barricades, lights, flares or any other appurtenance necessary to protect the public or when directed by the Street Inspector in accordance with the MUTCD, Sec. VI.
7. All work shall be performed to the satisfaction of the City Engineer. If said work is not completed or approved, the City Engineer will hire the work done and the applicant shall pay all costs, in full.
8. This permit is valid for 180 calendar days from date of issue.
9. The responsible party shall insure that the street break inspector is notified three (3) working days in advance of starting work and keep the inspector informed on the progress of work so inspections can be made. Work accomplished without proper notification shall be redone with proper inspection.
10. Sidewalk & driveway approaches may be removed & installed by the property owner, following all City specifications. A fully licensed contractor must do any work involving the roadway or curb and gutter.
11. Backfill around or under infrastructure shall be 100% select (5/8 minus) full depth of trench and compact to 95% of ASTM 1557.
12. Driveway location shall be as limited by YMC 15.06.065.
13. If applicant proposes to restrict the traffic to any section of street or alley, the applicant is required to complete and submit for review/approval a Temporary Right of Way Use form and discuss traffic control issues with the Street Inspector.

DEPARTMENT OF COMMUNITY AND ECONOMIC DEVELOPMENT

129 NORTH SECOND STREET, 2ND FLOOR
YAKIMA, WASHINGTON 98901 (509) 575-6126

ENGINEERING PERMIT

PERMIT NUMBER: STRBK-12-116
EXPIRATION DATE: 07/07/2012

PARCEL NUMBER: 18132441442 **LOT SIZE:** .16 ACRE
LEGAL DESCRIPTION: YAKIMA: LOT 3 BLK 252

ONLINE ACCESS CODE: 003652468

106 S 3RD AVE
ENGINEERING - STREETBREAK/CURB/SIDEWALK PERMIT

PROJECT: PROVIDING SUBSURFACE ELECTRIC CONDUIT FROM POLE ON WEST SIDE OF ALLEY TO NEW CONSTRUCTION FOR TEMP EQUIP BUILDING

The information contained in this application is correct and true. I understand that approval of this application will be based on the information contained herein and no work is authorized that is not stated here. I understand that the work performed must conform to City standards and specifications and that condition and fees are subject to change without notice.

I have read, and agree to abide by the conditions of this permit including all conditions of zoning, building codes, and State and Federal laws.

SIGNATURE OF OWNER OR AGENT: _____ **DATE:** _____

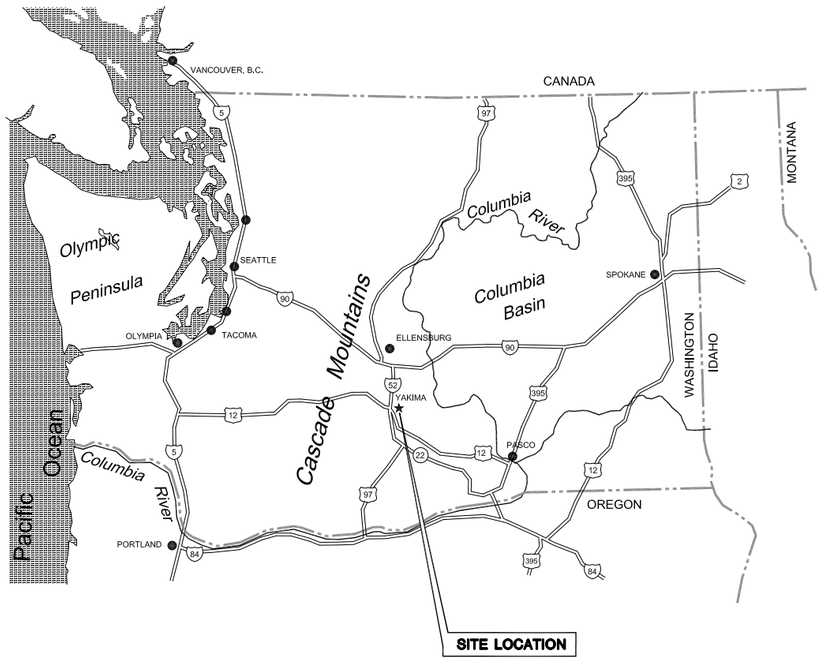
PRINTED NAME: _____

ISSUED BY: Ellena Hazen **DATE ISSUED:** 05/08/2012

Appendix B

Record Drawings

WASHINGTON STATE DEPARTMENT OF ECOLOGY
FRANK WEAR SOIL VAPOR EXTRACTION SYSTEM
YAKIMA, WASHINGTON



REGIONAL MAP

DRAWING INDEX

VICINITY MAP

RECORD DRAWING
These Record Drawings have been prepared based on information provided by the contractor and others. Kennedy/Jenks Consultants has not verified the accuracy or completeness of information provided to them and does not warrant the accuracy or completeness of these Record Drawings. Users of these Record Drawings assume all risk of loss resulting from their use.

NO.	REVISION	DATE	BY
-	RECORD DRAWING	10/12	KJ

SCALES
0 1"
0 25mm
IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

DESIGNED JMF
DRAWN BBH
CHECKED RCG

WASHINGTON STATE DEPARTMENT OF ECOLOGY

FRANK WEAR SOIL VAPOR EXTRACTION SYSTEM YAKIMA, WASHINGTON

Kennedy/Jenks Consultants
FEDERAL WAY, WA

COVER SHEET

FILE NAME 1196016_G01
JOB NO. 1196016*00
DATE JAN. 2012
SHEET G-1 OF

P:\CAD\1111196016.00 Washington DEQ\1196016_G01.dwg
BRYANH 10/29/2012 2:51 PM

CIVIL/GENERAL SYMBOLS

FIRE PROTECTION WATER (EXISTING) — FW FW FW
SEWER (EXISTING) — SS SS SS
STORM DRAIN (EXISTING) — SD SD SD
WATER LINE (EXISTING) — W
RECLAIMED WATER (EXISTING) — RW
GAS LINE (EXISTING) — G G G G
TELEPHONE LINE (EXISTING) — T T T
ELECTRICAL LINE (EXISTING) — E E E
OVERHEAD POWER (EXISTING) — OH OH OH
PUBLIC UTILITY DISTRICT (EXISTING) — PUD
CABLE TV (EXISTING) — CTV
CROSSING UTILITIES (EXISTING)
FENCE — X X
PROPERTY LINE/RIGHT-OF-WAY
EASEMENT
CONTRACTORS WORK AREA LIMITS — WA
CENTERLINE
CULVERT WITH END SECTIONS
HANDRAIL OR GUARDRAIL
WATER SURFACE
GRADE CHANGE LINE
EDGE OF GRAVEL
RIDGE LINE
FLOW LINE
GRADED SLOPE — TOP, TOE
DITCH OR SWALE
CONTOUR MAJOR (NEW) — 110
CONTOUR MINOR (NEW)
CONTOUR MAJOR (EXIST) — 110
CONTOUR MINOR (EXIST)
STRUCTURE OR PIPE (NEW)
STRUCTURE OR PIPE
DEMOLITION
CONCRETE IN SECTION
STEEL IN SECTION
WOOD IN SECTION
GRATING IN PLAN
CHECKERED PLATE IN PLAN
GRAVELED AREA IN PLAN OR SECTION
SAND
BRICK OR CMU IN SECTION
GRADE
FILL
ASPHALT CONCRETE (IN PLAN)
ASPHALT CONCRETE (IN SECTION)

BENCH MARK — BM
SOIL BORING, IDENTIFICATION NUMBER — B-10
SOIL TEST PIT, IDENTIFICATION NUMBER — TP-10
SPOT ELEVATION — 10.35
ELECTROLYSIS TEST STATION — ETS
WATER METER — WM
FIRE DEPT. CONNECTION
FIRE HYDRANT
UTILITY BOX (AS LABELED)
POWER POLE
STREET LIGHT
STREET LIGHT AND TRAFFIC SIGNAL
YARD LIGHT
TRAFFIC SIGNAL
TELEPHONE RISER — T RISER
GUY ANCHOR
CATCH BASIN — CB
DROP INLET — DI
CLEAN OUT — CO
DRIVEWAY
HANDICAP ACCESS RAMP
CURVE NO. — 14
SURVEY PANEL
MONUMENT OR SURVEY POINT
SECTION CORNER
ELEVATION MARK (REFERENCE)
ELEVATION MARK (DESIGN)
FLAG NOTE — 1

SECTION OR DETAIL REFERENCE

SECTION (LETTER) / DETAIL (NUMERAL) — A / M-2
DISIPLINE DESIGNATION USED ONLY WHEN GOING OUTSIDE DISIPLINE REFERENCED ON
DRAWING NUMBER REFERENCED TO/FROM

NOTES:

1. THIS IS A GENERALIZED LEGEND SHEET. THIS CONTRACT MAY NOT USE ALL INFORMATION SHOWN.
2. INFORMATION SHOWN MAY NOT BE ALL INCLUSIVE.
3. FOR ADDITIONAL SYMBOLS SEE SHEETS E1, AND P1.

ABBREVIATIONS

"	INCHES	MANUF	MANUFACTURER
'	FEET	MAT'L	MATERIAL
&	AND	MAX	MAXIMUM
@	AT	MHHW	MEAN HIGH HIGH WATER
℄	CENTERLINE	MIC	MONUMENT IN CASE
Ø	DIAMETER	MISC	MISCELLANEOUS
AC	ASPHALT CONCRETE	MIN	MINIMUM
AGG	AGGREGATE	MH	MANHOLE
APPROX	APPROXIMATE	N	NORTH, NORTHING
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	OC	ON CENTER
BE	BOTTOM ELEVATION	OD	OUTSIDE DIAMETER
BMP	BEST MANAGEMENT PRACTICES	OSHA	OCCUPATION SAFETY AND HEALTH ACT
BOC	BOTTOM OF CONCRETE	OWS	OIL/WATER SEPARATOR
BOP	BOTTOM OF PIPE	PK	PK NAIL (SURVEY CONTROL POINT MARKER)
BOT	BOTTOM	PVC	POLYVINYL CHLORIDE
CB	CATCH BASIN	RE	RIM ELEVATION
CONC	CONCRETE	RR	RAIL ROAD
CONN	CONNECTION	S	SOUTH, SLOPE
CPP	CORRUGATED PLASTIC PIPE	SVE	SOIL VAPOR EXTRACTION
CSTC	CRUSHED SURFACING TOP COURSE	TESC	TEMPORARY EROSION AND SEDIMENT CONTROL
DEMO	DEMOLISH	TOC	TOP OF CONCRETE
DIA	DIAMETER	TYP	TYPICAL
DWG	DRAWING	W	WEST
E	EAST, EASTING		
(E), EXIST	EXISTING		
EL, ELEV	ELEVATION		
FT	FEET		
GAL	GALLON		
GAC	GRANULAR ACTIVATED CARBON		
IE, IN EL	INVERT ELEVATION		

RECORD DRAWING
These Record Drawings have been prepared based on information provided by the contractor and others. Kennedy/Jenks Consultants has not verified the accuracy or completeness of information provided to them and does not warrant the accuracy or completeness of these Record Drawings. Users of these Record Drawings assume all risk of loss resulting from their use.

USE OF DOCUMENTS
THIS DOCUMENT, INCLUDING THE INCORPORATED DESIGNS, IS AN INSTRUMENT OF SERVICE FOR THIS PROJECT AND SHALL NOT BE USED FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF KENNEDY/JENKS CONSULTANTS.

NO.	REVISION	DATE	BY
-	RECORD DRAWING	10/12	KJ

SCALES
0 — 1"
0 — 25mm
IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

DESIGNED JMF
DRAWN BBH
CHECKED RCG

WASHINGTON STATE DEPARTMENT OF ECOLOGY
FRANK WEAR SOIL VAPOR EXTRACTION SYSTEM
YAKIMA, WASHINGTON
Kennedy/Jenks Consultants
FEDERAL WAY, WA

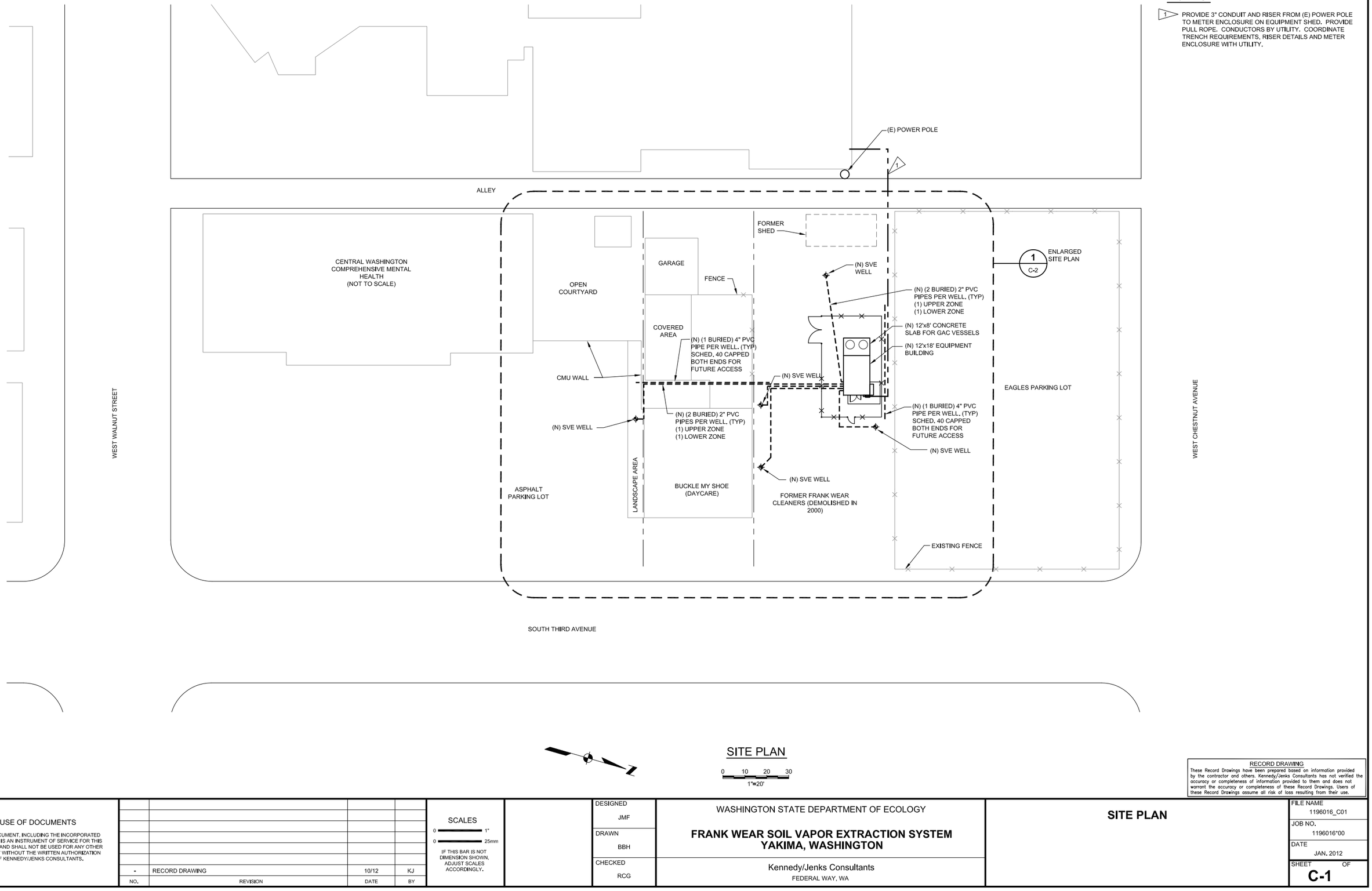
LEGEND, ABBREVIATIONS, NOTES, AND SYMBOLS

FILE NAME 1196016_G02
JOB NO. 1196016*00
DATE JAN. 2012
SHEET G-2 OF

BRYANH 10/29/2012 8:35 AM
P:\CAD\1111196016.00 Washington DEQ\1196016_G02.dwg

NOTES:

1. PROVIDE 3" CONDUIT AND RISER FROM (E) POWER POLE TO METER ENCLOSURE ON EQUIPMENT SHED. PROVIDE PULL ROPE. CONDUCTORS BY UTILITY. COORDINATE TRENCH REQUIREMENTS, RISER DETAILS AND METER ENCLOSURE WITH UTILITY.



SITE PLAN

0 10 20 30
1"=20'

RECORD DRAWING
These Record Drawings have been prepared based on information provided by the contractor and others. Kennedy/Jenks Consultants has not verified the accuracy or completeness of information provided to them and does not warrant the accuracy or completeness of these Record Drawings. Users of these Record Drawings assume all risk of loss resulting from their use.

NO.	REVISION	DATE	BY
-	RECORD DRAWING	10/12	KJ

SCALES
0 1"
0 25mm
IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

DESIGNED JMF
DRAWN BBH
CHECKED RCG

WASHINGTON STATE DEPARTMENT OF ECOLOGY

FRANK WEAR SOIL VAPOR EXTRACTION SYSTEM YAKIMA, WASHINGTON

Kennedy/Jenks Consultants
FEDERAL WAY, WA

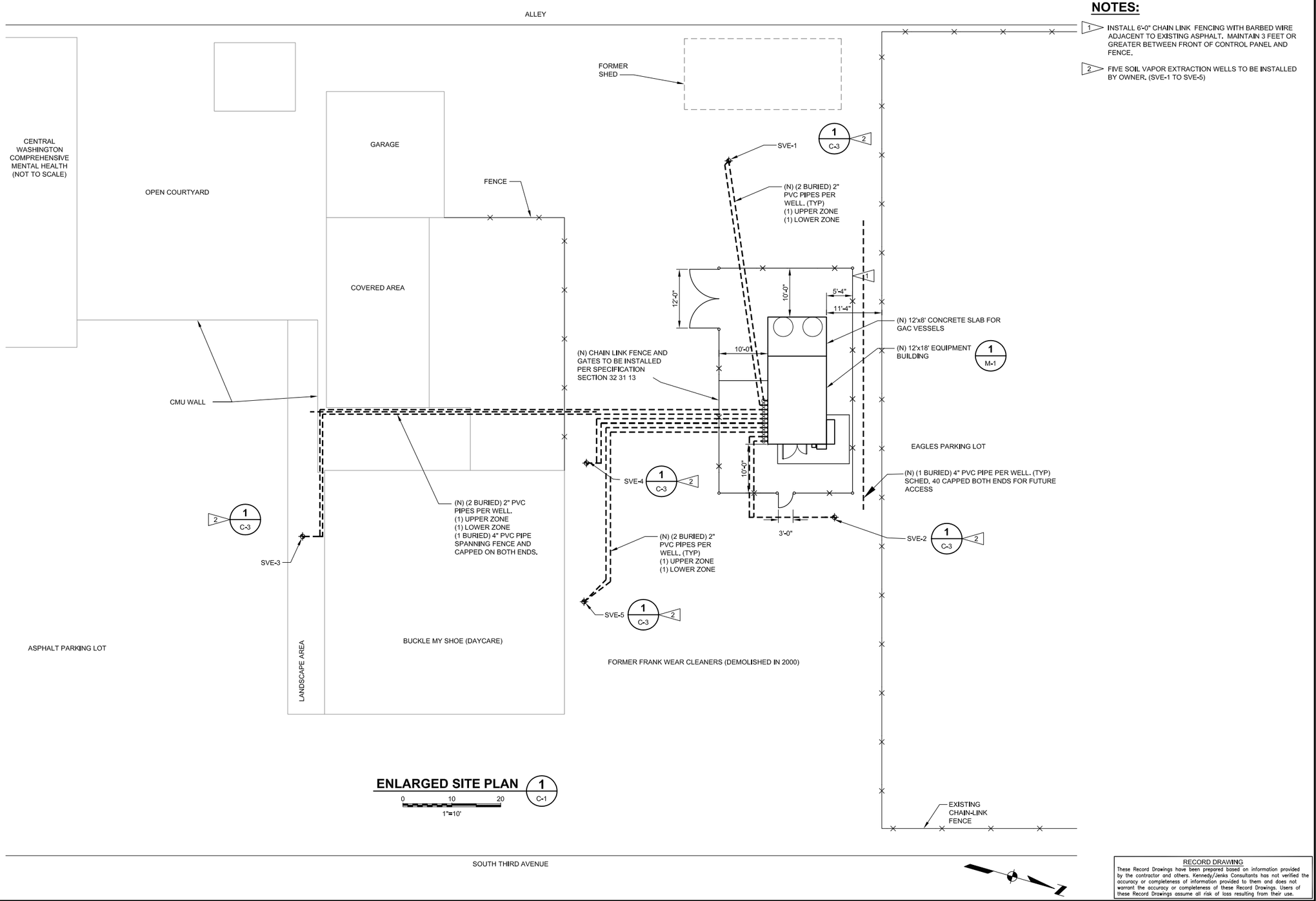
SITE PLAN

FILE NAME 1196016_C01
JOB NO. 1196016*00
DATE JAN. 2012
SHEET C-1 OF

BRYANH 10/29/2012 8:37 AM
P:\CAD\1111196016.00 Washington DEQ\1196016-C01.dwg

NOTES:

1. INSTALL 6'-0" CHAIN LINK FENCING WITH BARBED WIRE ADJACENT TO EXISTING ASPHALT. MAINTAIN 3 FEET OR GREATER BETWEEN FRONT OF CONTROL PANEL AND FENCE.
2. FIVE SOIL VAPOR EXTRACTION WELLS TO BE INSTALLED BY OWNER. (SVE-1 TO SVE-5)



ENLARGED SITE PLAN (1/C-1)

0 10 20

1"=10'

RECORD DRAWING

These Record Drawings have been prepared based on information provided by the contractor and others. Kennedy/Jenks Consultants has not verified the accuracy or completeness of information provided to them and does not warrant the accuracy or completeness of these Record Drawings. Users of these Record Drawings assume all risk of loss resulting from their use.

NO.	REVISION	DATE	BY
-	RECORD DRAWING	10/12	KJ

SCALES

0 1"

0 25mm

IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

DESIGNED JMF

DRAWN BBH

CHECKED RCG

WASHINGTON STATE DEPARTMENT OF ECOLOGY

FRANK WEAR SOIL VAPOR EXTRACTION SYSTEM
YAKIMA, WASHINGTON

Kennedy/Jenks Consultants

FEDERAL WAY, WA

ENLARGED SITE PLAN

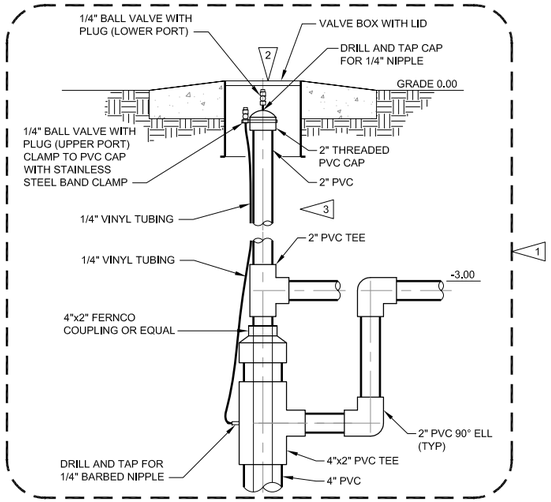
FILE NAME 1196016_C02

JOB NO. 1196016*00

DATE JAN. 2012

SHEET C-2 OF

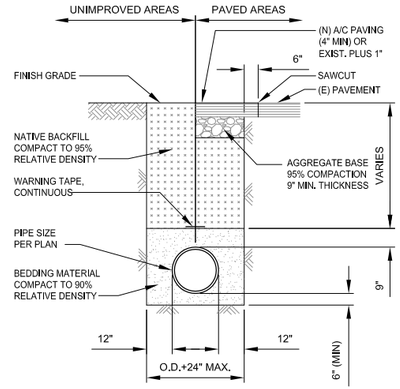
P:\CAD\111\1196016.00 Washington DEQ\1196016-C02.dwg BRYANH 10/29/2012 8:40 AM



WELL DETAIL 1 / C-2

0 1

1 1/2"=1'-0"



TYPICAL TRENCH SECTION FOR PIPES UNDER 24" DIA.

SCALE: NONE

NOTES:

1. CONTRACTOR PROCURED AND INSTALLED: INCLUDES INNER 2" SOLID/SLOTTED PVC PIPE AND RUBBER K-PACKER (OR EQUIVALENT).
2. 8x8 EMCO WHEATON MANHOLE WITH STEEL SKIRT RAISED 1" ABOVE FINISH GRADE ENCASED IN 2x2 FOOT CAST-IN-PLACE CONCRETE 4" THICK SLOPED TO FINISH GRADE. BOLTED LID COVER.
3. PLACE MEDIUM BENTONITE CHIPS AROUND WELL CASING AND HYDRATE. (BELOW MANHOLE COVER AND -3.00)

NO.	REVISION	DATE	BY
-	RECORD DRAWING	10/12	KJ

SCALES
0 1"
0 25mm
IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

DESIGNED JMF
DRAWN BBH
CHECKED RCG

WASHINGTON STATE DEPARTMENT OF ECOLOGY

FRANK WEAR SOIL VAPOR EXTRACTION SYSTEM
YAKIMA, WASHINGTON

Kennedy/Jenks Consultants
FEDERAL WAY, WA

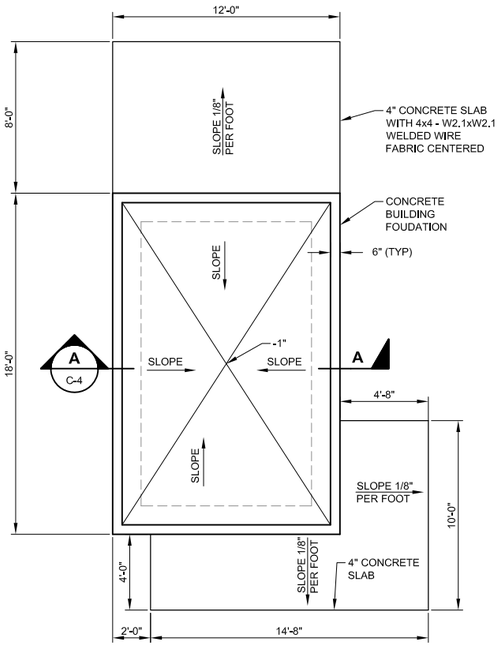
DETAILS

FILE NAME 1196016_C03
JOB NO. 1196016*00
DATE JAN. 2012
SHEET C-3 OF

BRYANH 10/29/2012 8:43 AM
P:\CAD\11\1196016.00 Washington DEQ\1196016-C03.dwg

NOTES:

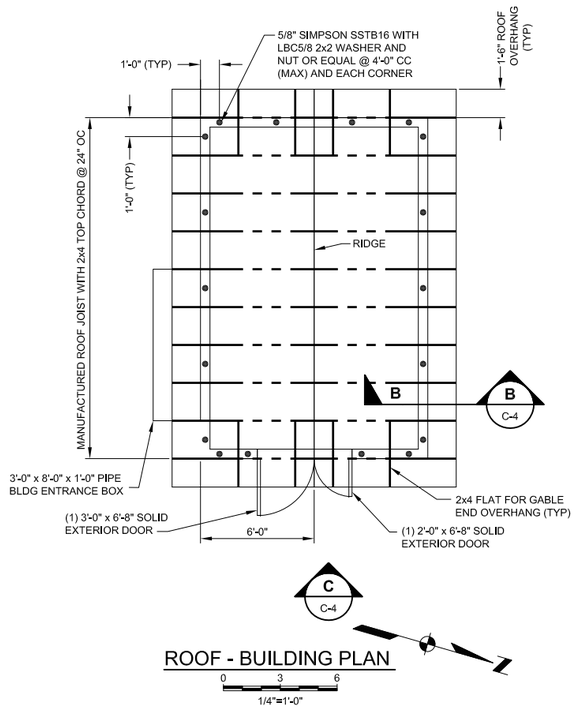
1. CONSTRUCTION TYPE: V-B
2. OCCUPANCY RATING = F-1.
3. AREA = 216 SQUARE FEET.



FOUNDATION PLAN

0 3 6

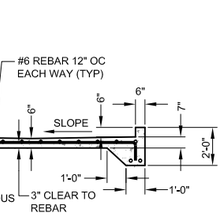
1/4"=1'-0"



ROOF - BUILDING PLAN

0 3 6

1/4"=1'-0"

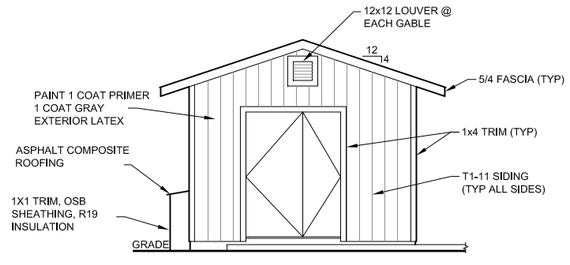


SECTION A

C-4

0 3 6

1/4"=1'-0"

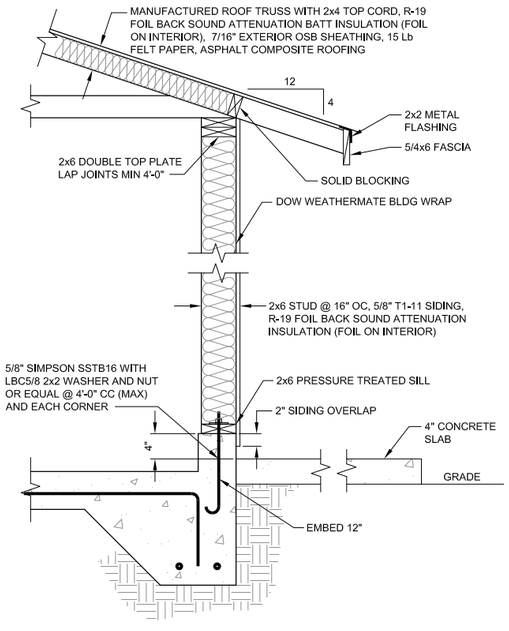


FRONT ELEVATION C

C-4

0 3 6

1/4"=1'-0"



TYPICAL WALL SECTION B

C-4

0 1

1"=1'-0"

RECORD DRAWING

These Record Drawings have been prepared based on information provided by the contractor and others. Kennedy/Jenks Consultants has not verified the accuracy or completeness of information provided to them and does not warrant the accuracy or completeness of these Record Drawings. Users of these Record Drawings assume all risk of loss resulting from their use.

USE OF DOCUMENTS

THIS DOCUMENT, INCLUDING THE INCORPORATED DESIGNS, IS AN INSTRUMENT OF SERVICE FOR THIS PROJECT AND SHALL NOT BE USED FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF KENNEDY/JENKS CONSULTANTS.

NO.	REVISION	DATE	BY
-	RECORD DRAWING	10/12	KJ

SCALES

0 1"

0 25mm

IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

DESIGNED JMF

DRAWN BBH

CHECKED RCG

WASHINGTON STATE DEPARTMENT OF ECOLOGY

FRANK WEAR SOIL VAPOR EXTRACTION SYSTEM
YAKIMA, WASHINGTON

Kennedy/Jenks Consultants
FEDERAL WAY, WA

EQUIPMENT BUILDING

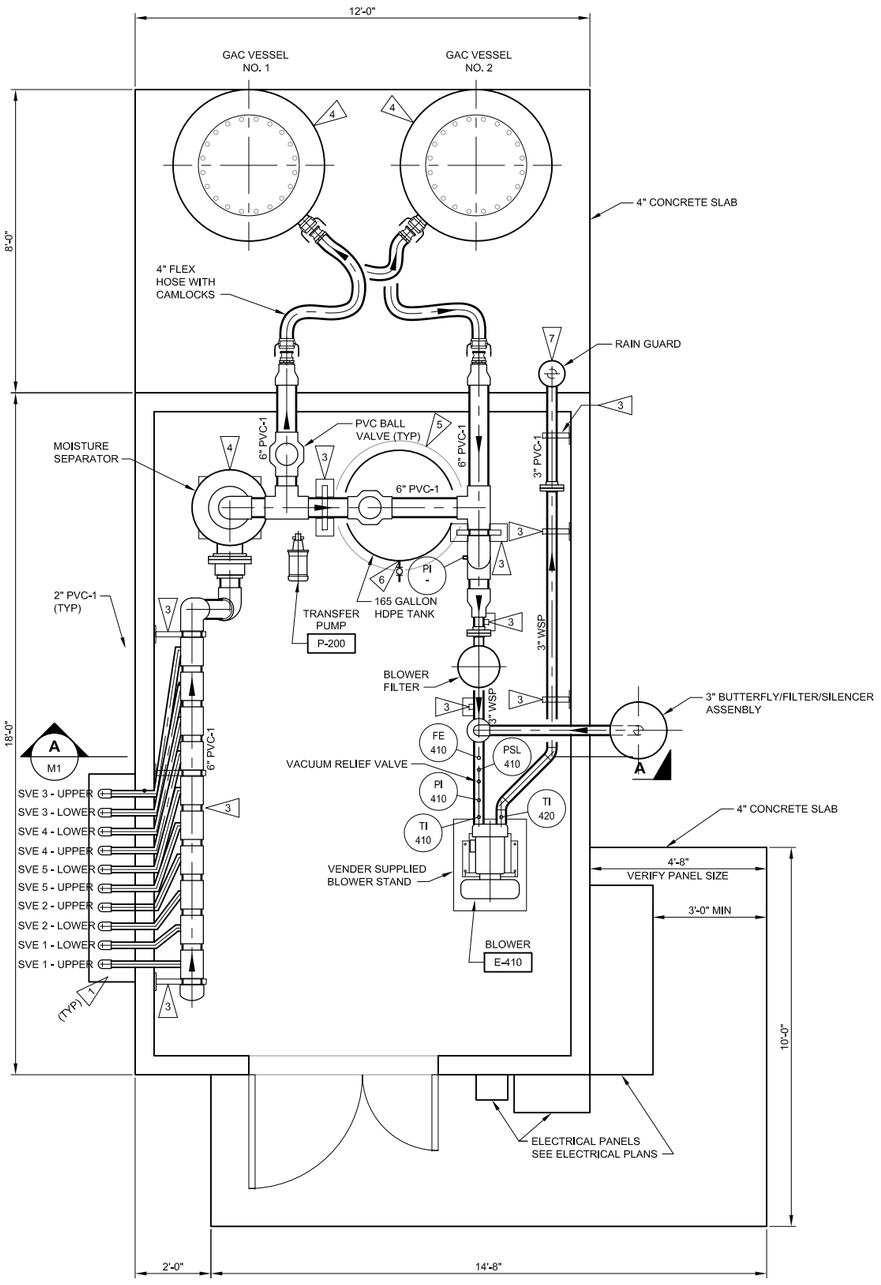
FILE NAME 1196016_C04

JOB NO. 1196016*00

DATE JAN. 2012

SHEET C-4 OF

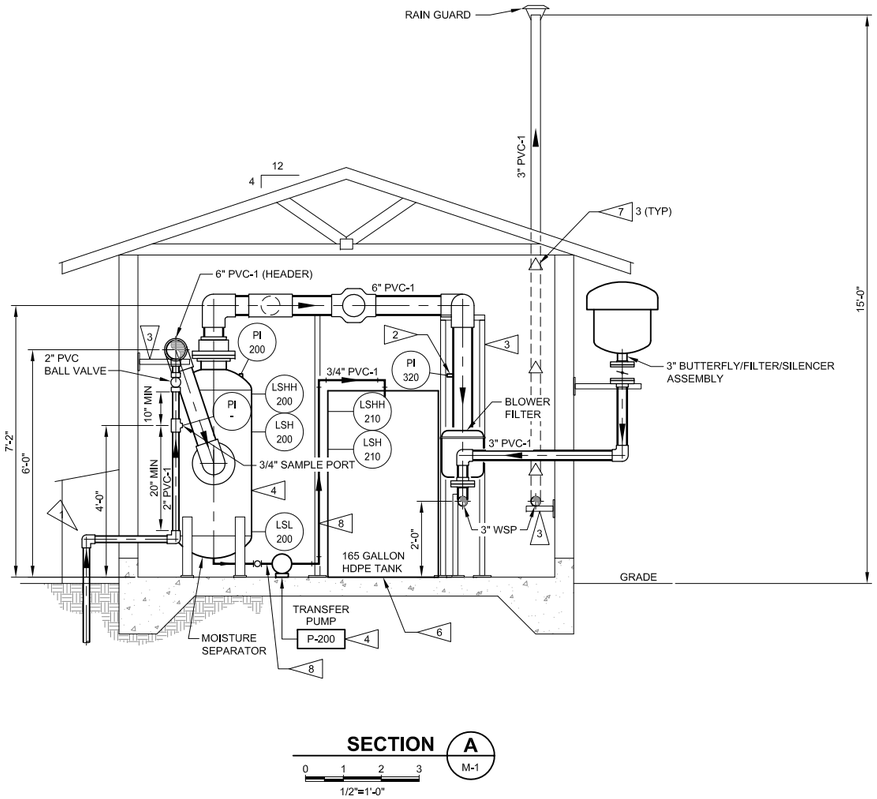
P:\CAD\11\1196016.00 Washington DEQ\1196016-C04.dwg 10/29/2012 4:02 PM BRYANH



PIPING PLAN 1 / C-2

0 1 2 3

1/2"=1'-0"



SECTION A / M-1

0 1 2 3

1/2"=1'-0"

NOTES:

1. PIPE ENTERS BUILDING THROUGH INSULATION BOX BURIED 6" INTO THE GROUND AND INSULATED WITH 2" R19 INSULATION ON INSIDE.
2. INSTALL PRESSURE INDICATOR IN A MANNER TO BE VIEWED FROM STANDING ON THE FLOOR.
3. CONTRACTOR DESIGNED PIPE SUPPORT. USE P1001 DOUBLE UNISTRUT OR EQUIVALENT. SECURE TO WALL OR CONCRETE FLOOR PER SPECIFICATIONS. PROVIDE BLOCKING FOR WALL MOUNTED SUPPORTS.
4. VENDOR SUPPLIED INSULATION AND HEAT TRACE.
5. CONTRACTOR SUPPLIED AND INSTALLED 8W/FT HEAT TRACE AND 3" INSULATION JACKET PER SPECIFICATIONS.
6. CONTRACTOR SUPPLIED 165 GALLON HDPE TANK. REDUCE 2" DRAIN TO 3/4" WITH 3/4" DRAIN VALVE AND GARDEN HOSE THREADED CONNECTION.
7. INSTALL 15-FEET ABOVE FINISH GRADE, THROUGH ROOF OVERHANG AND FLASH APPROPRIATELY. SUPPORT OFF WALL AT 3 LOCATIONS.
8. CONTRACTOR SUPPLIED AND INSTALLED HEAT TRACE AND 1" INSULATION JACKET PER SPECIFICATIONS.

NO.	REVISION	DATE	BY

SCALES

0 1"

0 25mm

IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

RICHARD C. GUGLIOMO — STATE OF WASHINGTON — 11523 — REGISTERED PROFESSIONAL ENGINEER

DESIGNED	JMF
DRAWN	BBH
CHECKED	RCG

WASHINGTON STATE DEPARTMENT OF ECOLOGY

FRANK WEAR SOIL VAPOR EXTRACTION SYSTEM
YAKIMA, WASHINGTON

Kennedy/Jenks Consultants
FEDERAL WAY, WA

EQUIPMENT BUILDING MECHANICAL PLAN AND SECTIONS

FILE NAME	1196016_M01
JOB NO.	1196016*00
DATE	JAN. 2012
SHEET	M-1
OF	

P:\CAD\11\1196016.00 Washington DEQ\1196016-M01.dwg 10/29/2012 4:06 PM BRYANH

ABBREVIATIONS

a	CIRCUIT BREAKER AUX. CONTACT, CLOSED WHEN BREAKER IS CLOSED	FLUOR	FLUORESCENT	OL	THERMAL OVERLOAD RELAY
		FREQ	FREQUENCY	PB	PULLBOX
A	AMMETER, AMPERES	FT	FEET, FOOT	PE	PHOTOELECTRIC
AC	ALTERNATING CURRENT	FU	FUSE	PEC	PHOTOELECTRIC CELL
A/D	ANALOG TO DIGITAL	FUTURE	FUTURE	PF	POWER FACTOR
ADJ	ADJUSTABLE	FVNR	FULL VOLTAGE NON REVERSING	pH	MEASURE OF ACIDITY OR ALKALINITY
AF	AMPERE FRAME	FVR	FULL VOLTAGE REVERSING		
AFD	ADJUSTABLE FREQUENCY DRIVE	FWD	FORWARD	PH	PHASE
AFF	ABOVE FINISHED FLOOR	GA	GAUGE	PLC	PROGRAMMABLE LOGIC CONTROLLER
AIC	AMPERES INTERRUPTING CAPACITY	GALV	GALVANIZED		
AL	ALUMINUM	GEN	GENERATOR	PNL	PANEL
ALT	ALTERNATOR	GF	GROUND FAULT INTERRUPTER	PNLBD	PANELBOARD
A/M	AUTO/MANUAL CONTROLLER	G, GND	GROUND	PRI	PRIMARY
ANN	ANNUNCIATOR	GRS	GALVANIZED RIGID STEEL	PS	PRESSURE SWITCH
APPROX	APPROXIMATE	H_2O_2	HYDROGEN PEROXIDE	PSI	POUNDS PER SQUARE INCH
AS	AMMETER SWITCH	HH	HANDHOLE	PVC	POLYVINYL CHLORIDE
AT	AMMETER TRIP	HMI	HUMAN MACHINE INTERFACE	PWR	POWER
ATS	AUTOMATIC TRANSFER SWITCH	HOA	HAND-OFF-AUTOMATIC	(RL)	RELOCATE
AUTO	AUTOMATIC	HOR	HAND-OFF-REMOTE	(RLD)	RELOCATED
AUX	AUXILIARY	HORIZ	HORIZONTAL	RCPT	RECEPTACLE
AWG	AMERICAN WIRE GAGE	HP	HORSEPOWER	RCT	REPEAT CYCLE TIMER
b	CIRCUIT BREAKER AUX. CONTACT, CLOSED WHEN BREAKER IS OPEN	HPS	HIGH PRESSURE SODIUM	REQD	REQUIRED
		HTR	HEATER	RM	ROOM
		HV	HIGH VOLTAGE	RPM	REVOLUTIONS PER MINUTE
BCG	BARE COPPER GROUND	HZ	HERTZ (CYCLES PER SECOND)	RT	RESET TIMER
BLDG	BUILDING	IND LT	INDICATING LIGHT	SCADA	SUPERVISORY CONTROL AND DATA ACQUISTION
C	CONDUIT	INCAND	INCANDESCENT		
CAB	CABINET	INSTR	INSTRUMENT	SCR	SILICON CONTROLLED RECTIFIER
CAP	CAPACITOR	I/O	INPUT/OUTPUT	SD	SMOKE DETECTOR
CB	CIRCUIT BREAKER	JB	JUNCTION BOX	SEC	SECONDS, SECONDARY
CC	CONTROL CABLE, CLOSING COIL	KA	KILOAMPERES	SECT	SECTION
CKT	CIRCUIT	KCMIL	THOUSANDS OF CIRCULAR MILS	SF	SUPPLY FAN
CO	CONDUIT ONLY	KV	KILOVOLTS	SH	SIGNAL HANDHOLE
COMM	COMMUNICATION	KVA	KILOVOLT AMPERES	SHT	SHEET
COND	CONDUCTOR	KVAR	KILOVOLT AMPERES REACTIVE	SN	SOLID NEUTRAL
CONT	CONTINUED, CONTINUATION	KVARH	KILOVOLT AMPERES REACTIVE HOURS	SPECS	SPECIFICATIONS
CPT	CONTROL POWER TRANSFORMER			SPDT	SINGLE POLE DOUBLE THROW
CP	CONTROL PANEL	KW	KILOWATTS	SS	STAINLESS STEEL
CR	CONTROL RELAY	KWH	KILOWATT HOURS	SW	SWITCH
CS	CONTROL SWITCH	LP	LIGHTING PANEL	SWBD	SWITCHBOARD
CT	CURRENT TRANSFORMER	LTG	LIGHTING	SWGR	SWITCHGEAR
CWP	COLD WATER PIPE	LTS	LIGHTS	SYNC	SYNCHRONIZING
DC	DIRECT CURRENT	(M)	MODIFIED	TB	TERMINAL BOX, TERMINAL BOARD
DIA	DIAMETER	mA	MILLIAMPERES	TC	TELEPHONE CABINET
DIAG	DIAGRAM	MAX	MAXIMUM	TEL	TELEPHONE
DISC	DISCONNECT	MCC	MOTOR CONTROL CENTER	TEMP	TEMPERATURE
DISTR	DISTRIBUTION	MCP	MOTOR CIRCUIT PROTECTOR	TSP	TWISTED SHIELDED PAIR
DN	DOWN	MFR	MANUFACTURER	TYP	TYPICAL
DP	DISTRIBUTION PANEL	MIN	MINIMUM	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
DPDT	DOUBLE POLE DOUBLE THROW	MISC	MISCELLANEOUS		
DPST	DOUBLE POLE SINGLE THROW	MOV	MOTOR OPERATED VALVE		
DWG	DRAWING	MS	MOTOR STARTER	UG	UNDERGROUND
(E)	EXISTING	MTD	MOUNTED	UH	UNIT HEATER
EA	EACH	MTG	MOUNTING	V	VOLTS
EF	EXHAUST FAN	MTS	MANUAL TRANSFER SWITCH	VA	VOLT-AMPERES
EH	ELECTRICAL HANDHOLE	(N)	NEW	VFD	VARIABLE FREQUENCY DRIVE
EL, ELEV	ELEVATION	NC	NORMALLY CLOSED	VAR	VOLT AMPERES REACTIVE
ELEC	ELECTRIC, ELECTRICAL	NEC	NATIONAL ELECTRICAL CODE	VERT	VERTICAL
ELEM	ELEMENTARY	NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION	VH	VAR-HOUR
EMERG	EMERGENCY			VS	VOLTMETER SWITCH
EM	ELECTRICAL MANHOLE			W	WIRE, WATTS
ENCL	ENCLOSURE	NEUT	NEUTRAL	WHM	WATTHOUR METER
EQ	EQUAL	NIC	NOT IN CONTRACT	WHDM	WATTHOUR DEMAND METER
EQPT	EQUIPMENT	NO	NORMALLY OPEN, NUMBER	WP	WEATHERPROOF
ETM	ELAPSED TIME METER	NTS	NOT TO SCALE	WT	WATERTIGHT
FDR	FEEDER	OH	OVERHEAD	WTP	WATER TREATMENT PLANT
FLEX	FLEXIBLE	OT	OVER TEMPERATURE	XFMR	TRANSFORMER

GENERAL NOTES:

G1. THESE DRAWINGS ARE DIAGRAMMATIC ONLY; EXACT LOCATIONS OF ELECTRICAL EQUIPMENT SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER. THE INSTALLATION OF ALL EQUIPMENT SHOWN ON THESE DRAWINGS OR DESCRIBED IN THE SPECIFICATIONS SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN THE LATEST EDITIONS OF ALL APPLICABLE CODES AND UTILITY COMPANY STANDARDS. CONTACT THE UTILITY COMPANY REPRESENTATIVES AND VERIFY THEIR REQUIREMENTS.

G2. THIS IS A GENERALIZED LEGEND SHEET. THIS CONTRACT MAY NOT USE ALL INFORMATION SHOWN.

G3. NOTIFY THE ENGINEER IMMEDIATELY IF CONFLICTS IN EQUIPMENT LOCATIONS ARE DISCOVERED OR IF PROBLEMS ARISE DUE TO FIELD CONDITIONS, LACK OF INFORMATION OR ANY OTHER REASON. NO PAYMENT WILL BE MADE FOR CHANGES WHICH HAVE NOT BEEN FAVORABLY REVIEWED BY THE ENGINEER.

G4. INFORMATION SHOWN MAY NOT BE ALL INCLUSIVE. SEE ALSO ANSI C37.2, Y1.1, Y32.2, AND Y32.9.

G5. VERIFY ALL COLOR REQUIREMENTS BEFORE ORDERING MATERIALS.

G6. REFER TO THE MECHANICAL DRAWINGS FOR CERTAIN CONTROL DIAGRAMS AND EXACT LOCATIONS OF MECHANICAL EQUIPMENT AND FOR CERTAIN CONNECTIONS TO BE MADE TO ELECTRICAL CIRCUITS.

PLAN NOTES:

P1. CONDUIT SIZE AND FILL SHALL BE AS INDICATED. WHERE NO SIZE IS SHOWN, THE CONDUIT SHALL BE SIZED IN ACCORDANCE WITH THE EDITION OF THE NATIONAL ELECTRICAL CODE ADOPTED BY THE AUTHORITY HAVING CODE ENFORCEMENT JURISDICTION. WHERE NO FILL IS INDICATED, THE FILL SHALL BE 2#12. PROVIDE 3/16 INCH NYLON PULL ROPE IN EACH EMPTY CONDUIT.

P2. CONDUIT AND WIRE LAYOUT FOR LIGHTING AND RECEPTACLES NOT SHOWN. PROVIDE PER NEC.

P3. LOWER CASE LETTERS ADJACENT TO A SWITCH OR LIGHT FIXTURE INDICATE A SWITCHED CIRCUIT. FOR 4 LAMP FLUORESCENT FIXTURES WIRED IN PAIRS WITHIN EACH FIXTURE, THE "a" SWITCH CONTROLS THE OUTER LAMPS AND THE "b" SWITCH CONTROLS THE INNER LAMPS; WIRE 3 LAMP FIXTURES SIMILARLY.

P4. NUMBER OF CIRCLES DOES NOT REPRESENT THE NUMBER OF CONDUITS IN THE ENCASEMENT.

PLAN SYMBOLS

- OH — OVERHEAD POWER LINE
- UNDERGROUND CONDUIT, CONCRETE ENCASEMENT SEE NOTE P4
- UNDERGROUND CONDUIT, DIRECT BURIED SEE NOTE P4
- CONDUIT CONCEALED IN CONC SLAB OR UNDER SLAB
- CONDUIT CONCEALED IN WALL & CEILING
- CONDUIT EXPOSED
- 3/4"C-3#12, 1#12G — CALLOUT INDICATING CONDUIT SIZE, NUMBER OF WIRES AND WIRE SIZE
- 100 — CALLOUT INDICATING CONDUIT AND WIRE PER SCHEDULE
- CONDUIT RUN, HATCH MARKS INDICATE NUMBER OF #12 WIRES, NO HATCH MARKS IS 2#12, UNLESS OTHERWISE NOTED
- #10 — CONDUIT RUN, HATCH MARKS INDICATE NUMBER OF WIRES. CALLOUT INDICATES WIRE SIZE
- MULTIPLE CONDUIT RUN
- HOME RUN TO PANELBOARD OR AS INDICATED
- FLEXIBLE CONDUIT
- CONDUIT RUN, BROKEN AND CONTINUED ON SAME SHEET OR AS NOTED
- CONDUIT WITH SEAL FITTING
- CAP ON CONDUIT STUB
- OPEN CIRCLE DENOTES UPWARD CONDUIT RISER
- SOLID CIRCLE DENOTES DOWNWARD CONDUIT RISER
- T/D — TELEPHONE / DATA CONDUIT
- T — TELEPHONE CONDUIT
- F — FIRE ALARM CONDUIT
- S — SECURITY ALARM CONDUIT
- INDICATES REMOVAL
- M — MOTOR
- DISCONNECT SWITCH
- COMBINATION MOTOR STARTER AND DISCONNECT SWITCH
- S_{MS} — MANUAL MOTOR STARTER
- CONTROL STATION
- EQUIPMENT MOUNTING STAND
- GROUND ROD AND BOX
- INSTRUMENT
- D — MAGNETIC DOOR HOLDER
- K — INTRUSION REMOTE KEY PAD
- D — INTRUSION DOOR SWITCH
- SURFACE MOUNTED PANELBOARD
- FLUSH MOUNTED PANELBOARD
- FACP — FIRE ALARM CONTROL PANEL
- SAP — SECURITY ALARM PANEL

- S_* — SINGLE POLE SWITCH
  * 2 = 2 POLE, 3 = 3 WAY, 4 = 4 WAY, K = KEY OPERATED, WP = WEATHERPROOF, D = DIMMER, P = SWITCH WITH PILOT LIGHT
- S^{ab} — SINGLE POLE SWITCH SEE NOTE P3
- S^{ab} — DUAL RELAY WALL SWITCH INFRARED OCCUPANCY SENSOR
- ab — FLUORESCENT FIXTURE SEE NOTE P3
- FLUORESCENT FIXTURE WITH NIGHT LIGHTING (UNSWITCHED)
- OR FLUORESCENT FIXTURE WITH SELF-CONTAINED EMERGENCY BALLAST/BATTERY
- FLUORESCENT OPEN STRIP FIXTURE
- WALL/CEILING MOUNT FIXTURE
- POLE MOUNT FIXTURE
- EMERGENCY LIGHT WITH SELF CONTAINED BATTERY
- A — LIGHT FIXTURE IDENTIFICATION
- * — DUPLEX WALL RECEPTACLE, 120V
  * WP = WEATHERPROOF, IG = ISOLATED GROUND, GF = GROUND FAULT INTERRUPTER
- DOUBLE DUPLEX WALL RECEPTACLE, 120V
- SINGLE RECEPTACLE, 120V
- SINGLE RECEPTACLE, 208V
- DOCK RECEPTACLE, 30A
- DOCK RECEPTACLE, 50A
- J J — WALL / CEILING MOUNT JUNCTION BOX
- J — FLOOR RECESS MOUNT JUNCTION BOX
- T — WALL MOUNT THERMOSTAT
- WALL TELEPHONE OUTLET
- F — FIRE ALARM PULL STATION
- F — FIRE ALARM HORN WITH VISUAL
- F — FIRE ALARM FLASHING LIGHT
- F — FIRE ALARM HORN
- B — BELL
- BUZZER
- H — HEAT DETECTOR
- S — SMOKE DETECTOR
- EHH SHH — ELECTRICAL HANDHOLE / SIGNAL HANDHOLE
- EMH — ELECTRICAL MANHOLE
- XFMR — DOCK SUBSTATION
- MAIN DISTRIBUTION PANELBOARD

SINGLE LINE SYMBOLS

- MCP / 00AT — CIRCUIT BREAKER, 3 POLE EXCEPT WHERE NOTED. RATING IN AMPERES AS NOTED. IF TWO RATINGS APPEAR (EG. 100/625) THEN DEVICE IS MCP; NUMERATOR IS CONTINUOUS CURRENT RATING & DENOMINATOR IS INSTANTANEOUS TRIP SETTING.
- 000AT / 000AF
- POWER CIRCUIT BREAKER DRAWOUT ABOVE 1500V RATING AS NOTED
- SURGE ARRESTER
- CURRENT TRANSFORMER
- VOLTAGE TRANSFORMER
- POWER OR DISTRIBUTION TRANSFORMER RATING AS NOTED
- GEN — GENERATOR
- CONTROL PACKAGE PROVIDED WITH THE DRIVEN EQUIPMENT
- 100 — MOTOR. NUMBER INDICATES HORSEPOWER
- 1 — ELEMENTARY DIAGRAM NUMBER
- ST — SHUNT TRIP
- FUSE
- FUSE CUTOUT
- GROUND CONNECTION
- SWITCH, 3 POLE EXCEPT WHERE NOTED. RATING IN AMPERES AS NOTED
- AUTOMATIC TRANSFER SWITCH 3 POLE, RATING AS NOTED
- BUS STAB ON MCC OR SWITCHGEAR, CORD & PLUG CONNECTION FOR MOTORS
- * — A - AMMETER, V - VOLTMETER, WH - WATTHOUR METER, GS - GROUND FAULT SENSOR
- AS — AMMETER SWITCH
- VS — VOLTMETER SWITCH
- K — KIRK KEY INTERLOCK
- # — RELAY DEVICE FUNCTION, # PER ANSI NUMBER C37.2
- TERMINATOR / POTHEAD
- SPLICE, TERMINATION
- 2 — MOTOR STARTER. NUMBER INDICATES NEMA SIZE
- CAPACITOR - KVAR INDICATED
- AFD — * AFD - ADJUSTABLE FREQUENCY DRIVE, SS - SOLID STATE STARTER, VFD - VARIABLE FREQUENCY DRIVE
- SS * 5 5 — * AFD OR SS WITH BYPASS CONTACTOR, CONTACTOR NEMA SIZE AS INDICATED
- 5 SS * 5 — * REDUCED VOLTAGE SOLID STATE STARTER WITH BYPASS CONTACTOR, CONTACTOR NEMA SIZE AS INDICATED
- 100 — CALLOUT INDICATING CONDUIT AND WIRE PER SCHEDULE

ELEMENTARY DIAGRAM SYMBOLS

- H1 H3 H2 H4 / X1 X2 — CONTROL POWER TRANSFORMER
- H O A — HAND-OFF-AUTOMATIC SWITCH, X-INDICATES CONTACTS CLOSED
- H O R — HAND-OFF-REMOTE SWITCH, X-INDICATES CONTACTS CLOSED
- CIRCUIT BREAKER, 1-POLE
- CIRCUIT BREAKER, 3-POLE
- M — MOTOR
- ETM — ELAPSED TIME METER
- ** — CONTROL DEVICE COIL. PREFIX NUMBER, WHEN USED, DISTINGUISHES BETWEEN DEVICES OF THE SAME TYPE.

** ALT - ALTERNATOR; CR - CONTROL RELAY; GR - GENERAL RELAY; ISR - INTRINSICALLY SAFE RELAY; LR - LATCH RELAY; SV - SOLENOID VALVE; PR - PROBE RELAY; TR - TIMING RELAY

- INDICATING LIGHT
- 1 — PUSH-TO-TEST INDICATING LIGHT
  * COLORS: A - AMBER, B - BLUE, C - CLEAR, G - GREEN, R - RED, N - NEON, W - WHITE, Y - YELLOW
- ON OFF — SINGLE POLE SWITCH
- EMERGENCY PUSHBUTTON
- NORMALLY OPEN / NORMALLY CLOSED — PUSHBUTTON SWITCH
- SWITCH 1-POLE
- SWITCH 3-POLE
- MULTI-POSITION SELECTOR SWITCH
- BUS STAB ON MCC
- CONTACT, NORMALLY OPEN / CLOSED
- OL — THERMAL OVERLOAD
- GROUND CONNECTION
- FUSE. RATING IN AMPERES
- TERMINAL
- MOTOR HEATER — MOTOR SPACE HEATER
- BUZZER
- BELL
- HORN

- 1 CR 2-2, 3, 0, 0
  - CROSS REFERENCE TO ANOTHER DIAGRAM
  - NORMALLY OPEN CONTACT ON THE OTHER DIAGRAM
  - SPARE CONTACTS ON RELAY. IF OMITTED, THEN THE SPECS REQUIREMENTS REGARDING SPARE CONTACTS APPLY.
  - NORMALLY CLOSED CONTACT ON THIS DIAGRAM

SENSING SWITCHES		
CLOSE ON		SENSED VARIABLE
RISING	FALLING	
		FLOW
		LEVEL
		PRESSURE
		TEMPERATURE
LIMIT SWITCHES		
		CLOSE ON REACHING LIMIT
		CLOSE ON LEAVING LIMIT
TORQUE SWITCHES		
		OPEN ON HIGH TORQUE
		CLOSE ON LOW TORQUE

TIMED CONTACTS			
SYMBOL	NORMAL	OPEN TO CLOSED	CLOSED TO OPEN
	OPEN	DELAYED	INSTANTANEOUS
	CLOSED	INSTANTANEOUS	DELAYED
	OPEN	INSTANTANEOUS	DELAYED
	CLOSED	DELAYED	INSTANTANEOUS

ELEMENTARY DIAGRAM NOTES:

E1. UNDERLINED WORDS SHOWN AT A PUSHBUTTON, LIGHT, SELECTOR SWITCH, ETC. INDICATE THE LEGEND PLATE REQUIREMENT FOR THAT PARTICULAR DEVICE. ANY ADDITIONAL NAMEPLATES ARE INDICATED ON ELEVATIONS WITH THE REQUIRED NAMEPLATE INSCRIPTIONS.

E2. "NORMAL" STATUS OF SWITCHES OR CONTACTS IS THE SHELF POSITION.

E3. NUMBERS AND LETTERS IDENTIFY DEVICE.

RECORD DRAWING

These Record Drawings have been prepared based on information provided by the contractor and others. Kennedy/Jenks Consultants has not verified the accuracy or completeness of information provided to them and does not warrant the accuracy or completeness of these Record Drawings. Users of these Record Drawings assume all risk of loss resulting from their use.

USE OF DOCUMENTS

THIS DOCUMENT, INCLUDING THE INCORPORATED DESIGNS, IS AN INSTRUMENT OF SERVICE FOR THIS PROJECT AND SHALL NOT BE USED FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF KENNEDY/JENKS CONSULTANTS.

NO.	REVISION	DATE	BY
-	RECORD DRAWING	10/12	KJ

SCALES

0 1"

0 25mm

IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

DESIGNED PAR

DRAWN WL

CHECKED RCG

WASHINGTON STATE DEPARTMENT OF ECOLOGY

FRANK WEAR SOIL VAPOR EXTRACTION SYSTEM
YAKIMA, WASHINGTON

Kennedy/Jenks Consultants
FEDERAL WAY, WA

ELECTRICAL LEGEND, ABBREVIATIONS AND SYMBOLS

FILE NAME 1196016_E01

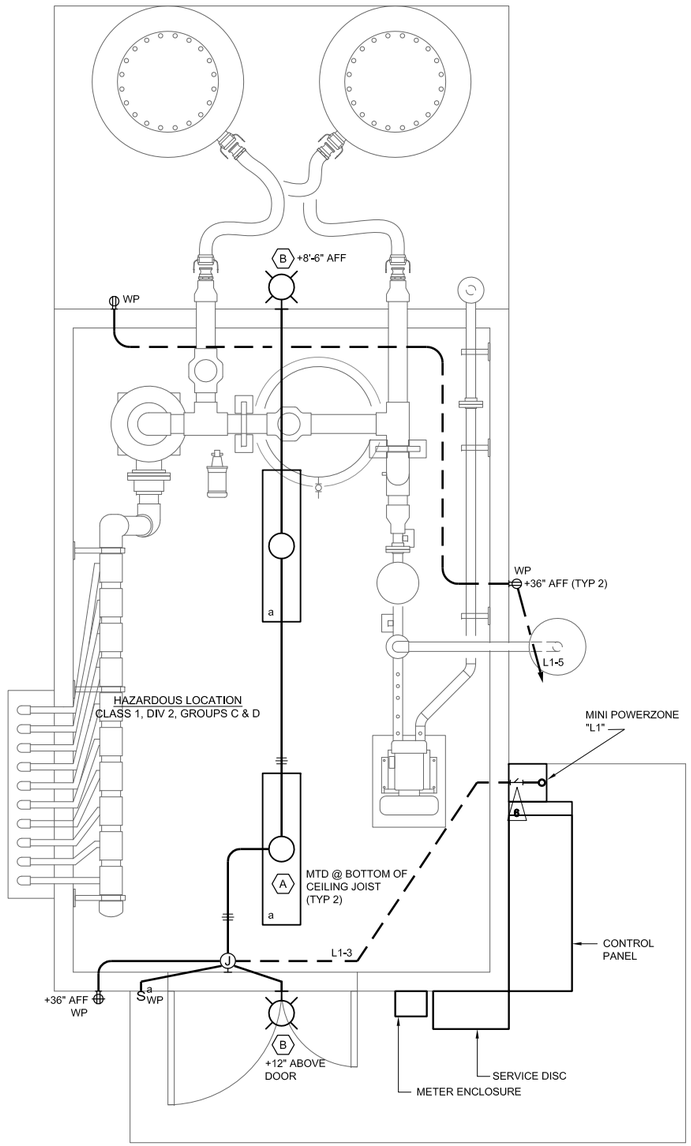
JOB NO. 1196016*00

DATE JAN. 2012

SHEET E-1 OF

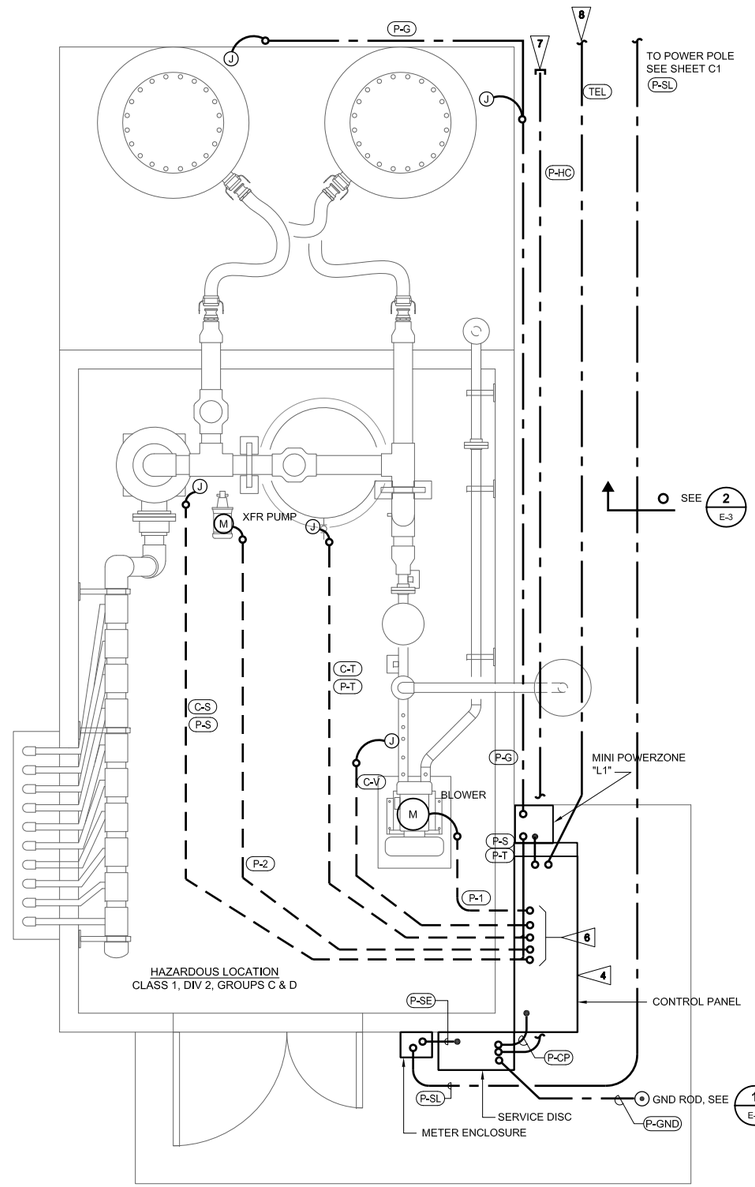
P:\CAD\111\1196016.00 Washington DEQ\1196016_E01.dwg

BRYANH 10/29/2012 8:57 AM



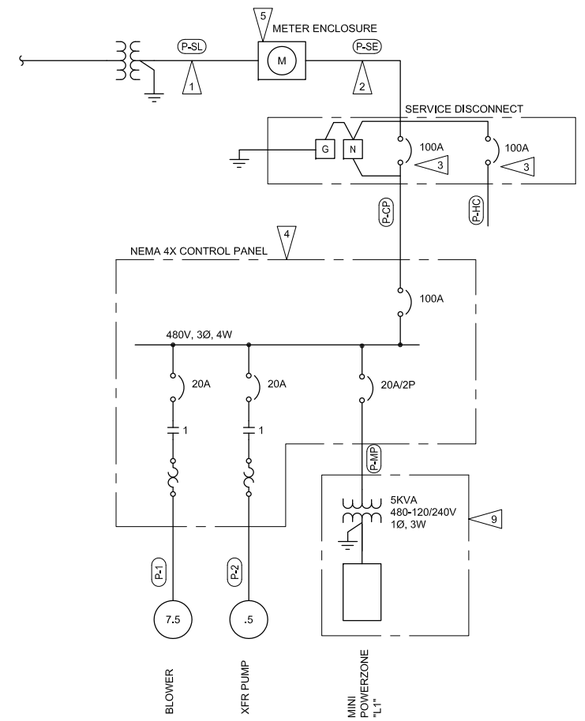
LIGHTING PLAN

SCALE: 1/2" = 1'-0"



POWER PLAN

SCALE: 1/2" = 1'-0"



SINGLE LINE DIAGRAM

NOTES:

1. PROVIDE 3" CONDUIT FROM POWER POLE. PROVIDE TRENCH AND BACKFILL PER UTILITY REQUIREMENTS. CONDUCTORS BY UTILITY.
2. PROVIDE CONDUIT AND WIRE FROM METER ENCLOSURE TO SERVICE DISCONNECT.
3. SERVICE DISCONNECT IN NEMA 3R ENCLOSURE. MARK AS SUSE.
4. VENDOR SUPPLIED NEMA 4X CONTROL PANEL.
5. METER BASE AND CT ENCLOSURE PER UTILITY REQUIREMENTS.
6. PROVIDE CONDUIT SEAL.
7. CONNECTION FOR FUTURE EQUIPMENT. STUB AT 12" AFF AND CAP. PROVIDE PULL ROPE.
8. PROVIDE CONDUIT FROM CONTROL PANEL TO POWER POLE FOR TELEPHONE SYSTEM CONNECTION. COORDINATE EXACT REQUIREMENTS WITH LOCAL UTILITY. CABLE BY UTILITY.
9. MINI POWER ZONE, SQUARE D MPZ5S40F, SUITABLE FOR OUTDOOR USE, OR EQUAL.

RECORD DRAWING

These Record Drawings have been prepared based on information provided by the contractor and others. Kennedy/Jenks Consultants has not verified the accuracy or completeness of information provided to them and does not warrant the accuracy or completeness of these Record Drawings. Users of these Record Drawings assume all risk of loss resulting from their use.

NO.	REVISION	DATE	BY
-	RECORD DRAWING	10/12	KJ

SCALES

0 1"

0 25mm

IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

DESIGNED PAR / WL

DRAWN PAR / WL

CHECKED RCG

WASHINGTON STATE DEPARTMENT OF ECOLOGY

FRANK WEAR SOIL VAPOR EXTRACTION SYSTEM
YAKIMA, WASHINGTON

Kennedy/Jenks Consultants
FEDERAL WAY, WA

ELECTRICAL SINGLE LINE DIAGRAM AND EQUIPMENT BUILDING PLANS

FILE NAME 1196016_E02

JOB NO. 1196016*00

DATE JAN. 2012

SHEET OF **E-2**

BRYANH 10/29/2012 8:54 AM

P:\CAD\1111196016.00 Washington DEQ\1196016_E02.dwg

MINI POWERZONE L1

240 /120 VOLTS, SINGLE PHASE, 3 WIRE		BUS: 100A	AIC: 10KA		MAIN: 30A MCB	MOUNTING:	PANEL
CKT. NO.	DESCRIPTION	CONNECTED KVA A	TRIP AMPS/ POLES	CKT. NO.	DESCRIPTION	CONNECTED KVA B	TRIP AMPS/ POLES
1	EXHAUST FAN	0.8	20/1	2	HEAT TRACE SEPARATOR	0.2	20/1
3	LIGHTING	0.1	20/1	4	HEAT TRACE TANK	0.2	20/1
5	RECEPTACLES	0.1	20/1	6	HEAT TRACE GAC TANKS	0.4	20/1
PHASE SUBTOTALS (KVA):		1.0				0.8	
TOTAL KVA:					KVA	1.8	
TOTAL AMPERES:					A	7.5	

LOAD SUMMARY

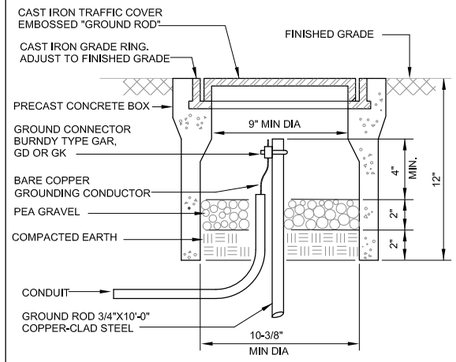
EQUIPMENT	CONNECTED LOAD HP	CONNECTED LOAD AMPERES	DEMAND FACTOR	CALCULATED LOAD AMPERES
BLOWER E-410	7.5	11.0	1.00	11.0
PUMP P-200	0.5	1.0	1.00	1.0
				0.0
TRANSFORMER		8.3	0.80	6.7
25% OF LARGEST MOTOR		2.8	1.00	2.8
480/277V, 3-PHASE, 4-WIRE			TOTALS:	21

LIGHTING FIXTURE SCHEDULE

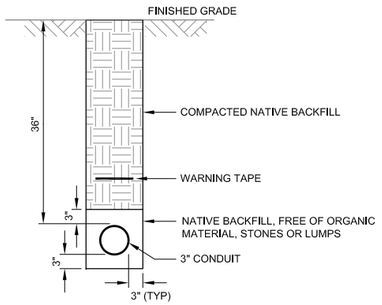
SYMBOL	DESCRIPTION	CATALOG NO.	VOLTAGE	VA	LAMP TYPE	MOUNTING	MANUFACTURER
A	INDUSTRIAL FLUORESCENT SUITABLE FOR CLASS 1 DIV 2 LOCATION	380-T8-2L-4-120	120	64	32W T8	CEILING	LDPI LIGHTING
B	WALLPACK, COMPACT FLUORESCENT	TWS-32TRT-120-LPI	120	35	32W TRT	WALL	LITHONIA

CONDUIT AND WIRE SCHEDULE

NUMBER	FROM	TO	SIZE	POWER	CONTROL	SIGNAL	COMMENTS
	POWER						
P-SL	UTILITY TRANSFORMER	METER ENCLOSURE	3"				CONDUIT ONLY. CONDUCTORS BY UTILITY
P-SE	METER ENCLOSURE	SERVICE DISCONNECT	2"	4 #2, #2G			
P-GND	SERVICE DISCONNECT	GROUND ROD BOX	3/4"	1 #4			BARE COPPER
P-CP	SERVICE DISCONNECT	CONTROL PANEL	2"	4 #2, #2G			
P-HC	SERVICE DISCONNECT	STUB UP LOCATION FOR FUTURE USE	2"				CONDUIT ONLY. PROVIDE PULL ROPE
	MOTOR CONTROL						
P-1	CONTROL PANEL	BLOWER E-410	3/4"	3 #12, #12G	2 #14		
P-2	CONTROL PANEL	PUMP P-200	3/4"	3 #12, #12G	2 #14		
P-MP	CONTROL PANEL	MINI POWER ZONE	3/4"	2 #12, #12G			
	LIGHTING AND HEAT TRACE						
P-LGT	MINI POWERZONE	LIGHTING	3/4"	2 #12, #12G			
P-RCP	MINI POWERZONE	RECEPTACLES	3/4"	2 #12, #12G			
P-S	MINI POWERZONE	SEPARATOR HEAT TRACING	3/4"	2 #12, #12G			8W/FT, SELF-REGULATING
P-T	MINI POWERZONE	TANK HEAT TRACING	3/4"	2 #12, #12G			8W/FT, SELF-REGULATING
P-G	MINI POWERZONE	GAC UNIT HEAT TRACING	3/4"	3 #12, #12G			8W/FT, SELF-REGULATING
	INSTRUMENTATION						
C-T	CONTROL PANEL	LSH-210 AND LSHH-210	3/4"		4 #14		
C-S	CONTROL PANEL	LSL-200, LSH-200, AND LSHH-200	3/4"		6 #14		
C-V	CONTROL PANEL	VACUUM RELIEF SWITCH	3/4"		2 #14		
TEL	CONTROL PANEL	TELEPHONE CONNECTION	2"				CONDUIT ONLY. CABLE BY UTILITY



GROUND ROD & BOX INSTALLATION (1 / E-2)
NOT TO SCALE



NOTES: 1. ALL DIMENSIONS ARE MINIMUMS.

TYPICAL UNDERGROUND CONDUIT SECTION (2 / E-2)
NOT TO SCALE

RECORD DRAWING
These Record Drawings have been prepared based on information provided by the contractor and others. Kennedy/Jenks Consultants has not verified the accuracy or completeness of information provided to them and does not warrant the accuracy or completeness of these Record Drawings. Users of these Record Drawings assume all risk of loss resulting from their use.

NO.	REVISION	DATE	BY
-	RECORD DRAWING	10/12	KJ

SCALES
0 1"
0 25mm
IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

DESIGNED PAR
DRAWN WL
CHECKED RCG

WASHINGTON STATE DEPARTMENT OF ECOLOGY

FRANK WEAR SOIL VAPOR EXTRACTION SYSTEM
YAKIMA, WASHINGTON

Kennedy/Jenks Consultants
FEDERAL WAY, WA

ELECTRICAL DETAILS AND SCHEDULES

FILE NAME 1196016_E03
JOB NO. 1196016*00
DATE JAN. 2012
SHEET OF **E-3**

P:\CAD\1111196016.00 Washington DEQ\1196016_E03.dwg
BRYANH 10/29/2012 8:57 AM

INSTRUMENT SYMBOL IDENTIFIERS

J-1: IDENTIFICATION LETTERS (SEE TABLE BELOW)
J-2: LOOP NUMBER
J-3: VENDOR DESIGNATOR (NOTE 3)
J-4: FUNCTION BLOCK (SEE TABLE BELOW)
J-5: PANEL NUMBER
J-6: HANDSWITCH DESIGNATOR (SEE BELOW)

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE			CONTROL	CLOSED
D	DENSITY	DIFFERENTIAL	DAMPER		
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOISTURE	MOMENTARY			MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY	SWITCH		
T	TEMPERATURE			TRANSMIT	
U	MULTI VARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, OR LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE, PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

GENERAL INSTRUMENT OR FUNCTION SYMBOLS	FIELD MOUNTED	PRIMARY LOCATION ACCESSIBLE TO OPERATOR	AUXILIARY LOCATION ACCESSIBLE TO OPERATOR	NORMALLY INACCESSIBLE OR BEHIND THE PANEL
DISCRETE INSTRUMENTS	X / X	X / X	X / X	X / X
SHARED DISPLAY, SHARED CONTROL	X / X	X / X	X / X	X / X
COMPUTER FUNCTION	X / X	X / X	X / X	X / X
PROGRAMMABLE LOGIC CONTROL	X / X	X / X	X / X	X / X

J-4 FUNCTION BLOCK DESIGNATORS

- Σ SUMMING
- △ DIFFERENCE
- ∫ INTEGRAL
- d%/dt DERIVATIVE
- × MULTIPLYING
- ÷ DIVIDING
- */* CONVERT:
- n√ ROOT EXTRACTION
- √ SQUARE ROOT
- x^n EXPONENTIAL
- > HIGH SELECTING
- < LOW SELECTING
- ± BIAS
- F(X) NONLINEAR OR UNSPECIFIED FUNCTION

* E - VOLTAGE
I - CURRENT
P - PNEUMATIC
A - ANALOG
B - BINARY
H - HYDRAULIC
O - ELECTROMAGNETIC, SONIC
R - RESISTANCE (ELECT)
D - DIGITAL

J-6 HANDSWITCH DESIGNATORS

HOA	HAND-OFF-AUTO	LR	LOCAL-REMOTE
HOR	HAND-OFF-REMOTE	OC	OPEN-CLOSE
F-R	FORWARD-REVERSE	OCA	OPEN-CLOSE-AUTO
1-0	ON-OFF	A/M	AUTO-MANUAL

INSTRUMENT SERVICES

- AS — INSTRUMENT AIR SUPPLY (NOTE 4)
- ES — 120 VAC ELECTRICAL SERVICE (DIFFERENT VOLTAGES ARE SPECIFICALLY NOTED)

PLC INPUT/OUTPUT

- DISCRETE INPUT
- ANALOG INPUT
- DISCRETE OUTPUT
- ANALOG OUTPUT

FLOW PRIMARY ELEMENTS

- ORIFICE PLATE
- SINGLE PORT PITOT TUBE OR PITOT-VENTURI TUBE
- VENTURI TUBE
- AVERAGING PITOT TUBE
- FLUME
- WEIR
- TURBINE OR PROPELLER-TYPE PRIMARY ELEMENT
- THERMAL MASS FLOWMETER
- POSITIVE DISPLACEMENT TYPE FLOW TOTALIZING INDICATOR
- VORTEX SENSOR
- TARGET TYPE SENSOR
- FLOW NOZZLE
- M MAGNETIC FLOWMETER
- SONIC FLOWMETER
- X / X ROTAMETER
- X / X ROTAMETER WITH INTEGRAL VALVE

LINES

- MAIN PROCESS
- SECONDARY PROCESS
- I-2 / A — REFERENCES LEAVING SHEET; LINE CONTINUATION; TO DRAWING REFERENCE
- A / I-3 — REFERENCES ENTERING SHEET; FROM DRAWING REFERENCE; LINE CONTINUATION
- 24" BW — PIPE SYSTEM; PIPE SIZE IN INCHES
- ELECTRICAL SIGNAL
- SOFTWARE OR DATALINK
- PNEUMATIC
- HYDRAULIC
- CAPILLARY TUBE
- ELECTROMAGNETIC OR SONIC (GUIDED)

MECHANICAL — OR — ELECTRICAL
CONNECTED
NOT CONNECTED

VALVES

- GATE VALVE
- GLOBE VALVE
- PLUG VALVE
- CHECK VALVE
- PINCH VALVE
- DIAPHRAGM VALVE
- BUTTERFLY VALVE
- BALL VALVE
- NEEDLE VALVE
- PLUG (COCK)
- PRESSURE REDUCING REGULATING VALVE, SELF-CONTAINED
- BACK PRESSURE REGULATING VALVE, SELF-CONTAINED
- PRESSURE REDUCING REGULATOR WITH EXTERNAL PRESSURE TAP
- 3-WAY VALVE
- 4-WAY VALVE
- ANGLE VALVE
- PRESSURE RELIEF VALVE
- * FC = FAIL CLOSED FO = FAIL OPEN LC = LOCKED CLOSED LO = LOCKED OPEN
- CLOSED DURING NORMAL OPERATION
- SHADING INDICATES PORT TO BE CLOSED DURING NORMAL OPERATION. DOT INDICATES PORT TO BE CLOSED DURING ALTERNATE OPERATION.

VALVE OPERATORS

- DIAPHRAGM
- DIAPHRAGM PRESSURE BALANCED
- M MOTOR
- CYLINDER OPERATOR
- S SOLENOID
- SV SOLENOID VALVE

TYPICAL CONNECTION

- X / X IN-LINE DEVICE
- X / X DIRECT CONNECTION TO PROCESS
- X / X TEMPERATURE ELEMENT WITH WELL
- X / X RADIATION OR SONIC SENSING
- X / X FILLED SYSTEM, DIAPHRAGM SEAL CONNECTION

MISCELLANEOUS

- FLANGE
- UNION
- Y STRAINER
- FLOW STRAIGHTENING VANE
- TEE
- SCREWED CAP
- WELDED CAP
- BLIND FLANGE
- REDUCER
- HB HOSE BIBB CONNECTION
- EXPANSION JOINT
- FLEXIBLE COUPLING
- FLANGED COUPLING ADAPTER
- SLUICE GATE OR SLIDE GATE
- DRAIN
- DIAPHRAGM SEAL
- RUPTURE DISK, PRESSURE
- RUPTURE DISK, VACUUM
- P PURGE
- THERMOMETER WELL
- CALIBRATION CYLINDER
- PULSATION DAMPER
- AIR RELIEF VALVE
- AIR RELEASE
- LEVEL PROBE
- CHEMICAL DIFFUSER
- STATIC MIXER
- EDUCTOR/INJECTOR
- INTERLOCK. NUMBER IS THE CROSS REFERENCE TO A SPECIFIC ELEMENTARY DIAGRAM OR TO A SPECIFIC CONTROL STRATEGY DESCRIBED IN THE SPECS
- * * AV - AIR VALVE F - FILTER T - TRAP FH - FIRE HYDRANT
- WATER LINE
- GRAVITY FLOW

EQUIPMENT

- M MIXER
- M VERTICAL TURBINE PUMP
- M SUBMERSIBLE PUMP
- PUMP BLOWER
- PUMP
- METERING PUMP
- PUMP PROGRESSIVE CAVITY
- ROTARY PUMP
- PERISTALTIC PUMP

NOTES:

1. THIS IS A GENERALIZED LEGEND SHEET.
2. SEE ALSO ISA S5.1, S5.3 AND S7.3.
3. INSTRUMENTS MARKED WITH AN ASTERISK ARE FURNISHED WITH THE EQUIPMENT.
4. REFER TO ISA RP7.7 FOR INSTRUMENT AIR QUALITY STANDARDS.

NO.	REVISION	DATE	BY
-	RECORD DRAWING	10/12	KJ

SCALES
0 — 1"
0 — 25mm
IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

DESIGNED JMF
DRAWN BBH
CHECKED RCG

WASHINGTON STATE DEPARTMENT OF ECOLOGY
FRANK WEAR SOIL VAPOR EXTRACTION SYSTEM
YAKIMA, WASHINGTON
Kennedy/Jenks Consultants
FEDERAL WAY, WA

PROCESS AND INSTRUMENTATION DIAGRAM LEGEND

FILE NAME 1196016_P01
JOB NO. 1196016*00
DATE JAN. 2012
SHEET OF **P-1**

P:\CAD\111\1196016.00 Washington DEQ\1196016-P01.dwg
BRYANH 10/29/2012 8:58 AM

AUTO DIALER

LOCAL CONTROL PANEL

LAHH 200

LC 200 H,L

HOA HS 200 RUNNING YI 200

LAHH 210 LAH 210

PAL 410

HOA HS 410 RUNNING YI 410

1 PROVIDE EXTRA 4" MPT PVC-1 PLUG FOR FUTURE USE NOT INSTALLED.

2 PROVIDE 4" FLEX HOSE WITH LENGTHS TO SWITCH BETWEEN LEAD AND LAG GAC VESSELS WITHOUT MOVING VESSELS. HOSE LENGTH MUST BE ADEQUATE TO AVOID UNDO-STRESS ON CAMLOCK CONNECTIONS.

3 CONTRACTOR PROVIDE AND INSTALL HEAT TRACE AND INSULATION.

CAMLOCK CONNECTIONS (TYP)

4" FLEX HOSE

GAC VESSEL NO.1

PI 310

3/4" PCV-1 SAMPLE PORT

4" WSP

3/4" WELD-O-LET OR TEE

4" FLEX HOSE

GAC VESSEL NO.2

PI 311

3/4" PCV-1 SAMPLE PORT

4" FLEX HOSE

4" WSP

3/4" WELD-O-LET OR TEE

3" BUTTERFLY/FILTER/SILENCER ASSEMBLY

SILENCER

RAIN GUARD

BUILDING ENCLOSURE

6" PVC-1

PI 200

6" PVC-1

6" PVC-1

PI 320

3/4" PCV-1 SAMPLE PORT

VENDOR SUPPLIED

BLOWER FILTER

3" WSP

VACUUM RELIEF VALVE

FE 410

PSL 410

PI 410

3" PVC-1

3" WSP

3" WSP

3" PVC-1 (DISCHARGE STACK)

TI 410

BLOWER E-410

TI 420

VENDOR SUPPLIED

PI 110

PI 120

PI 130

PI 140

PI 150

5 DIA

3/4" PCV-1 SAMPLE PORT (TYP)

PI 111

PI 121

10 DIA

2" PCV-1 TEE AND THREADED PLUG

PI 131

PI 141

PI 151

LSHH 200

LSH 200

LSL 200

DRAIN

MOISTURE SEPARATOR

3/4" PVC-1

TRANSFER PUMP P-200

3/4" PVC-1

LSHH 210

LSH 210

2"

3/4" GARDEN HOSE CONNECTION

165 GALLON HDPE TANK

2" PVC-1 (SCHD 80) (LOWER ZONE)

2" PVC-1 (SCHD 80) (UPPER ZONE)

2" PVC-1 (SCHD 40)

SVE-1

SVE-2

SVE-3

SVE-4

SVE-5

RECORD DRAWING

These Record Drawings have been prepared based on information provided by the contractor and others. Kennedy/Jenks Consultants has not verified the accuracy or completeness of information provided to them and does not warrant the accuracy or completeness of these Record Drawings. Users of these Record Drawings assume all risk of loss resulting from their use.

NO.	REVISION	DATE	BY
-	RECORD DRAWING	10/12	KJ

SCALES

0 1"

0 25mm

IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

DESIGNED JMF

DRAWN BBH

CHECKED RCG

WASHINGTON STATE DEPARTMENT OF ECOLOGY

FRANK WEAR SOIL VAPOR EXTRACTION SYSTEM
YAKIMA, WASHINGTON

Kennedy/Jenks Consultants
FEDERAL WAY, WA

PROCESS AND INSTRUMENTATION DIAGRAM

FILE NAME 1196016_P02

JOB NO. 1196016*00

DATE JAN. 2012

SHEET P-2 OF

BRYANH 10/29/2012 9:00 AM

P:\CAD\1111196016.00 Washington DEQ\1196016-P02.dwg

Appendix C

Boring and Well Construction Logs

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: Gravel parking lot, approximately 15' NE of manhole	**Well Name:** SVE-1
DRILLING COMPANY: Major Drilling	DRILLER: Kaleb Charters — **Project Name:** WA-DOE - Frank Wear
DRILLING METHOD(S): Sonic	DRILL BIT(S) SIZE: 8" / 6" — **Project Number:** 1196016*07
ISOLATION CASING: N/A	FROM N/A TO N/A FT.
BLANK CASING: 4" Schedule 40 PVC	FROM 0 / 13 TO 8 / 15 FT.
SLOTTED CASING: 4" Schedule 40 PVC; 20-slot	FROM 8 / 15 TO 13 / 20 FT.
SIZE AND TYPE OF FILTER PACK: 10/20 and 20/40 Silica Sand	FROM 7 TO 20.4 FT.
SEAL: 3/8" Bentonite Chips	FROM 3.5 TO 7 FT.
GROUT: Cement	FROM 0 TO 3.5 FT.

ELEVATION AND DATUM: bgs	TOTAL DEPTH: 20.0 ft. bgs
DATE STARTED: 3/28/12	DATE COMPLETED: 3/28/12
INITIAL WATER DEPTH (FT): N/A	
LOGGED BY: J. Sawdey	
SAMPLING METHODS: Split Spoon	WELL COMPLETION: ■ SURFACE HOUSING ☐ STAND PIPE _____ FT.

SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	WELL CONSTRUCTION	PID (ppm)	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
			5			0.0			**Well-graded GRAVEL with sand** Gray, gray-brown, brown, sandy gravel with cobbles and boulders, up to 4" cobbles in cuttings, medium to coarse sand, completely unconsolidated, very dry.
			10			0.0		GW	Same as above
				Top 20/40 Silica Sand @ 13'					
			15	Bottom 20/40 Silica Sand @ 15'		0.1			Traces of clay (<5%) Traces of silt (<5%)
			20			0.1			As above, with no clay and more silt (10%)

NOTES

1. bgs = below ground surface
2. PID (ppm) = photoionization detector as recorded in parts per million
3. No split spoons collected from this well / lithology determined by boring cuttings
4. Sonic drilling advanced to 20.5' bgs. 10/20 Silica Sand used to place bottom of well at 20' bgs.

KJ PNW SVE_WELLS.GPJ KJ PNW.GDT 12/7/12

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: Gravel parking lot, N of SVE-5 and SVE-4, adjacent to fence	**Well Name:** SVE-2
DRILLING COMPANY: Major Drilling	DRILLER: Kaleb Charters — **Project Name:** WA-DOE - Frank Wear
DRILLING METHOD(S): Sonic	DRILL BIT(S) SIZE: 8" / 6" — **Project Number:** 1196016*07
ISOLATION CASING: N/A	FROM N/A TO N/A FT.
BLANK CASING: 4" Schedule 40 PVC	FROM 0 TO 12.75 FT. — FROM 7.75 TO 14.75 FT.
SLOTTED CASING: 4" Schedule 40 PVC; 20-slot	FROM 7.75 TO 14.75 FT. — FROM 12.75 TO 19.75 FT.
SIZE AND TYPE OF FILTER PACK: 10/20 and 20/40 Silica Sand	FROM 7 TO 19.75 FT.
SEAL: 3/8" Bentonite Chips	FROM 3.5 TO 7 FT.
GROUT: Cement	FROM 0 TO 3.5 FT.

ELEVATION AND DATUM: bgs	TOTAL DEPTH: 19.8 ft. bgs
DATE STARTED: 3/27/12	DATE COMPLETED: 3/28/12
INITIAL WATER DEPTH (FT): N/A	
LOGGED BY: J. Sawdey	
SAMPLING METHODS: Split Spoon	WELL COMPLETION: ■ SURFACE HOUSING ☐ STAND PIPE _____ FT.

SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	WELL CONSTRUCTION	PID (ppm)	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
			5			0.0			**Well-graded GRAVEL with sand** Predominately gray to brownish gray, brown in part, very sandy, up to 50% sand in places, shattered 4" boulder and cobble bits, up to 4" rounded cobbles, very well graded, sands ranging from very fine to coarse, completely unconsolidated, very dry, slightly dampening with depth
			10		Top 20/40 Silica Sand @ 12.75'	0.0		GW	Same as above, with less sand and finer gravels (averaging < 1" diameters)
SS	0.125	50 for 1"	15		Bottom 20/40 Silica Sand @ 14.75'	0.0			Same as above, variable sand amounts, 0.6ppm PID reading from cuttings barrell
						0.0			Same as above

NOTES

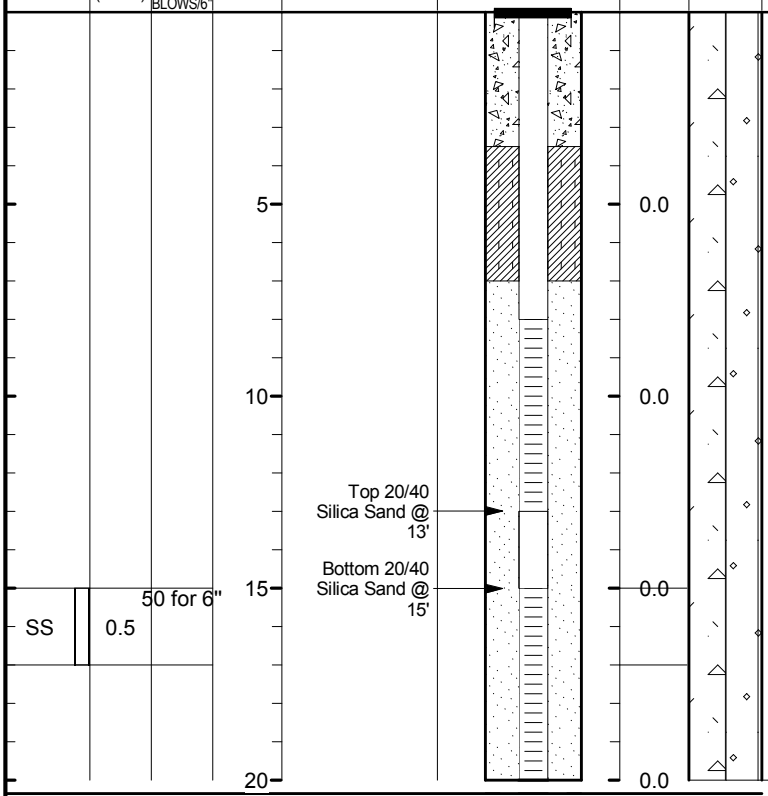
1. bgs = below ground surface
2. PID (ppm) = photoionization detector as recorded in parts per million
3. Sonic drilling advanced to 19.75' bgs. Split spoon sample collected from 19.75' to 21.75' bgs

KJ PNW SVE_WELLS.GPJ KJ PNW.GDT 12/7/12

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: Adjacent to S side of childcare building		**Well Name**	SVE-3
DRILLING COMPANY: Major Drilling	DRILLER: Kaleb Charters	**Project Name**	WA-DOE - Frank Wear
DRILLING METHOD(S): Sonic	DRILL BIT(S) SIZE: 8" / 6"	**Project Number**	1196016*07
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 20.0 ft. bgs
BLANK CASING: 4" Schedule 40 PVC	FROM 0 / 13 TO 8 / 15 FT.	DATE STARTED: 3/27/12	DATE COMPLETED: 3/27/12
SLOTTED CASING: 4" Schedule 40 PVC; 20-slot	FROM 8 / 15 TO 13 / 20 FT.	INITIAL WATER DEPTH (FT): N/A	
SIZE AND TYPE OF FILTER PACK: 10/20 and 20/40 Silica Sand	FROM 7 TO 20.33 FT.	LOGGED BY: J. Sawdey	
SEAL: 3/8" Bentonite Chips	FROM 3.5 TO 7 FT.	SAMPLING METHODS: Split Spoon	WELL COMPLETION: ■ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: Cement	FROM 0 TO 3.5 FT.		



Well-graded GRAVEL with silt and sand
Predominately gray to gray-brown, dark gray in part, predominately gravel with up to 20%, and up to 20% sand, with shattered boulder material, and large rounded cobbles up to 6", very well graded, completely unconsolidated, very dry

Same as above, less silt (<5%), more sand (up to 40%)

Same as above

Same as above, damp in places, color change to predominately brown

NOTES
1. bgs = below ground surface
2. PID (ppm) = photoionization detector as recorded in parts per million
3. Sonic drilling advanced to 20.4' bgs. Split spoon sample collected from 20.4' to 22.4' bgs. 10/20 Silica Sand used to place bottom of well at 20' bgs.

KJ PNW SVE_WELLS.GPJ KJ PNW.GDT 12/7/12

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: Adjacent to N side of childcare building	**Well Name:** SVE-4
DRILLING COMPANY: Major Drilling	DRILLER: Kaleb Charters — **Project Name:** WA-DOE - Frank Wear
DRILLING METHOD(S): Sonic	DRILL BIT(S) SIZE: 8" / 6" — **Project Number:** 1196016*07
ISOLATION CASING: N/A	FROM N/A TO N/A FT.
BLANK CASING: 4" Schedule 40 PVC	FROM 0 / 13 TO 8 / 15 FT.
SLOTTED CASING: 4" Schedule 40 PVC; 20-slot	FROM 8 / 15 TO 13 / 20 FT.
SIZE AND TYPE OF FILTER PACK: 10/20 and 20/40 Silica Sand	FROM 7 TO 20.0 FT.
SEAL: 3/8" Bentonite Chips	FROM 3.5 TO 7 FT.
GROUT: Cement	FROM 0 TO 3.5 FT.

ELEVATION AND DATUM: bgs	TOTAL DEPTH: 20.0 ft. bgs
DATE STARTED: 3/26/12	DATE COMPLETED: 3/27/12
INITIAL WATER DEPTH (FT): N/A	
LOGGED BY: J. Sawdey	
SAMPLING METHODS: Split Spoon	WELL COMPLETION: ■ SURFACE HOUSING ☐ STAND PIPE _____ FT.

SAMPLES TYPE	RECOV. (FEET)	PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	WELL CONSTRUCTION	PID (ppm)	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
									Well-graded GRAVEL with silt and sand Light gray, light brown, gray-brown, gravel with ~20% silt and ~20% predominately very fine to fine sand, with cobbles up to 4" and large shattered boulders, very well graded, completely unconsolidated, dry
SS	1	26 50 for 5"	5			0.0			
								GW/	
SS	0.5	50 for 6"	10			0.0		GM	Gravel as above, less silts and very fine sands (<5%), more medium to coarse sands (~40%), well graded, dry
				Top 20/40 Silica Sand @ 13'					
			15	Bottom 20/40 Silica Sand @ 15'		0.0			Same as above
SS	1	41 50 for 3"							0.2 ppm detected with PID above cuttings in barell
			20			0.1			Same as above with trace of a clay matrix, damp

NOTES

1. bgs = below ground surface
2. PID (ppm) = photoionization detector as recorded in parts per million
3. Sonic drilling advanced to 20' bgs. Split spoon sample collected from 20' to 22' bgs.

KJ PNW SVE_WELLS.GPJ KJ PNW.GDT 12/7/12

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: Adjacent to N side of childcare building	**Well Name:** SVE-5
DRILLING COMPANY: Major Drilling	DRILLER: Kaleb Charters — **Project Name:** WA-DOE - Frank Wear
DRILLING METHOD(S): Sonic	DRILL BIT(S) SIZE: 8" / 6" — **Project Number:** 1196016*07
ISOLATION CASING: N/A	FROM N/A TO N/A FT.
BLANK CASING: 4" Schedule 40 PVC	FROM 0 / 13 TO 8 / 15 FT.
SLOTTED CASING: 4" Schedule 40 PVC; 20-slot	FROM 8 / 15 TO 13 / 20 FT.
SIZE AND TYPE OF FILTER PACK: 10/20 and 20/40 Silica Sand	FROM 7 TO 20.5 FT.
SEAL: 3/8" Bentonite Chips	FROM 3.5 TO 7 FT.
GROUT: Cement	FROM 0 TO 3.5 FT.

ELEVATION AND DATUM: bgs	TOTAL DEPTH: 20.0 ft. bgs
DATE STARTED: 3/26/12	DATE COMPLETED: 3/26/12
INITIAL WATER DEPTH (FT): N/A	
LOGGED BY: J. Sawdey	
SAMPLING METHODS: Split Spoon	WELL COMPLETION: ■ SURFACE HOUSING ☐ STAND PIPE _____ FT.

SAMPLES TYPE	RECOV. (FEET)	PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	WELL CONSTRUCTION	PID (ppm)	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
SS	1.5	4 8 11 50 for 2"	5			0.0		SM	**Silty SAND** Dark brown, motled brown and gray, silty sand, somewhat clayey, some gravel, dry
SS	1	34 50 for 4"	10			0.1			**Well-graded GRAVEL with silt and sand** Gray, brown, dark gray, gravel with <5% silt and ~25% fine to coarse sand, large (upto 4") rounded cobbles, damp-dry
SS	0.5	26 50 for 5.5"	15	Top 20/40 Silica Sand @ 13' Bottome 20/40 Silica Sand @ 15'		0.0		GW/ GM	Same as above, more silt (~25%) and less sand (~10%) content, large broken cobbles up to 6", dry
SS	0.1	15 50 for 5"	20			0.1			Same as above, more silty (~40-50%), with traces of sand (<5%)

NOTES

1. bgs = below ground surface
2. PID (ppm) = photoionization detector as recorded in parts per million
3. Sonic drilling advanced to 20.5' bgs. Split spoon sample collected from 20.5' to 22.5' bgs. 10/20 Silica Sand used to place bottom of well at 20' bgs.

KJ PNW SVE_WELLS.GPJ KJ PNW.GDT 12/7/12

F-40.1
(6-87) (3-88) (8-90)

Appendix D

Site Photographs

Photo 1 – Anderson Environmental Contractors (AEC) mobilizing to the site and securing with fence. 4/23/12

Photo 2 - Excavating around SVE wells. 4/23/12

Photo 3 - Excavating SVE well trench from SVE-5. 4/24/12

Photo 4 - Stockpiled spoils on lining. 4/24/12

Photo 5 - Excavation by hand to SVE-3 on the southern side of the childcare center building. 4/25/12

Photo 6 - Stockpiled spoils covered and weighed down. 4/25/12

Photo 7 – Childcare center courtyard fenced-off prior to excavation. 4/26/12

Photo 8 - Excavating in childcare center courtyard for SVE-3. 4/26/12

Photo 9 - Trench approximately 2 feet in depth with temporary shoring. 4/26/12

Photo 10 - Security fencing around SVE-3. 4/27/12

Photo 11 - Preparing pipe connections for SVE-3 well configuration. 4/27/12

Photo 12 - Trenching to SVE-4 and SVE-5 looking east. 4/28/12

Photo 13 - Backfilling and compacting trench in childcare center courtyard. 4/28/12

Photo 14 - Completed trench to SVE-3 with additional 4-inch PVC from wood fence and cored through concrete wall on south. 4/29/12

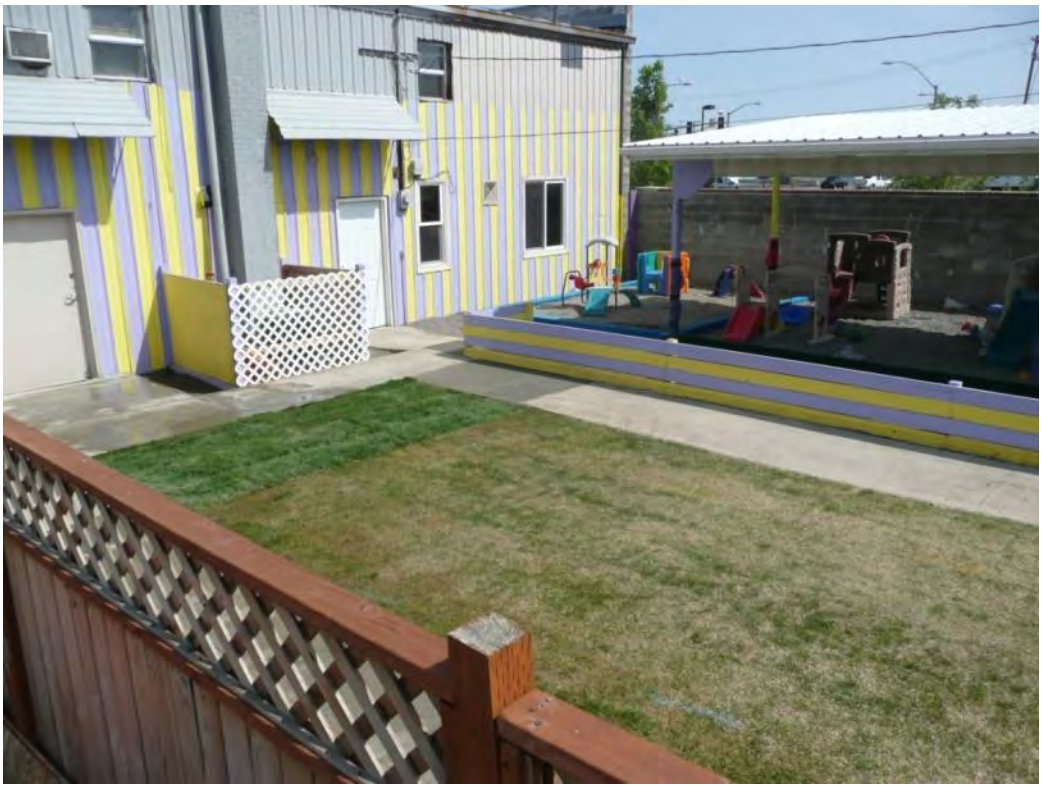


Photo 15 - Completed courtyard. 4/29/12

Photo 16 - Excavation for trenches to SVE-2, SVE-3, SVE-4, and SVE-5 completed. Spoils on lined and covered stockpiles. Imported beddings, sand and 1-1/4-inch backfill material onsite. 4/30/12

Photo 17 - Schedule 80 PVC 2-inch piping to SVE wells. Pipes on pressure test. 4/30/12

Photo 18 - Measuring placement of 2-inch drop pipe for lower zone SVE operation. 5/01/12

Photo 19 - SVE well pipe connection showing the lower zone 2-inch piping above and the upper zone 4-inch annular space piping below. 5/01/12

Photo 20 - Tubing to measure pressure and/or vapors from upper zone 4-inch annular space. 5/01/12

Photo 21 - Bedding piping within the trench. 5/01/12

Photo 22 - SVE-1 trench backfilled and compacted. 5/02/12

Photo 23 - Pressure testing of all upper and lower zone SVE well piping. 5/02/12

Photo 24 - Excavating for utilities: Electrical and communications. 5/03/12

Photo 25 - Preparing well for completion with concrete monument. 5/03/12

Photo 26 - Utility trench with 4-inch Schedule 40 PVC spare for future groundwater recirculation lines. 5/04/12

Photo 27 - Secured construction site. 5/04/12

Photo 28 - Excavating for SVE utility building foundation. 5/07/12

Photo 29 - Foundation with 12-inch crushed base course and formwork for concrete pour. 5/08/12

Photo 30 - Reinforced steel, #6 bar on 1 foot centers for SVE utility building foundation. 5/08/12

Photo 31 - Pouring concrete slab for SVE utility building foundation. 5/08/12

Photo 32 - Slump test, entrained air, and concrete test cylinders. 5/08/12

Photo 33 – Finishing for SVE utility building foundation. 5/08/12

Photo 34 - Removing forms and compaction around SVE utility building foundation. 5/14/12

Photo 35 - Preparing piping for manifold/SVE utility building entrance. 5/15/12

Photo 36 - Dowelled and epoxied #4 bar for GAC unit equipment slab. 5/15/12

Photo 37 - Preparing for SVE utility building walls. 5/16/12

Photo 38 - SVE utility building walls. 5/17/12

Photo 39 – SVE utility building with vapor barrier. 5/18/12

Photo 40 - SVE 2-inch piping spaced for utility building entrance and manifold. 5/22/12

Photo 41 - AEC collecting confirmation samples of import material trench fill for chemical analysis. 5/22/12

Photo 42 - Forming for GAC unit equipment slab. 5/23/12

Photo 43 - Constructing SVE utility building roof. 5/30/12

Photo 44 - Constructing utility building SVE manifold. 5/30/12

Photo 45 - Z-flashing on utility building and caulking. 5/31/12

Photo 46 - SVE manifold and moisture separator. 5/31/12

Photo 47 – GAC unit equipment pad poured. 5/31/12

Photo 48 - Backfill material removed due to results of chemical analysis. 5/22/12

Photo 49 - Replacing removed contaminated 1-1/4-inch base course with clean 5/8-inch structural fill. 6/05/12

Photo 50 - Collecting additional confirmation samples for characterization of backfill material. 6/05/12

Photo 51 - Collecting additional confirmation samples for characterization of backfill material. 6/05/12

Photo 52 - Preparing to cross alleyway with utility trench. 6/06/12

Photo 53 - Equipment and piping extent constructed inside SVE utility building. 6/07/12

Photo 54 – GAC cans to be placed on concrete pad outside of utility building. Bedding sand and 5/8-inch crushed stone top course or structural fill. 6/08/12

Photo 55 – GAC units position on concrete pad and connected. 6/14/12

Photo 56 – Box extended to cover piping transition from above ground to below and protected with insulation inside. 6/14/12

Photo 57 – Spare conduit stubbed up to connect electrical to service disconnect panel. 6/15/12

Photo 58 – Meter box, service panel, and SVE control panel. 6/15/12

Photo 59 - Playground trench re-excavated to remove impacted 1-1/4-inch CSBC. Chemical analysis detected polycyclic aromatic hydrocarbons (PAHs) in previous confirmation samples. 6/15/12

Photo 60 – Power company installing new transformers for service to SVE system. 6/21/12

Photo 61 - Fence installed around SVE utility building. 6/21/12

Photo 62 – Concrete entrance pad poured. 6/21/12

Photo 63 – Installing subslab monitoring point SS-4 inside the childcare center. 6/22/12

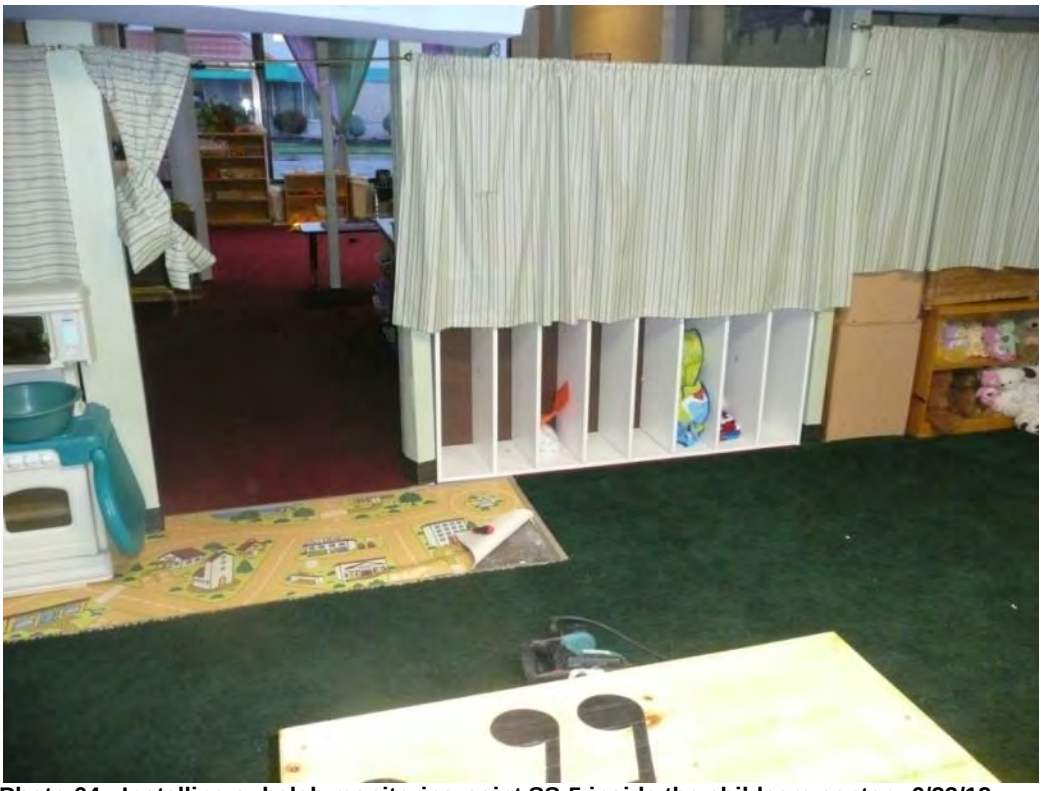


Photo 64 - Installing subslab monitoring point SS-5 inside the childcare center. 6/22/12

Photo 65 - View down SS monitoring point to soil under childcare center foundation. 6/22/12

Photo 66 - Re-excavating second half of playground to remove impacted 1-1/4-inch import to clean 5/8-inch material on northern side of fence. Chemical analysis detected PAHs in previous confirmation samples. Replacing with clean 5/8-inch CSTC. 6/26/12

Photo 67 - Insulation and foilback inside SVE utility building. 6/27/12

Photo 68 - Water in discharge tank after testing pump and floats on Vapor Liquid Separator (VLS). Caution tape and "HOT" labels on piping. 7/3/12

Photo 69 - Completed labeling and testing of extraction manifold. 7/12/12

Photo 70 - VLS and double bubble foil insulation. 7/12/12

Photo 71 - SVE blower, inlet filter, and discharge temperature gauge. 7/12/12

Photo 72 – Control panel located on exterior of SVE utility building. 7/12/12

Photo 73 - Transformer and air dilution valve on exterior of SVE utility building. 7/12/12

Photo 74 – GAC cans with insulation over heat trace. 7/12/12

Appendix E

Construction Records

PLSA ENGINEERING & SURVEYING
1120 W LINCOLN AVE
YAKIMA, WASHINGTON 98902

(509) 575-6990
FAX (509) 575-6993

LETTER OF TRANSMITTAL

5122

DATE 5/9/12	JOB NO. 12080
ATTENTION	
RE: 106 S. 3RD AVE - YAKIMA	

TO ANDERSON ENVIRONMENTAL
705 COLORADO ST.
KELSO WA 98626

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1			NUCLEAR FIELD DENSITY DATA
1			MOISTURE/DENSITY RELATION

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☒ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS _____

COPY TO _____

SIGNED: _____

If enclosures are not as noted, kindly notify us at once.

PLSA Engineering and Surveying
1120 West Lincoln Ave.
Yakima, WA 98902
(509) 575-6990

Project: ANDERSON ENVIRONMENTAL
Job #: 12040
Date: 5/2/12
Performed By: JC

Nuclear Relative Density Test Data

ASTM D2922

TRENCH BACKFILL

Test Number										
Location	NORTH OF SOUTH SYSTEM	EAST OF WEST SYSTEM								
Elevation	TOP OF FILL									
Mode / Depth	P | 6"	—								
% Oversize										
Soil Description	CRUSHED ROCK →									
Wet Density	136.7	135.0								
Dry Density	128.2	127.4								
% Moisture	6.6	6.0								
Max Obt. Density	133.3									
Opt. Moisture %	6.0									
% Relative Comp.	96.2	95.6								

Standard Count

Density:	
Moisture:	

Remarks: BACKFILL OF FILTER SYSTEM TRENCHES. ¾" CRUSHED ROCK ADDED & COMPACTED IN SHALLOW LIFTS. COMPACTION REQUIREMENTS MET.

PLSA ENGINEERING
1120 West Lincoln
Yakima, WA 98902
(509) 575-6990

Technician: JC
Method: D1557
Sample Origin: CRUSHED ROCK

Max Density: 133.3
Opt. Moisture: 6.1

Project: ANDERSON ENVIRON
Job Number: 12.050
Date: 7/27/12

Notes: TRENCH BACKFILL

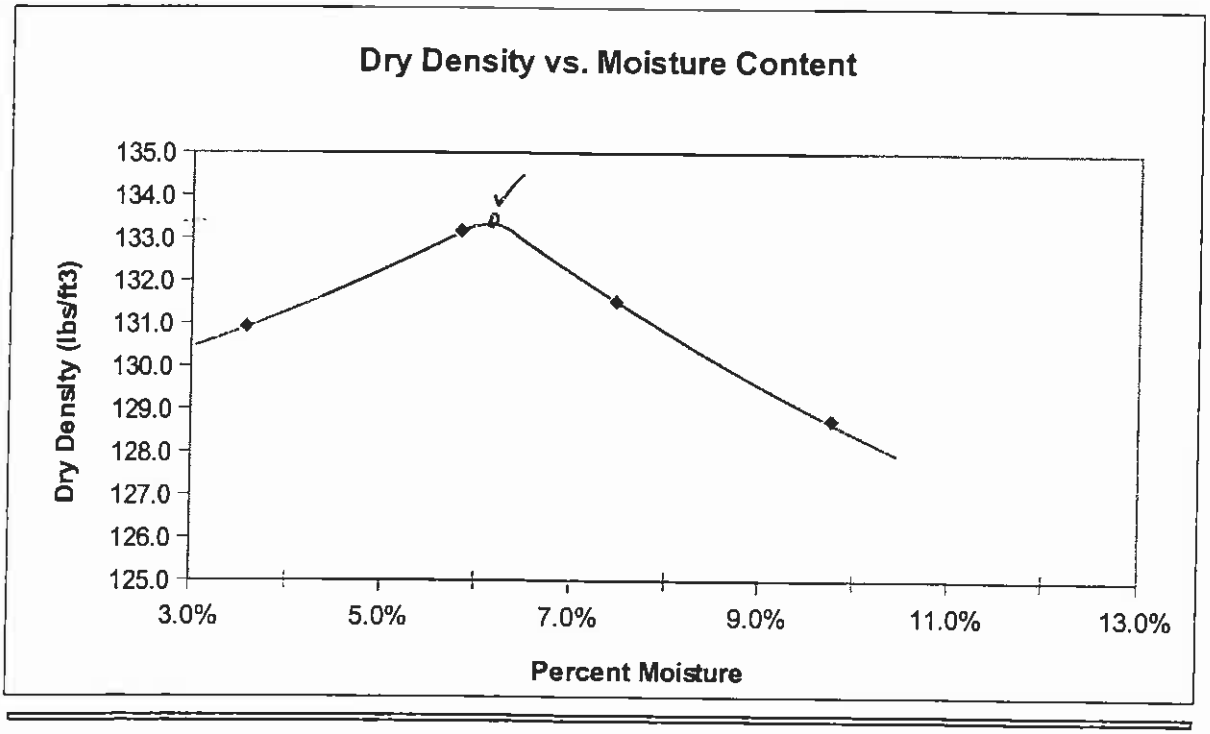
Moisture - Density Determination

Proctor

Est. Moisture Content	3	5	7	9	
Vol. Of Proctor Mold (ft^3)	.075	.075	.075	.075	
Wt. Wet Soil + Mold (lbs)	24.75	25.15	25.18	25.18	
Wt. Mold (lbs)	14.58	14.58	14.58	14.58	
Wt. Wet Soil (lbs)	10.17	10.57	10.60	10.60	
Wet Density (lbs/ft^3)	135.6	140.9	141.3	141.3	
Dry Density (lbs/ft^3)	130.9	133.2	131.5	128.8	

Moisture Determination

Can #	1	2	3	4	
Wt. Damp Soil + Tare(g)	505.3	506.5	504.0	505.7	
Wt. Dry Soil + Tare (g)	487.9	478.6	469.0	460.7	
Wt. Moisture (g)	17.4	27.9	35.0	45.0	
Wt. Tare (g)					
Wt. Dry Soil (g)	487.9	478.6	469.0	460.7	
% Moisure	3.6%	5.8%	7.5%	9.8%	



CENTRAL PRE-MIX CONCRETE CO.
FIELD CONCRETE TEST REPORT

PROJECT: Anderson Environmental — DATE: 05/09/12

CONTRACTOR: Anderson Environmental — TIME: 10:00

LOCATION OF PLACEMENT: 106 S. 3rd Ave — TRUCK NO: 43

TYPE OF PLACEMENT: chute — TICKET NO: 2454970

MIX DESCRIPTION: 315060

REQUIRED STRENGTH: 5000 PSI@ 28 DAYS — CEMENT- BRAND: Lafarge I-II — CONC. TEMP: 65

ADMIXTURES: **Zyla630** oz — ASH : Flyash - F — AIR TEMP:

AT60 oz — **Adva195** — WIND:

D-400 oz — PLANT: 24

	Total Load Batched		Moistures		Free Water			
AGGREGATE		**1 1/2**		**1 1/2**	0	**Conc. + Pot**	45.15
	10640	**3/4**	-0.5	**3/4**	-53	**Pot Wt.**	7.58
	2160	**3/8**	-0.5	**3/8**	-11	**Volume**	0.250
SAND	9440	**Sand**	2.5	**Sand**	230		

CEMENT	3912	**Total**
FLY ASH	688	165.9
WATER(GAL.X 8.33)	1676.0	
WATER ADDED		
ADMIXTURES	0.0	
AGGREGATE	28516.0	

LOAD SIZE: **7.0** YARDS

SLUMP	3.25		
% AIR	1.5		
UNIT WT.	150.3		TESTED AT JOBSITE **nm**
Yield FT3	27.11	Yield YD 3	7.03
W/C	0.40		TESTED AT PLANTSITE

CYLINDER NUMBER	AGE DAYS	DATE RECEIVED	DATE TESTED	END AREA	TOTAL LOAD	UNIT LOAD P.S.I.
464	7	5/10/2012	5/16/2012	12.57	66985	5330
465	28		6/6/2012			
466	28		6/6/2012			
467	28		6/6/2012			

REMARKS:

SIGNATURE: *nm*

Cure Temps. 62-76

Wasco County Landfill
WASCO COUNTY LANDFILL
The Dalles, OR 97058

** DUPLICATE TICKET **

000679
ANDERSON ENVIRONMENTAL
BRETT MACDONALD
705 COLORADO STREET
KELSO WA 98626

Site 40
Ticket 098065
Date In 05/17/12
Time In 14:16
Date Out 05/17/12
Time Out 14:31:21

Weighmaster NANCY
Origin WASH ST

Ref. YAKIMA
Grid

DESCRIPTION

Scale 1 Gross Wt.	102840 LB	Vehicle	TRAIL
Scale 1 Tare Wt.	38860 LB		Roll-Off
Net Wt.	63980 LB	TON	31.99

OTHER SOILS per TON

PO # 2042-12-039
NOTE
DRIVER DIETRICH 8503

BY SIGNING THIS, I CERTIFY THAT THIS DISPOSAL MATERIAL ORIGINATED IN THE COUNTY/STATE AS STATED ABOVE. I ALSO CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THIS LOAD CONTAINS NO HAZARDOUS WASTE.

Signature _____

258.67 Tons.

Wasco County Landfill
WASCO COUNTY LANDFILL
The Dalles, OR 97058

000679
ANDERSON ENVIRONMENTAL
BRETT MACDONALD
705 COLORADO STREET
KELSO WA 98626

Site 40
Ticket 098080
Date In 05/18/12
Time In 07:00
Date Out 05/18/12
Time Out 07:30:19

Weighmaster Linda
Origin WASH ST

Ref. YAKIMA
Grid

DESCRIPTION

Scale 1 Gross Wt.	104280 LB	Vehicle TRAIL	
Scale 1 Tare Wt.	39180 LB	Roll-Off	
Net Wt.	65100 LB	TON	32.55

OTHER SOILS per TON

PO # 2042-12-039
NOTE
DRIVER DIETRICH 8503

BY SIGNING THIS, I CERTIFY THAT THIS DISPOSAL MATERIAL ORIGINATED IN THE COUNTY/STATE AS STATED ABOVE. I ALSO CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THIS LOAD CONTAINS NO HAZARDOUS WASTE.

Signature _____

Wasco County Landfill
WASCO COUNTY LANDFILL
The Dalles, OR 97058

** DUPLICATE TICKET **

000679
ANDERSON ENVIRONMENTAL
BRETT MACDONALD
705 COLORADO STREET
KELSO WA 98626

Site 40
Ticket 098081
Date In 05/18/12
Time In 07:00
Date Out 05/18/12
Time Out 07:26:33

Weighmaster Linda
Origin WASH ST

Ref. YAKIMA
Grid

DESCRIPTION

Scale 1 Gross Wt.	104600 LB	Vehicle	TRAIL
Scale 1 Tare Wt.	39940 LB	Roll-Off	
Net Wt.	64660 LB	TON	32.33

OTHER SOILS per TON

PO # 2042-12-039
NOTE
DRIVER DIETRICH 8504

BY SIGNING THIS, I CERTIFY THAT THIS DISPOSAL MATERIAL ORIGINATED IN THE COUNTY/STATE AS STATED ABOVE. I ALSO CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THIS LOAD CONTAINS NO HAZARDOUS WASTE.

Signature _____

Wasco County Landfill
WASCO COUNTY LANDFILL
The Dalles, OR 97058

** DUPLICATE TICKET **

000679
ANDERSON ENVIRONMENTAL
BRETT MACDONALD
705 COLORADO STREET
KELSO WA 98626

Site 40
Ticket 098079
Date In 05/18/12
Time In 06:59
Date Out 05/18/12
Time Out 07:14:51

Weighmaster Linda
Origin WASH ST

Ref. YAKIMA
Grid

DESCRIPTION

Scale 1 Gross Wt.	104920 LB	Vehicle	TRAIL
Scale 1 Tare Wt.	39940 LB	Roll-Off	
Net Wt.	64980 LB	TON	32.49

OTHER SOILS per TON

PO # 2042-12-039
NOTE
DRIVER DIETRICH 8508

BY SIGNING THIS, I CERTIFY THAT THIS DISPOSAL MATERIAL ORIGINATED IN THE COUNTY/STATE AS STATED ABOVE. I ALSO CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THIS LOAD CONTAINS NO HAZARDOUS WASTE.

Signature _____

Wasco County Landfill
WASCO COUNTY LANDFILL
The Dalles, OR 97058

** DUPLICATE TICKET **

000679
ANDERSON ENVIRONMENTAL
BRETT MACDONALD
705 COLORADO STREET
KELSO WA 98626

Site 40
Ticket 098115
Date In 05/18/12
Time In 10:09
Date Out 05/18/12
Time Out 10:42:09

Weighmaster Linda
Origin WASH ST

Ref. YAKIMA
Grid

DESCRIPTION

Scale 1 Gross Wt.	105820 LB	Vehicle	TRAIL
Scale 1 Tare Wt.	39420 LB	Roll-Off	
Net Wt.	66400 LB	TON	33.20

OTHER SOILS per TON

PO # 2042-12-039
NOTE
DRIVER DIETRICH 8509

BY SIGNING THIS, I CERTIFY THAT THIS DISPOSAL MATERIAL ORIGINATED IN THE COUNTY/STATE AS STATED ABOVE. I ALSO CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THIS LOAD CONTAINS NO HAZARDOUS WASTE.

Signature _____

Wasco County Landfill
WASCO COUNTY LANDFILL
The Dalles, OR 97058

000679
ANDERSON ENVIRONMENTAL
BRETT MACDONALD
705 COLORADO STREET
KELSO WA 98626

Site 40
Ticket 098057
Date In 05/17/12
Time In 13:09
Date Out 05/17/12
Time Out 13:25:06

Weighmaster NANCY
Origin WASH ST

Ref. YAKIMA
Grid

DESCRIPTION

Scale 1 Gross Wt.	102280 LB	Vehicle	TRAIL
Scale 1 Tare Wt.	39680 LB	Roll-Off	
Net Wt.	62600 LB	TON	31.30

OTHER SOILS per TON

PO # 2042-12-039
NOTE
DRIVER DIETRICH 8508

BY SIGNING THIS, I CERTIFY THAT THIS DISPOSAL MATERIAL ORIGINATED IN THE COUNTY/STATE AS STATED ABOVE. I ALSO CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THIS LOAD CONTAINS NO HAZARDOUS WASTE.

Signature _____

Wasco County Landfill
WASCO COUNTY LANDFILL
The Dalles, OR 97058

** DUPLICATE TICKET **

000679
ANDERSON ENVIRONMENTAL
BRETT MACDONALD
705 COLORADO STREET
KELSO WA 98626

Site 40
Ticket 098061
Date In 05/17/12
Time In 13:36
Date Out 05/17/12
Time Out 14:01:26

Weighmaster NANCY
Origin WASH ST

Ref. YAKIMA
Grid

DESCRIPTION

Scale 1 Gross Wt.	103720 LB	Vehicle	TRAIL
Scale 1 Tare Wt.	39460 LB	Roll-Off	
Net Wt.	64260 LB	TON	32.13

OTHER SOILS per TON

PO # 2042-12-039
NOTE
DRIVER DIETRICH 8504

BY SIGNING THIS, I CERTIFY THAT THIS DISPOSAL MATERIAL ORIGINATED IN THE COUNTY/STATE AS STATED ABOVE. I ALSO CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THIS LOAD CONTAINS NO HAZARDOUS WASTE.

Signature _____

Wasco County Landfill
WASCO COUNTY LANDFILL
The Dalles, OR 97058

000679
ANDERSON ENVIRONMENTAL
BRETT MACDONALD
705 COLORADO STREET
KELSO WA 98626

Site 40
Ticket 098073
Date In 05/17/12
Time In 14:59
Date Out 05/17/12
Time Out 15:34:03

Weighmaster NANCY
Origin WASH ST

Ref. YAKIMA
Grid

DESCRIPTION

Scale 1 Gross Wt.	104480 LB	Vehicle	TRAIL
Scale 1 Tare Wt.	39120 LB	Roll-Off	
Net Wt.	65360 LB	TON	32.68

OTHER SOILS per TON

PO # 2042-12-039
NOTE
DRIVER DIETRICH 8509

BY SIGNING THIS, I CERTIFY THAT THIS DISPOSAL MATERIAL ORIGINATED IN THE COUNTY/STATE AS STATED ABOVE. I ALSO CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THIS LOAD CONTAINS NO HAZARDOUS WASTE.

Signature _____

Appendix F

Import Backfill Laboratory Analytical Reports and Chain-of-Custody Documentation

Data Collation of Impacted Pit Run cPAH Analytical Results for Location Characterization

TABLE 1: **Initial import sampling results with 1-1/4-inch crushed stone base course ("Pit Run") identified has having contaminants.**

Sample ID	Benzo(a)-anthracene	Benzo(a)-anthracene	Chrysene	Benzo(b)-fluoranthene	Benzo(k)-fluoranthene	Benzo(a)-pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)-anthracene	Total cPAHs (µg/kg)[(a)]	Total cPAHs (µg/kg)[(a)(b)]
Pit Run Backfill	48	48	82	100	33	66	68	<40	**91.72**	**93.72**
TEFs	0.1	0.1	0.01	0.1	0.1	1	0.1	0.1	(c)	(c)

TABLE 2: **Second test of import material from five locations in trench collected 5/23/12. Sample locations approximately 6 inches below ground surface. See Figure 2. Analyzed by Valley Environmental. RL at 0.01 milligrams per kilogram (mg/kg).**

Sample ID	Benzo(a)-anthracene	Benzo(a)-anthracene	Chrysene	Benzo(b)-fluoranthene	Benzo(k)-fluoranthene	Benzo(a)-pyrene	Indeno(1,2,3-cd)-pyrene	Dibenz(a,h)-anthracene	Total cPAHs (µg/kg)[(a)]	Total cPAHs (µg/kg)[(a)(b)]
S1	<10	<10	<10	<10	<10	<10	<10	<10	**0**	**75.5**
S2	84	84	84	105	23	56	57	<10	**83.74**	**88.74**
S3	22	22	11	17	10	10	10	<10	**16.01**	**21.01**
S4	160	160	254	293	67	175	156	37	**248.84**	**248.84**
S5	<10	<10	<10	<10	<10	<10	<10	<10	**0**	**75.5**
TEFs	0.1	0.1	0.01	0.1	0.1	1	0.1	0.1	(c)	(c)

TABLE 3: **Third test of import material from five locations in trench collected 6/5/12. Sample locations approximately 6 inches below ground surface. See Figure 3. Analyzed by Valley Environmental. RL at 0.01 mg/kg.**

Sample ID	Benzo(a)-anthracene	Benzo(a)-anthracene	Chrysene	Benzo(b)-fluoranthene	Benzo(k)-fluoranthene	Benzo(a)-pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)-anthracene	Total cPAHs (µg/kg)[(a)]	Total cPAHs (µg/kg)[(a)(b)]
S1	324	324	422	510	512	359	295	67	**534.02**	**534.02**
S2	<10	<10	<10	<10	<10	<10	<10	<10	**0**	**75.5**
S3	70	70	68	71	49	68	53	11	**94.08**	**94.08**
S4	144	144	181	208	138	146	120	25	**211.31**	**211.31**
S5[(d)]	<10	<10	<10	<10	<10	<10	<10	<10	**0**	**75.5**
TEFs	0.1	0.1	0.01	0.1	0.1	1	0.1	0.1	(c)	(c)

TABLE 4: **Fourth test of import material from two locations in trench of the daycare playground collected 6/15/12. Sample locations approximately 6 inches below ground surface. See Figure 4. Sample locations approximately 6 inches below ground surface and either side of removed material. Analyzed by Valley Environmental. RL at 0.01 mg/kg.**

Sample ID	Benzo(a)-anthracene	Benzo(a)-anthracene	Chrysene	Benzo(b)-fluoranthene	Benzo(k)-fluoranthene	Benzo(a)-pyrene	Indeno(1,2,3-cd)-pyrene	Dibenz(a,h)-anthracene	Total cPAHs (µg/kg)[(a)]	Total cPAHs (µg/kg)[(a)(b)]
PG1	56	56	49	62	27	47	<10	13	**63.29**	**63.2905**
PG2	172	172	248	251	251	178	148	40	**266.68**	**266.68**
TEFs	0.1	0.1	0.01	0.1	0.1	1	0.1	0.1	(c)	(c)

Notes:

(a) Total cPAHs are based on benzo(a)pyrene equivalent values. Individual detected cPAH concentrations were multiplied by benzo(a)pyrene toxicity equivalencey factors (TEFs) prior to summation (per WAC 173-340-708). TEFs used are shown for each cPAH.

(b) Nondetectable concentrations were assigned values of 1/2 that of the analytical method detection limit (MDL)

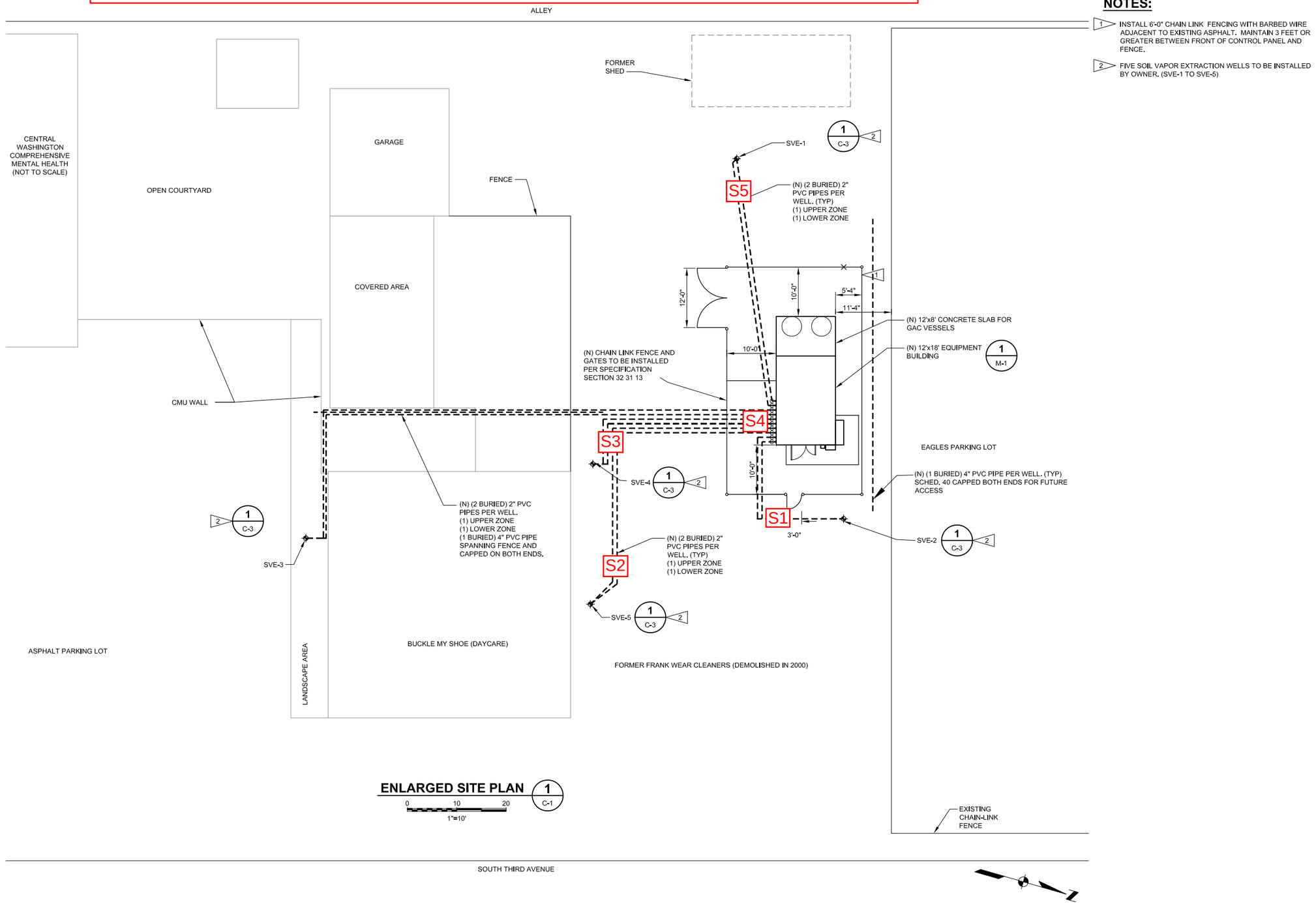
(c) Nondetectable concentrations considered to be equal to zero for Total cPAH calculation.

(d) Sample S5 in Table 3 is representative of clean import backfill material remaining in the trench exvations (see Figure 3 in Appedix F).

Total cPAH concentrations that exceed the MTCA Method A soil cleanup level are highlighted yellow.

µg/kg = micrograms per kilogram
RL = laboratory reporting limit
cPAH = carcinogenic polycyclic aromatic hydrocarbons

FIGURE 2 - 5/23/12 Sampling Locations for Location Characterization of Impacted CSBC Import Backfill



ENLARGED SITE PLAN

0 10 20

1"=10'

NOTES:

1. INSTALL 6'-0" CHAIN LINK FENCING WITH BARBED WIRE ADJACENT TO EXISTING ASPHALT. MAINTAIN 3 FEET OR GREATER BETWEEN FRONT OF CONTROL PANEL AND FENCE.
2. FIVE SOIL VAPOR EXTRACTION WELLS TO BE INSTALLED BY OWNER. (SVE-1 TO SVE-5)

NO.	REVISION	DATE	BY

SCALES

0 1"

0 25mm

IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

DESIGNED JMF

DRAWN BBH

CHECKED RCG

WASHINGTON STATE DEPARTMENT OF ECOLOGY

FRANK WEAR SOIL VAPOR EXTRACTION SYSTEM
YAKIMA, WASHINGTON

Kennedy/Jenks Consultants
FEDERAL WAY, WA

ENLARGED SITE PLAN

FILE NAME 1196016_C02

JOB NO. 1196016*00

DATE JAN. 2012

SHEET C-2 OF

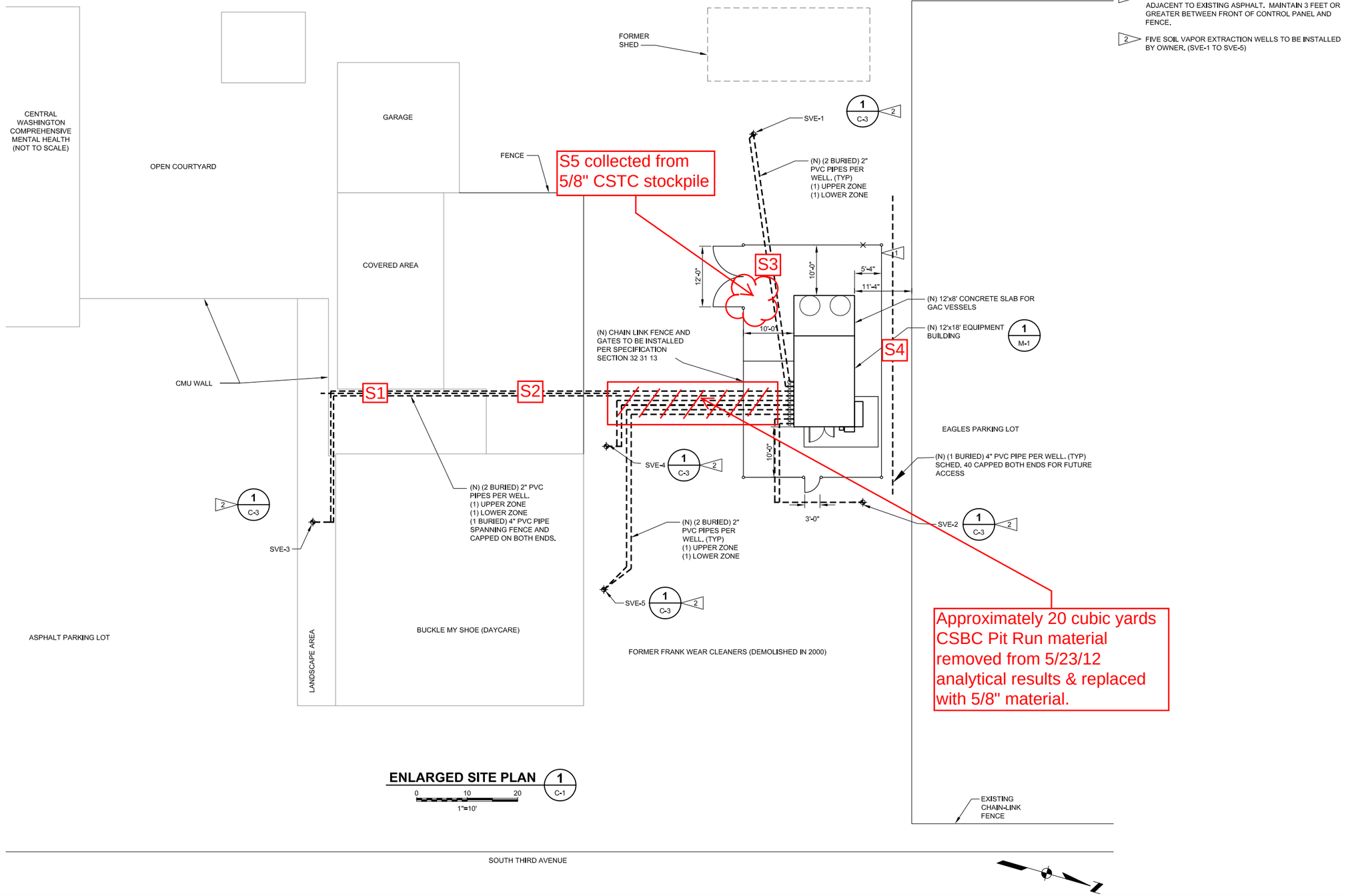
JARODF 10/9/2012 5:39 PM

C:\Users\jarodf\Desktop\Frank Wear Construction\Asbuilt Drawings\1196016-C02.dwg

FIGURE 3 - 06/05/12 SAMPLING LOCATIONS OF IMPORT CSBC (PIT RUN) BACKFILL AND MATERIAL REMOVED FROM PREVIOUS TESTING

NOTES:

1. INSTALL 6'-0" CHAIN LINK FENCING WITH BARBED WIRE ADJACENT TO EXISTING ASPHALT. MAINTAIN 3 FEET OR GREATER BETWEEN FRONT OF CONTROL PANEL AND FENCE.
2. FIVE SOIL VAPOR EXTRACTION WELLS TO BE INSTALLED BY OWNER. (SVE-1 TO SVE-5)



ENLARGED SITE PLAN 1 C-1

0 10 20

1"=10'

NO.	REVISION	DATE	BY

SCALES

0 1"

0 25mm

IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

DESIGNED JMF

DRAWN BBH

CHECKED RCG

WASHINGTON STATE DEPARTMENT OF ECOLOGY

FRANK WEAR SOIL VAPOR EXTRACTION SYSTEM YAKIMA, WASHINGTON

Kennedy/Jenks Consultants

FEDERAL WAY, WA

ENLARGED SITE PLAN

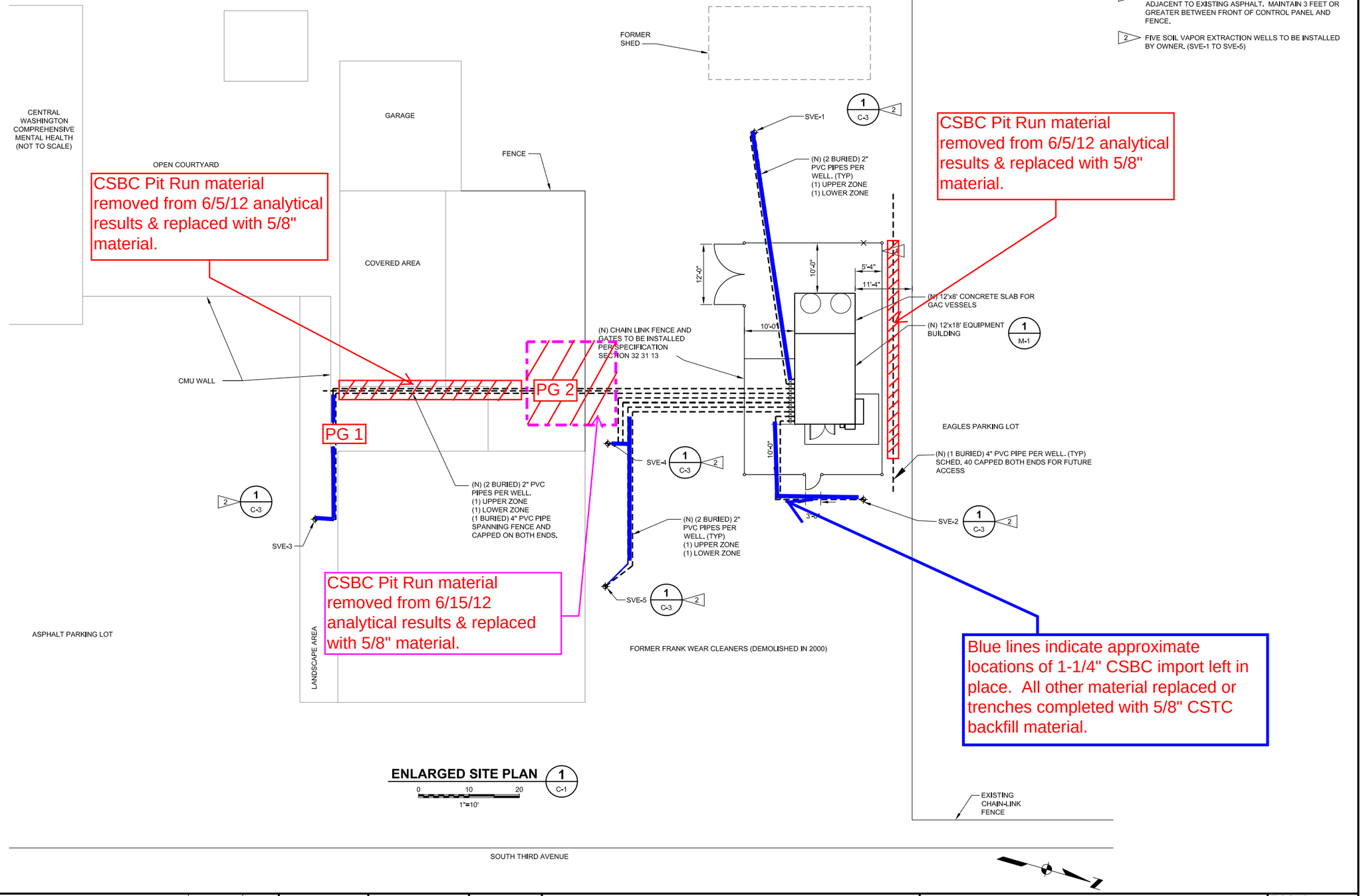
FILE NAME 1196016_C02

JOB NO. 1196016*00

DATE JAN. 2012

SHEET C-2 OF

FIGURE 4 - 06/15/12 SAMPLING LOCATIONS OF IMPORT CSBC (PIT RUN) BACKFILL AND MATERIAL REMOVED FROM PREVIOUS TESTING



NO.	REVISION	DATE	BY

SCALES
0 1"
0 25mm
IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

DESIGNED JMF
DRAWN BBH
CHECKED RCG

WASHINGTON STATE DEPARTMENT OF ECOLOGY

FRANK WEAR SOIL VAPOR EXTRACTION SYSTEM
YAKIMA, WASHINGTON

Kennedy/Jenks Consultants
FEDERAL WAY, WA

ENLARGED SITE PLAN

FILE NAME 1196016_C02
JOB NO. 1196016*00
DATE JAN. 2012
SHEET C-2 OF

C:\Users\jarodf\Desktop\Frank Wear Construction\Asbuilt Drawings\1196016-C02.dwg
JARODF 10/9/2012 5:39 PM

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Portland
9405 SW Nimbus Ave.
Beaverton, OR 97008
Tel: (503)906-9200

TestAmerica Job ID: 250-2362-1
TestAmerica Sample Delivery Group: 12-026
Client Project/Site: DOE-Yakima

For:
Anderson Environmental Contracting LLC
705 Colorado Street
Kelso, Washington 98626

Attn: Brett MacDonald

Vanessa Frahs

Authorized for release by:
5/11/2012 4:44:10 PM

Vanessa Frahs
Project Manager I
vanessa.frahs@testamericainc.com

Table of Contents

Sample Summary

Client: Anderson Environmental Contracting LLC
Project/Site: DOE-Yakima

TestAmerica Job ID: 250-2362-1
SDG: 12-026

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
250-2362-1	Pipe Bedding	Solid	04/27/12 15:00	05/01/12 15:00
250-2362-2	Pit Run Backfill	Solid	04/27/12 15:20	05/01/12 15:00

Job ID: 250-2362-1

Laboratory: TestAmerica Portland

Narrative

Receipt
The samples were received on 5/1/2012 3:00 PM; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 5.20 C.

GC/MS VOA
Method(s) 8260B: A full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 5 analytes to recover outside criteria for this method when a full list spike is utilized. The LCS associated with batch 4508 had 1 analyte outside control limits; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method(s) 8260B: The matrix spike / matrix spike duplicate (MS/MSD) precision for batch 4508 was outside control limits for Vinyl chloride. The associated laboratory control sample and MS/MSD met acceptance recovery criteria.

Method(s) 8260B: The method blank for preparation batch 4508 contained Hexachlorobutadiene above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

No other analytical or quality issues were noted.

GC/MS Semi VOA
Method(s) 8270C: The laboratory control sample (LCS) , the matric spike(MS) and the matrix spike duplicate (MSD) for batch 110923(8270 analytical batch 111038) exceeded control limits for the following analytes: 2,4-Dichlorophenol, 2,4-Dimethylphenol, 2-Methylphenol, 3&4 Methylphenol and Phenol. These analytes were biased high in the spikes and were not detected in the associated samples; therefore, the data have been reported.

No other analytical or quality issues were noted.

GC VOA
No analytical or quality issues were noted.

GC Semi VOA
Method(s) 8081A: The continuing calibration verification (CCV) for DDE and DDD associated with batch 4748 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method(s) 8081A: The following sample(s) was diluted due to the nature of the sample matrix: Pit Run Backfill (250-2362-2). Elevated reporting limits (RLs) are provided.

Method(s) NWTPH-Dx: Detected Hydrocarbons appear to be due to creosote or similar product as well as oil.Pit Run Backfill (250-2362-2)

No other analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

Organic Prep
No analytical or quality issues were noted.

VOA Prep
No analytical or quality issues were noted.

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD exceeds the control limits
B	Compound was found in the blank and sample.
F	RPD of the MS and MSD exceeds the control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD exceeds the control limits
F	MS or MSD exceeds the control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: Anderson Environmental Contracting LLC
Project/Site: DOE-Yakima

TestAmerica Job ID: 250-2362-1
SDG: 12-026

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: Pipe Bedding
Date Collected: 04/27/12 15:00
Date Received: 05/01/12 15:00

Lab Sample ID: 250-2362-1
Matrix: Solid
Percent Solids: 94.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		2500	500	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Benzene	ND		100	20	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Bromobenzene	ND		100	20	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Bromochloromethane	ND		100	24	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Bromodichloromethane	ND		100	15	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Bromoform	ND		500	100	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Bromomethane	ND		500	28	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
2-Butanone (MEK)	ND		1000	300	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
n-Butylbenzene	ND		500	52	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
sec-Butylbenzene	ND		100	20	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
tert-Butylbenzene	ND		100	13	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Carbon disulfide	ND		1000	39	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Carbon tetrachloride	ND		100	19	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Chlorobenzene	ND		100	19	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Chloroethane	ND		100	22	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Chloroform	ND		100	16	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Chloromethane	ND		500	15	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
2-Chlorotoluene	ND		100	13	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
4-Chlorotoluene	ND		100	18	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
1,2-Dibromo-3-Chloropropane	ND		500	100	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Dibromochloromethane	ND		100	17	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
1,2-Dibromoethane	ND		100	17	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Dibromomethane	ND		100	21	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
1,2-Dichloroethane	ND		100	16	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
1,3-Dichlorobenzene	ND		100	17	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
1,4-Dichlorobenzene	ND		100	29	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Dichlorodifluoromethane	ND		500	25	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
1,1-Dichloroethane	ND		100	19	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
1,1-Dichloroethene	ND		100	16	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
cis-1,2-Dichloroethene	ND		100	28	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
trans-1,2-Dichloroethene	ND		100	20	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
1,2-Dichloropropane	ND		100	16	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
1,3-Dichloropropane	ND		100	17	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
2,2-Dichloropropane	ND		100	17	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
1,1-Dichloropropene	ND		100	15	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
cis-1,3-Dichloropropene	ND		100	17	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
trans-1,3-Dichloropropene	ND		100	15	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Ethylbenzene	ND		100	18	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Hexachlorobutadiene	ND		400	18	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
2-Hexanone	ND	*	1000	220	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Isopropylbenzene	ND		200	36	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
p-Isopropyltoluene	ND		200	11	ug/Kg	☼	05/02/12 16:53	05/07/12 17:50	1
4-Methyl-2-pentanone (MIBK)	ND		500	100	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Methyl tert-butyl ether	ND		100	13	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Methylene Chloride	ND		500	14	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Naphthalene	ND		200	24	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
N-Propylbenzene	ND		100	21	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Styrene	ND		100	18	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
1,1,1,2-Tetrachloroethane	ND		100	18	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
1,1,2,2-Tetrachloroethane	ND		100	24	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Tetrachloroethene	ND		100	27	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: Pipe Bedding
Date Collected: 04/27/12 15:00
Date Received: 05/01/12 15:00

Lab Sample ID: 250-2362-1
Matrix: Solid
Percent Solids: 94.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	ND		100	15	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
1,2,3-Trichlorobenzene	ND		500	100	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
1,2,4-Trichlorobenzene	ND		100	25	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
1,1,1-Trichloroethane	ND		100	21	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
1,1,2-Trichloroethane	ND		100	24	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Trichloroethene	ND		100	21	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Trichlorofluoromethane	ND		100	22	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
1,2,3-Trichloropropane	ND		100	21	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
1,2,4-Trimethylbenzene	ND		100	46	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
1,3,5-Trimethylbenzene	ND		100	24	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
Vinyl chloride	ND		500	100	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
m,p-Xylene	ND		200	36	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
o-Xylene	ND		100	23	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1
1,2-Dichlorobenzene	ND		100	14	ug/Kg	☼	05/02/12 16:53	05/03/12 14:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 125*	*05/02/12 16:53*	*05/03/12 14:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 125*	*05/02/12 16:53*	*05/07/12 17:50*	*1*
4-Bromofluorobenzene (Surr)	*97*		*75 - 125*	*05/02/12 16:53*	*05/03/12 14:46*	*1*
4-Bromofluorobenzene (Surr)	*97*		*75 - 125*	*05/02/12 16:53*	*05/07/12 17:50*	*1*
Dibromofluoromethane (Surr)	*94*		*75 - 125*	*05/02/12 16:53*	*05/03/12 14:46*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 125*	*05/02/12 16:53*	*05/07/12 17:50*	*1*
Toluene-d8 (Surr)	*101*		*75 - 125*	*05/02/12 16:53*	*05/03/12 14:46*	*1*
Toluene-d8 (Surr)	*104*		*75 - 125*	*05/02/12 16:53*	*05/07/12 17:50*	*1*

Client Sample ID: Pit Run Backfill
Date Collected: 04/27/12 15:20
Date Received: 05/01/12 15:00

Lab Sample ID: 250-2362-2
Matrix: Solid
Percent Solids: 94.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		2500	500	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Benzene	ND		100	20	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Bromobenzene	ND		100	20	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Bromochloromethane	ND		100	24	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Bromodichloromethane	ND		100	15	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Bromoform	ND		500	100	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Bromomethane	ND		500	28	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
2-Butanone (MEK)	ND		1000	300	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
n-Butylbenzene	ND		500	52	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
sec-Butylbenzene	ND		100	20	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
tert-Butylbenzene	ND		100	13	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Carbon disulfide	ND		1000	39	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Carbon tetrachloride	ND		100	19	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Chlorobenzene	ND		100	19	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Chloroethane	ND		100	22	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Chloroform	ND		100	16	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Chloromethane	ND		500	15	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
2-Chlorotoluene	ND		100	13	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
4-Chlorotoluene	ND		100	18	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
1,2-Dibromo-3-Chloropropane	ND		500	100	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Dibromochloromethane	ND		100	17	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
1,2-Dibromoethane	ND		100	17	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: Pit Run Backfill
Date Collected: 04/27/12 15:20
Date Received: 05/01/12 15:00

Lab Sample ID: 250-2362-2
Matrix: Solid
Percent Solids: 94.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	ND		100	21	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
1,2-Dichloroethane	ND		100	16	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
1,3-Dichlorobenzene	ND		100	17	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
1,4-Dichlorobenzene	ND		100	29	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Dichlorodifluoromethane	ND		500	25	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
1,1-Dichloroethane	ND		100	19	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
1,1-Dichloroethene	ND		100	16	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
cis-1,2-Dichloroethene	ND		100	28	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
trans-1,2-Dichloroethene	ND		100	20	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
1,2-Dichloropropane	ND		100	16	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
1,3-Dichloropropane	ND		100	17	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
2,2-Dichloropropane	ND		100	17	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
1,1-Dichloropropene	ND		100	15	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
cis-1,3-Dichloropropene	ND		100	17	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
trans-1,3-Dichloropropene	ND		100	15	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Ethylbenzene	ND		100	18	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Hexachlorobutadiene	ND		400	18	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
2-Hexanone	ND	*	1000	220	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Isopropylbenzene	ND		200	36	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
p-Isopropyltoluene	ND		200	11	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
4-Methyl-2-pentanone (MIBK)	ND		500	100	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Methyl tert-butyl ether	ND		100	13	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Methylene Chloride	ND		500	14	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Naphthalene	ND		200	24	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
N-Propylbenzene	ND		100	21	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Styrene	ND		100	18	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
1,1,1,2-Tetrachloroethane	ND		100	18	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
1,1,2,2-Tetrachloroethane	ND		100	24	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Tetrachloroethene	ND		100	27	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Toluene	ND		100	15	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
1,2,3-Trichlorobenzene	ND		500	100	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
1,2,4-Trichlorobenzene	ND		100	25	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
1,1,1-Trichloroethane	ND		100	21	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
1,1,2-Trichloroethane	ND		100	24	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Trichloroethene	ND		100	21	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Trichlorofluoromethane	ND		100	22	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
1,2,3-Trichloropropane	ND		100	21	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
1,2,4-Trimethylbenzene	ND		100	46	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
1,3,5-Trimethylbenzene	ND		100	24	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
Vinyl chloride	ND		500	100	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
m,p-Xylene	ND		200	36	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
o-Xylene	ND		100	23	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1
1,2-Dichlorobenzene	ND		100	14	ug/Kg	☼	05/02/12 16:53	05/03/12 15:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 125*	*05/02/12 16:53*	*05/03/12 15:08*	*1*
4-Bromofluorobenzene (Surr)	*94*		*75 - 125*	*05/02/12 16:53*	*05/03/12 15:08*	*1*
Dibromofluoromethane (Surr)	*96*		*75 - 125*	*05/02/12 16:53*	*05/03/12 15:08*	*1*
Toluene-d8 (Surr)	*103*		*75 - 125*	*05/02/12 16:53*	*05/03/12 15:08*	*1*

Client: Anderson Environmental Contracting LLC
Project/Site: DOE-Yakima

TestAmerica Job ID: 250-2362-1
SDG: 12-026

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Client Sample ID: Pipe Bedding
Date Collected: 04/27/12 15:00
Date Received: 05/01/12 15:00

Lab Sample ID: 250-2362-1
Matrix: Solid
Percent Solids: 94.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND	*	110	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Bis(2-chloroethyl)ether	ND		110	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
2-Chlorophenol	ND		110	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
1,3-Dichlorobenzene	ND		53	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
1,4-Dichlorobenzene	ND		53	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Benzyl alcohol	ND		110	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
1,2-Dichlorobenzene	ND		58	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
2-Methylphenol	ND	*	110	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
3 & 4 Methylphenol	ND	*	210	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
N-Nitrosodi-n-propylamine	ND		110	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Hexachloroethane	ND		110	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Nitrobenzene	ND		110	36	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Isophorone	ND		110	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
2-Nitrophenol	ND		110	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
2,4-Dimethylphenol	ND	*	110	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Benzoic acid	ND		2600	790	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Bis(2-chloroethoxy)methane	ND		110	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
2,4-Dichlorophenol	ND	*	110	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
1,2,4-Trichlorobenzene	ND		53	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Naphthalene	ND		21	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
4-Chloroaniline	ND		110	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Hexachlorobutadiene	ND		53	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
4-Chloro-3-methylphenol	ND		110	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
2-Methylnaphthalene	ND		21	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Hexachlorocyclopentadiene	ND		110	11	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
2,4,6-Trichlorophenol	ND		160	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
2,4,5-Trichlorophenol	ND		110	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
2-Chloronaphthalene	ND		21	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
2-Nitroaniline	ND		110	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Dimethyl phthalate	ND		110	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Acenaphthylene	ND		21	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
2,6-Dinitrotoluene	ND		110	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
3-Nitroaniline	ND		110	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Acenaphthene	ND		21	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
2,4-Dinitrophenol	ND		1100	210	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
4-Nitrophenol	ND		1100	260	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Dibenzofuran	ND		110	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
2,4-Dinitrotoluene	ND		110	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Diethyl phthalate	ND		210	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
4-Chlorophenyl phenyl ether	ND		110	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Fluorene	ND		21	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
4-Nitroaniline	ND		110	21	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
4,6-Dinitro-2-methylphenol	ND		1100	110	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
N-Nitrosodiphenylamine	ND		53	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
4-Bromophenyl phenyl ether	ND		110	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Hexachlorobenzene	ND		53	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Pentachlorophenol	ND		210	21	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Phenanthrene	ND		21	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Anthracene	ND		21	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Di-n-butyl phthalate	ND		530	53	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Fluoranthene	ND		21	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: Pipe Bedding
Date Collected: 04/27/12 15:00
Date Received: 05/01/12 15:00

Lab Sample ID: 250-2362-1
Matrix: Solid
Percent Solids: 94.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	ND		21	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Butyl benzyl phthalate	ND		210	53	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
3,3'-Dichlorobenzidine	ND		210	32	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Benzo[a]anthracene	ND		21	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Chrysene	ND		26	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Bis(2-ethylhexyl) phthalate	ND		630	53	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Di-n-octyl phthalate	ND		530	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Benzo[a]pyrene	ND		32	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Indeno[1,2,3-cd]pyrene	ND		42	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Dibenz(a,h)anthracene	ND		42	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Benzo[g,h,i]perylene	ND		26	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Carbazole	ND		110	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
1-Methylnaphthalene	ND		32	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Benzo[b]fluoranthene	ND		21	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
Benzo[k]fluoranthene	ND		26	5.3	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1
bis (2-chloroisopropyl) ether	ND		260	16	ug/Kg	☼	05/09/12 10:16	05/10/12 11:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol	*111*		*36 - 145*	*05/09/12 10:16*	*05/10/12 11:18*	*1*
Phenol-d5	*138*		*38 - 149*	*05/09/12 10:16*	*05/10/12 11:18*	*1*
Nitrobenzene-d5	*84*		*38 - 141*	*05/09/12 10:16*	*05/10/12 11:18*	*1*
2-Fluorobiphenyl	*86*		*42 - 140*	*05/09/12 10:16*	*05/10/12 11:18*	*1*
2,4,6-Tribromophenol	*74*		*28 - 143*	*05/09/12 10:16*	*05/10/12 11:18*	*1*
Terphenyl-d14	*78*		*42 - 151*	*05/09/12 10:16*	*05/10/12 11:18*	*1*

Client Sample ID: Pit Run Backfill
Date Collected: 04/27/12 15:20
Date Received: 05/01/12 15:00

Lab Sample ID: 250-2362-2
Matrix: Solid
Percent Solids: 94.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND	*	100	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Bis(2-chloroethyl)ether	ND		100	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
2-Chlorophenol	ND		100	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
1,3-Dichlorobenzene	ND		50	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
1,4-Dichlorobenzene	ND		50	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Benzyl alcohol	ND		100	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
1,2-Dichlorobenzene	ND		55	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
2-Methylphenol	ND	*	100	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
3 & 4 Methylphenol	ND	*	200	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
N-Nitrosodi-n-propylamine	ND		100	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Hexachloroethane	ND		100	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Nitrobenzene	ND		100	34	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Isophorone	ND		100	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
2-Nitrophenol	ND		100	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
2,4-Dimethylphenol	ND	*	100	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Benzoic acid	ND		2500	750	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Bis(2-chloroethoxy)methane	ND		100	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
2,4-Dichlorophenol	ND	*	100	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
1,2,4-Trichlorobenzene	ND		50	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Naphthalene	ND		20	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
4-Chloroaniline	ND		100	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Hexachlorobutadiene	ND		50	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: Pit Run Backfill
Date Collected: 04/27/12 15:20
Date Received: 05/01/12 15:00

Lab Sample ID: 250-2362-2
Matrix: Solid
Percent Solids: 94.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloro-3-methylphenol	ND		100	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
2-Methylnaphthalene	ND		20	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Hexachlorocyclopentadiene	ND		100	10	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
2,4,6-Trichlorophenol	ND		150	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
2,4,5-Trichlorophenol	ND		100	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
2-Chloronaphthalene	ND		20	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
2-Nitroaniline	ND		100	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Dimethyl phthalate	ND		100	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Acenaphthylene	ND		20	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
2,6-Dinitrotoluene	ND		100	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
3-Nitroaniline	ND		100	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Acenaphthene	ND		20	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
2,4-Dinitrophenol	ND		1000	200	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
4-Nitrophenol	ND		1000	250	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Dibenzofuran	ND		100	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
2,4-Dinitrotoluene	ND		100	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Diethyl phthalate	ND		200	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
4-Chlorophenyl phenyl ether	ND		100	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Fluorene	ND		20	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
4-Nitroaniline	ND		100	20	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
4,6-Dinitro-2-methylphenol	ND		1000	100	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
N-Nitrosodiphenylamine	ND		50	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
4-Bromophenyl phenyl ether	ND		100	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Hexachlorobenzene	ND		50	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Pentachlorophenol	ND		200	20	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Phenanthrene	**67**		20	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Anthracene	**5.7**	**J**	20	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Di-n-butyl phthalate	ND		500	50	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Fluoranthene	**150**		20	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Pyrene	**150**		20	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Butyl benzyl phthalate	ND		200	50	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
3,3'-Dichlorobenzidine	ND		200	30	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Benzo[a]anthracene	**48**		20	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Chrysene	**82**		25	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Bis(2-ethylhexyl) phthalate	ND		600	50	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Di-n-octyl phthalate	ND		500	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Benzo[a]pyrene	**66**		30	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Indeno[1,2,3-cd]pyrene	**68**		40	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Dibenz(a,h)anthracene	ND		40	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Benzo[g,h,i]perylene	**62**		25	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Carbazole	**8.9**	**J**	100	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
1-Methylnaphthalene	ND		30	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Benzo[b]fluoranthene	**100**		20	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
Benzo[k]fluoranthene	**33**		25	5.0	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1
bis (2-chloroisopropyl) ether	ND		250	15	ug/Kg	☼	05/09/12 10:16	05/10/12 12:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol	*82*		*36 - 145*	*05/09/12 10:16*	*05/10/12 12:26*	*1*
Phenol-d5	*135*		*38 - 149*	*05/09/12 10:16*	*05/10/12 12:26*	*1*
Nitrobenzene-d5	*83*		*38 - 141*	*05/09/12 10:16*	*05/10/12 12:26*	*1*
2-Fluorobiphenyl	*85*		*42 - 140*	*05/09/12 10:16*	*05/10/12 12:26*	*1*

Client: Anderson Environmental Contracting LLC
Project/Site: DOE-Yakima

TestAmerica Job ID: 250-2362-1
SDG: 12-026

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: Pit Run Backfill
Date Collected: 04/27/12 15:20
Date Received: 05/01/12 15:00

Lab Sample ID: 250-2362-2
Matrix: Solid
Percent Solids: 94.6

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	69		28 - 143	05/09/12 10:16	05/10/12 12:26	1
Terphenyl-d14	78		42 - 151	05/09/12 10:16	05/10/12 12:26	1

Client: Anderson Environmental Contracting LLC
Project/Site: DOE-Yakima

TestAmerica Job ID: 250-2362-1
SDG: 12-026

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Client Sample ID: Pipe Bedding — **Lab Sample ID: 250-2362-1**
Date Collected: 04/27/12 15:00 — **Matrix: Solid**
Date Received: 05/01/12 15:00 — **Percent Solids: 94.0**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND		4.0	1.3	mg/Kg	☼	05/02/12 09:23	05/03/12 15:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*92*		*50 - 150*	*05/02/12 09:23*	*05/03/12 15:15*	*1*

Client Sample ID: Pit Run Backfill — **Lab Sample ID: 250-2362-2**
Date Collected: 04/27/12 15:20 — **Matrix: Solid**
Date Received: 05/01/12 15:00 — **Percent Solids: 94.6**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND		4.0	1.3	mg/Kg	☼	05/02/12 09:23	05/03/12 14:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*96*		*50 - 150*	*05/02/12 09:23*	*05/03/12 14:14*	*1*

Method: 8081A - Organochlorine Pesticides (GC)

Client Sample ID: Pipe Bedding — **Lab Sample ID: 250-2362-1**
Date Collected: 04/27/12 15:00 — **Matrix: Solid**
Date Received: 05/01/12 15:00 — **Percent Solids: 94.0**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		7.1	3.5	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
4,4'-DDE	ND		7.1	3.5	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
4,4'-DDT	ND		7.1	3.5	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
Aldrin	ND		7.1	3.5	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
alpha-BHC	ND		7.1	3.5	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
alpha-Chlordane	ND		7.1	3.5	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
beta-BHC	ND		7.1	3.5	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
Chlordane (technical)	ND		160	79	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
delta-BHC	ND		7.1	3.5	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
Dieldrin	ND		7.1	3.5	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
Endosulfan I	ND		7.1	3.5	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
Endosulfan II	ND		7.1	3.5	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
Endosulfan sulfate	ND		7.1	3.5	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
Endrin	ND		7.1	3.5	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
Endrin aldehyde	ND		7.1	3.5	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
Endrin ketone	ND		7.1	3.5	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
gamma-BHC (Lindane)	ND		7.1	3.5	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
gamma-Chlordane	ND		7.1	3.5	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
Heptachlor	ND		7.1	3.5	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
Heptachlor epoxide	ND		7.1	3.5	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
Methoxychlor	ND		7.1	3.5	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1
Toxaphene	ND		210	110	ug/Kg	☼	05/08/12 09:21	05/08/12 13:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*82*		*30 - 140*	*05/08/12 09:21*	*05/08/12 13:25*	*1*

Client Sample ID: Pit Run Backfill — **Lab Sample ID: 250-2362-2**
Date Collected: 04/27/12 15:20 — **Matrix: Solid**
Date Received: 05/01/12 15:00 — **Percent Solids: 94.6**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		14	6.9	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2
4,4'-DDE	ND		14	6.9	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2
4,4'-DDT	ND		14	6.9	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2
Aldrin	ND		14	6.9	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2
alpha-BHC	ND		14	6.9	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2
alpha-Chlordane	ND		14	6.9	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2
beta-BHC	ND		14	6.9	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2
Chlordane (technical)	ND		310	160	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2
delta-BHC	ND		14	6.9	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2
Dieldrin	ND		14	6.9	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2
Endosulfan I	ND		14	6.9	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2
Endosulfan II	ND		14	6.9	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2
Endosulfan sulfate	ND		14	6.9	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2
Endrin	ND		14	6.9	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2
Endrin aldehyde	ND		14	6.9	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2
Endrin ketone	ND		14	6.9	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2
gamma-BHC (Lindane)	ND		14	6.9	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2
gamma-Chlordane	ND		14	6.9	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2
Heptachlor	ND		14	6.9	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2
Heptachlor epoxide	ND		14	6.9	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2
Methoxychlor	ND		14	6.9	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2

Client: Anderson Environmental Contracting LLC
Project/Site: DOE-Yakima

TestAmerica Job ID: 250-2362-1
SDG: 12-026

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Client Sample ID: Pit Run Backfill
Date Collected: 04/27/12 15:20
Date Received: 05/01/12 15:00

Lab Sample ID: 250-2362-2
Matrix: Solid
Percent Solids: 94.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toxaphene	ND		420	210	ug/Kg	☼	05/08/12 09:21	05/09/12 11:42	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*74*		*30 - 140*	*05/08/12 09:21*	*05/09/12 11:42*	*2*

Client: Anderson Environmental Contracting LLC
Project/Site: DOE-Yakima

TestAmerica Job ID: 250-2362-1
SDG: 12-026

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Client Sample ID: Pipe Bedding
Date Collected: 04/27/12 15:00
Date Received: 05/01/12 15:00

Lab Sample ID: 250-2362-1
Matrix: Solid
Percent Solids: 94.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		35	18	ug/Kg	☼	05/08/12 09:03	05/09/12 12:10	1
PCB-1221	ND		71	35	ug/Kg	☼	05/08/12 09:03	05/09/12 12:10	1
PCB-1232	ND		35	18	ug/Kg	☼	05/08/12 09:03	05/09/12 12:10	1
PCB-1242	ND		35	18	ug/Kg	☼	05/08/12 09:03	05/09/12 12:10	1
PCB-1248	ND		35	18	ug/Kg	☼	05/08/12 09:03	05/09/12 12:10	1
PCB-1254	ND		35	18	ug/Kg	☼	05/08/12 09:03	05/09/12 12:10	1
PCB-1260	ND		35	18	ug/Kg	☼	05/08/12 09:03	05/09/12 12:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*114*		*15 - 150*	*05/08/12 09:03*	*05/09/12 12:10*	*1*

Client Sample ID: Pit Run Backfill
Date Collected: 04/27/12 15:20
Date Received: 05/01/12 15:00

Lab Sample ID: 250-2362-2
Matrix: Solid
Percent Solids: 94.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		35	18	ug/Kg	☼	05/08/12 09:03	05/09/12 12:32	1
PCB-1221	ND		70	35	ug/Kg	☼	05/08/12 09:03	05/09/12 12:32	1
PCB-1232	ND		35	18	ug/Kg	☼	05/08/12 09:03	05/09/12 12:32	1
PCB-1242	ND		35	18	ug/Kg	☼	05/08/12 09:03	05/09/12 12:32	1
PCB-1248	ND		35	18	ug/Kg	☼	05/08/12 09:03	05/09/12 12:32	1
PCB-1254	ND		35	18	ug/Kg	☼	05/08/12 09:03	05/09/12 12:32	1
PCB-1260	ND		35	18	ug/Kg	☼	05/08/12 09:03	05/09/12 12:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*101*		*15 - 150*	*05/08/12 09:03*	*05/09/12 12:32*	*1*

Client: Anderson Environmental Contracting LLC
Project/Site: DOE-Yakima

TestAmerica Job ID: 250-2362-1
SDG: 12-026

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Client Sample ID: Pipe Bedding — **Lab Sample ID: 250-2362-1**
Date Collected: 04/27/12 15:00 — **Matrix: Solid**
Date Received: 05/01/12 15:00 — **Percent Solids: 94.0**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	ND		13	1.3	mg/Kg	☼	05/07/12 11:54	05/07/12 17:29	1
RRO (nC25-nC36)	**4.9**	**J B**	26	2.8	mg/Kg	☼	05/07/12 11:54	05/07/12 17:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*89*		*50 - 150*	*05/07/12 11:54*	*05/07/12 17:29*	*1*

Client Sample ID: Pit Run Backfill — **Lab Sample ID: 250-2362-2**
Date Collected: 04/27/12 15:20 — **Matrix: Solid**
Date Received: 05/01/12 15:00 — **Percent Solids: 94.6**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	**8.1**	**J**	13	1.3	mg/Kg	☼	05/07/12 11:54	05/07/12 17:48	1
RRO (nC25-nC36)	**33**	**B**	26	2.8	mg/Kg	☼	05/07/12 11:54	05/07/12 17:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*87*		*50 - 150*	*05/07/12 11:54*	*05/07/12 17:48*	*1*

Client: Anderson Environmental Contracting LLC
Project/Site: DOE-Yakima

TestAmerica Job ID: 250-2362-1
SDG: 12-026

Method: 6020 - Metals (ICP/MS)

Client Sample ID: Pipe Bedding — **Lab Sample ID: 250-2362-1**
Date Collected: 04/27/12 15:00 — **Matrix: Solid**
Date Received: 05/01/12 15:00 — **Percent Solids: 94.0**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.092	mg/Kg	☼	05/02/12 17:21	05/03/12 00:47	20
Arsenic	**1.7**	**B**	1.0	0.015	mg/Kg	☼	05/02/12 17:21	05/03/12 00:47	20
Beryllium	**0.39**	**J**	21	0.10	mg/Kg	☼	05/02/12 17:21	05/03/12 18:12	200
Cadmium	**0.026**	**J**	1.0	0.023	mg/Kg	☼	05/02/12 17:21	05/03/12 00:47	20
Chromium	**13**		2.1	0.35	mg/Kg	☼	05/02/12 17:21	05/03/12 00:47	20
Copper	**18**		2.1	1.1	mg/Kg	☼	05/02/12 17:21	05/03/12 00:47	20
Nickel	**15**		2.1	0.54	mg/Kg	☼	05/02/12 17:21	05/03/12 00:47	20
Lead	**2.6**		1.0	0.18	mg/Kg	☼	05/02/12 17:21	05/03/12 00:47	20
Antimony	**0.079**	**J**	1.0	0.031	mg/Kg	☼	05/02/12 17:21	05/03/12 00:47	20
Selenium	**0.072**	**J**	1.0	0.042	mg/Kg	☼	05/02/12 17:21	05/03/12 00:47	20
Thallium	ND		1.0	0.11	mg/Kg	☼	05/02/12 17:21	05/03/12 00:47	20
Zinc	**46**	**B**	10	1.5	mg/Kg	☼	05/02/12 17:21	05/03/12 00:47	20

Client Sample ID: Pit Run Backfill — **Lab Sample ID: 250-2362-2**
Date Collected: 04/27/12 15:20 — **Matrix: Solid**
Date Received: 05/01/12 15:00 — **Percent Solids: 94.6**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	**0.11**	**J**	1.0	0.091	mg/Kg	☼	05/02/12 17:21	05/03/12 01:00	20
Arsenic	**1.2**	**B**	1.0	0.014	mg/Kg	☼	05/02/12 17:21	05/03/12 01:00	20
Beryllium	**0.36**	**J**	2.1	0.010	mg/Kg	☼	05/02/12 17:21	05/03/12 18:22	20
Cadmium	**0.048**	**J**	1.0	0.023	mg/Kg	☼	05/02/12 17:21	05/03/12 01:00	20
Chromium	**5.3**		2.1	0.35	mg/Kg	☼	05/02/12 17:21	05/03/12 01:00	20
Copper	**23**		2.1	1.0	mg/Kg	☼	05/02/12 17:21	05/03/12 01:00	20
Nickel	**10**		2.1	0.53	mg/Kg	☼	05/02/12 17:21	05/03/12 01:00	20
Lead	**6.7**		1.0	0.18	mg/Kg	☼	05/02/12 17:21	05/03/12 01:00	20
Antimony	**0.14**	**J**	1.0	0.031	mg/Kg	☼	05/02/12 17:21	05/03/12 01:00	20
Selenium	**0.18**	**J**	1.0	0.041	mg/Kg	☼	05/02/12 17:21	05/03/12 01:00	20
Thallium	ND		1.0	0.11	mg/Kg	☼	05/02/12 17:21	05/03/12 01:00	20
Zinc	**63**	**B**	10	1.5	mg/Kg	☼	05/02/12 17:21	05/03/12 01:00	20

Client: Anderson Environmental Contracting LLC
Project/Site: DOE-Yakima

TestAmerica Job ID: 250-2362-1
SDG: 12-026

General Chemistry

Client Sample ID: Pipe Bedding
Date Collected: 04/27/12 15:00
Date Received: 05/01/12 15:00

Lab Sample ID: 250-2362-1
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.0		0.010	0.010	%			05/02/12 09:32	1
Percent Solids	94		0.010	0.010	%			05/02/12 09:32	1

Client Sample ID: Pit Run Backfill
Date Collected: 04/27/12 15:20
Date Received: 05/01/12 15:00

Lab Sample ID: 250-2362-2
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.4		0.010	0.010	%			05/02/12 09:32	1
Percent Solids	95		0.010	0.010	%			05/02/12 09:32	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 250-4487/1-A
Matrix: Solid
Analysis Batch: 4508

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 4487

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		2500	490	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Benzene	ND		98	20	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Bromobenzene	ND		98	20	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Bromochloromethane	ND		98	24	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Bromodichloromethane	ND		98	15	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Bromoform	ND		490	98	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Bromomethane	ND		490	28	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
2-Butanone (MEK)	ND		980	290	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
n-Butylbenzene	ND		490	51	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
sec-Butylbenzene	ND		98	20	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
tert-Butylbenzene	ND		98	13	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Carbon disulfide	ND		980	38	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Carbon tetrachloride	ND		98	19	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Chlorobenzene	ND		98	19	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Chloroethane	ND		98	22	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Chloroform	ND		98	16	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Chloromethane	ND		490	15	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
2-Chlorotoluene	ND		98	13	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
4-Chlorotoluene	ND		98	18	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
1,2-Dibromo-3-Chloropropane	ND		490	98	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Dibromochloromethane	ND		98	17	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
1,2-Dibromoethane	ND		98	17	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Dibromomethane	ND		98	21	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
1,2-Dichloroethane	ND		98	16	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
1,3-Dichlorobenzene	ND		98	17	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
1,4-Dichlorobenzene	ND		98	28	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Dichlorodifluoromethane	ND		490	25	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
1,1-Dichloroethane	ND		98	19	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
1,1-Dichloroethene	ND		98	16	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
cis-1,2-Dichloroethene	ND		98	28	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
trans-1,2-Dichloroethene	ND		98	20	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
1,2-Dichloropropane	ND		98	16	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
1,3-Dichloropropane	ND		98	17	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
2,2-Dichloropropane	ND		98	17	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
1,1-Dichloropropene	ND		98	15	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
cis-1,3-Dichloropropene	ND		98	17	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
trans-1,3-Dichloropropene	ND		98	15	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Ethylbenzene	ND		98	18	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Hexachlorobutadiene	59.0	J	390	18	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
2-Hexanone	ND		980	220	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Isopropylbenzene	ND		200	35	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
p-Isopropyltoluene	ND		200	11	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
4-Methyl-2-pentanone (MIBK)	ND		490	98	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Methyl tert-butyl ether	ND		98	13	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Methylene Chloride	ND		490	14	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Naphthalene	ND		200	24	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
N-Propylbenzene	ND		98	21	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Styrene	ND		98	18	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
1,1,1,2-Tetrachloroethane	ND		98	18	ug/Kg		05/02/12 16:53	05/03/12 11:07	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 250-4487/1-A
Matrix: Solid
Analysis Batch: 4508

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 4487

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		98	24	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Tetrachloroethene	ND		98	27	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Toluene	ND		98	15	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
1,2,3-Trichlorobenzene	ND		490	98	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
1,2,4-Trichlorobenzene	ND		98	25	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
1,1,1-Trichloroethane	ND		98	21	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
1,1,2-Trichloroethane	ND		98	24	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Trichloroethene	ND		98	21	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Trichlorofluoromethane	ND		98	22	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
1,2,3-Trichloropropane	ND		98	21	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
1,2,4-Trimethylbenzene	ND		98	45	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
1,3,5-Trimethylbenzene	ND		98	24	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
Vinyl chloride	ND		490	98	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
m,p-Xylene	ND		200	35	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
o-Xylene	ND		98	23	ug/Kg		05/02/12 16:53	05/03/12 11:07	1
1,2-Dichlorobenzene	ND		98	14	ug/Kg		05/02/12 16:53	05/03/12 11:07	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*	*05/02/12 16:53*	*05/03/12 11:07*	*1*
4-Bromofluorobenzene (Surr)	*93*		*75 - 125*	*05/02/12 16:53*	*05/03/12 11:07*	*1*
Dibromofluoromethane (Surr)	*96*		*75 - 125*	*05/02/12 16:53*	*05/03/12 11:07*	*1*
Toluene-d8 (Surr)	*102*		*75 - 125*	*05/02/12 16:53*	*05/03/12 11:07*	*1*

Lab Sample ID: LCS 250-4487/2-A
Matrix: Solid
Analysis Batch: 4508

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 4487

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	9470	11500		ug/Kg		121	65 - 150
Benzene	1890	2180		ug/Kg		115	80 - 120
Bromobenzene	1890	1890		ug/Kg		100	80 - 120
Bromochloromethane	1890	2040		ug/Kg		108	80 - 120
Bromodichloromethane	1890	2070		ug/Kg		109	80 - 140
Bromoform	1890	1860		ug/Kg		98	75 - 150
Bromomethane	1890	1990		ug/Kg		105	65 - 130
2-Butanone (MEK)	9470	11300		ug/Kg		119	70 - 125
n-Butylbenzene	1890	1980		ug/Kg		104	80 - 150
sec-Butylbenzene	1890	1960		ug/Kg		103	80 - 135
tert-Butylbenzene	1890	1970		ug/Kg		104	80 - 130
Carbon disulfide	3790	4560		ug/Kg		120	65 - 140
Carbon tetrachloride	1890	2090		ug/Kg		110	70 - 130
Chlorobenzene	1890	2110		ug/Kg		111	80 - 125
Chloroethane	1890	2000		ug/Kg		106	75 - 125
Chloroform	1890	2040		ug/Kg		108	80 - 120
Chloromethane	1890	1950		ug/Kg		103	40 - 150
2-Chlorotoluene	1890	1910		ug/Kg		101	80 - 120
4-Chlorotoluene	1890	1890		ug/Kg		100	80 - 125
1,2-Dibromo-3-Chloropropane	1890	1880		ug/Kg		99	60 - 130
Dibromochloromethane	1890	2000		ug/Kg		105	75 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 250-4487/2-A
Matrix: Solid
Analysis Batch: 4508

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 4487

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane	1890	2120		ug/Kg		112	80 - 125
Dibromomethane	1890	2030		ug/Kg		107	80 - 120
1,2-Dichloroethane	1890	2010		ug/Kg		106	80 - 120
1,3-Dichlorobenzene	1890	1850		ug/Kg		98	80 - 125
1,4-Dichlorobenzene	1890	1830		ug/Kg		97	75 - 120
Dichlorodifluoromethane	1890	2050		ug/Kg		108	75 - 120
1,1-Dichloroethane	1890	2160		ug/Kg		114	80 - 120
1,1-Dichloroethene	1890	2270		ug/Kg		120	75 - 125
cis-1,2-Dichloroethene	1890	2060		ug/Kg		109	75 - 125
trans-1,2-Dichloroethene	1890	2180		ug/Kg		115	75 - 125
1,2-Dichloropropane	1890	2230		ug/Kg		118	80 - 125
1,3-Dichloropropane	1890	2150		ug/Kg		114	75 - 130
2,2-Dichloropropane	1890	2160		ug/Kg		114	70 - 130
1,1-Dichloropropene	1890	2220		ug/Kg		117	80 - 125
cis-1,3-Dichloropropene	1890	2220		ug/Kg		117	80 - 125
trans-1,3-Dichloropropene	1890	2260		ug/Kg		119	65 - 145
Ethylbenzene	1890	2030		ug/Kg		107	80 - 125
Hexachlorobutadiene	1890	2270		ug/Kg		120	80 - 150
2-Hexanone	9470	11500	*	ug/Kg		122	55 - 120
Isopropylbenzene	1890	1990		ug/Kg		105	80 - 130
p-Isopropyltoluene	1890	1960		ug/Kg		104	80 - 120
4-Methyl-2-pentanone (MIBK)	9470	10900		ug/Kg		115	50 - 120
Methyl tert-butyl ether	1890	2010		ug/Kg		106	75 - 125
Methylene Chloride	1890	2040		ug/Kg		108	75 - 125
Naphthalene	1890	2060		ug/Kg		109	80 - 130
N-Propylbenzene	1890	2010		ug/Kg		106	80 - 120
Styrene	1890	2080		ug/Kg		110	80 - 125
1,1,1,2-Tetrachloroethane	1890	2110		ug/Kg		111	80 - 130
1,1,2,2-Tetrachloroethane	1890	1900		ug/Kg		101	70 - 135
Tetrachloroethene	1890	2120		ug/Kg		112	80 - 125
Toluene	1890	2190		ug/Kg		116	80 - 120
1,2,3-Trichlorobenzene	1890	1990		ug/Kg		105	80 - 145
1,2,4-Trichlorobenzene	1890	2060		ug/Kg		109	85 - 150
1,1,1-Trichloroethane	1890	2130		ug/Kg		112	80 - 125
1,1,2-Trichloroethane	1890	2080		ug/Kg		110	80 - 125
Trichloroethene	1890	2120		ug/Kg		112	80 - 125
Trichlorofluoromethane	1890	1920		ug/Kg		101	55 - 150
1,2,3-Trichloropropane	1890	1860		ug/Kg		98	65 - 125
1,2,4-Trimethylbenzene	1890	1960		ug/Kg		104	80 - 135
1,3,5-Trimethylbenzene	1890	1970		ug/Kg		104	80 - 135
Vinyl chloride	1890	560		ug/Kg		30	10 - 140
m,p-Xylene	3790	4080		ug/Kg		108	80 - 120
o-Xylene	1890	1970		ug/Kg		104	80 - 125
1,2-Dichlorobenzene	1890	1890		ug/Kg		100	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*75 - 125*
4-Bromofluorobenzene (Surr)	*98*		*75 - 125*
Dibromofluoromethane (Surr)	*103*		*75 - 125*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 250-4487/2-A
Matrix: Solid
Analysis Batch: 4508

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 4487

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	108		75 - 125

Lab Sample ID: 250-2374-C-25-A MS
Matrix: Solid
Analysis Batch: 4508

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 4487

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	ND		22700	26900		ug/Kg	☼	118	60 - 145
Benzene	ND		4550	5190		ug/Kg	☼	114	80 - 125
Bromobenzene	ND		4550	4540		ug/Kg	☼	100	70 - 130
Bromochloromethane	ND		4550	4740		ug/Kg	☼	104	80 - 130
Bromodichloromethane	ND		4550	4870		ug/Kg	☼	107	80 - 135
Bromoform	ND		4550	4510		ug/Kg	☼	99	70 - 130
Bromomethane	ND		4550	4370		ug/Kg	☼	96	70 - 130
2-Butanone (MEK)	ND		22700	26500		ug/Kg	☼	117	70 - 145
n-Butylbenzene	ND		4550	4770		ug/Kg	☼	105	70 - 140
sec-Butylbenzene	ND		4550	4590		ug/Kg	☼	101	70 - 135
tert-Butylbenzene	ND		4550	4610		ug/Kg	☼	101	80 - 135
Carbon disulfide	ND		9090	10500		ug/Kg	☼	115	70 - 130
Carbon tetrachloride	ND		4550	5090		ug/Kg	☼	112	70 - 125
Chlorobenzene	ND		4550	5050		ug/Kg	☼	111	70 - 130
Chloroethane	ND		4550	4390		ug/Kg	☼	97	70 - 130
Chloroform	ND		4550	4800		ug/Kg	☼	106	80 - 125
Chloromethane	ND		4550	4330		ug/Kg	☼	95	40 - 150
2-Chlorotoluene	ND		4550	4450		ug/Kg	☼	98	80 - 125
4-Chlorotoluene	ND		4550	4440		ug/Kg	☼	98	70 - 130
1,2-Dibromo-3-Chloropropane	ND		4550	4100		ug/Kg	☼	90	60 - 145
Dibromochloromethane	ND		4550	4980		ug/Kg	☼	110	80 - 130
1,2-Dibromoethane	ND		4550	5150		ug/Kg	☼	113	80 - 130
Dibromomethane	ND		4550	4790		ug/Kg	☼	105	75 - 125
1,2-Dichloroethane	ND		4550	4780		ug/Kg	☼	105	75 - 120
1,3-Dichlorobenzene	ND		4550	4370		ug/Kg	☼	96	80 - 130
1,4-Dichlorobenzene	ND		4550	4310		ug/Kg	☼	95	80 - 120
Dichlorodifluoromethane	ND		4550	4600		ug/Kg	☼	101	65 - 135
1,1-Dichloroethane	ND		4550	5090		ug/Kg	☼	112	80 - 125
1,1-Dichloroethene	ND		4550	5330		ug/Kg	☼	117	70 - 130
cis-1,2-Dichloroethene	ND		4550	4900		ug/Kg	☼	108	75 - 120
trans-1,2-Dichloroethene	ND		4550	4960		ug/Kg	☼	109	70 - 130
1,2-Dichloropropane	ND		4550	5270		ug/Kg	☼	116	80 - 130
1,3-Dichloropropane	ND		4550	5050		ug/Kg	☼	111	75 - 130
2,2-Dichloropropane	ND		4550	4970		ug/Kg	☼	109	70 - 130
1,1-Dichloropropene	ND		4550	5450		ug/Kg	☼	120	80 - 125
cis-1,3-Dichloropropene	ND		4550	5420		ug/Kg	☼	119	80 - 130
trans-1,3-Dichloropropene	ND		4550	5540		ug/Kg	☼	122	70 - 145
Ethylbenzene	ND		4550	4820		ug/Kg	☼	106	80 - 125
Hexachlorobutadiene	ND		4550	5110		ug/Kg	☼	112	45 - 150
2-Hexanone	ND	*	22700	27600		ug/Kg	☼	122	65 - 150
Isopropylbenzene	ND		4550	4710		ug/Kg	☼	104	80 - 130
p-Isopropyltoluene	47	J	4550	4610		ug/Kg	☼	100	70 - 140

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-2374-C-25-A MS
Matrix: Solid
Analysis Batch: 4508

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 4487

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Methyl-2-pentanone (MIBK)	ND		22700	26400		ug/Kg	☼	116	60 - 150
Methyl tert-butyl ether	ND		4550	4740		ug/Kg	☼	104	70 - 130
Methylene Chloride	ND		4550	4780		ug/Kg	☼	105	70 - 120
Naphthalene	ND		4550	4610		ug/Kg	☼	101	70 - 130
N-Propylbenzene	ND		4550	4830		ug/Kg	☼	106	70 - 130
Styrene	ND		4550	4920		ug/Kg	☼	108	85 - 120
1,1,1,2-Tetrachloroethane	ND		4550	5190		ug/Kg	☼	114	80 - 130
1,1,2,2-Tetrachloroethane	ND		4550	4470		ug/Kg	☼	98	70 - 130
Tetrachloroethene	ND		4550	5250		ug/Kg	☼	115	75 - 140
Toluene	ND		4550	5210		ug/Kg	☼	115	70 - 130
1,2,3-Trichlorobenzene	ND		4550	4220		ug/Kg	☼	93	70 - 130
1,2,4-Trichlorobenzene	ND		4550	4460		ug/Kg	☼	98	70 - 150
1,1,1-Trichloroethane	ND		4550	5040		ug/Kg	☼	111	80 - 125
1,1,2-Trichloroethane	ND		4550	4980		ug/Kg	☼	110	80 - 130
Trichloroethene	ND		4550	5020		ug/Kg	☼	110	80 - 125
Trichlorofluoromethane	ND		4550	4310		ug/Kg	☼	95	70 - 130
1,2,3-Trichloropropane	ND		4550	4340		ug/Kg	☼	96	70 - 130
1,2,4-Trimethylbenzene	ND		4550	4560		ug/Kg	☼	100	70 - 130
1,3,5-Trimethylbenzene	ND		4550	4600		ug/Kg	☼	101	75 - 140
Vinyl chloride	ND		4550	2020		ug/Kg	☼	44	10 - 140
m,p-Xylene	ND		9090	9590		ug/Kg	☼	105	75 - 135
o-Xylene	ND		4550	4740		ug/Kg	☼	104	70 - 130
1,2-Dichlorobenzene	ND		4550	4520		ug/Kg	☼	99	80 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 125*
4-Bromofluorobenzene (Surr)	*91*		*75 - 125*
Dibromofluoromethane (Surr)	*99*		*75 - 125*
Toluene-d8 (Surr)	*104*		*75 - 125*

Lab Sample ID: 250-2374-C-25-B MSD
Matrix: Solid
Analysis Batch: 4508

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 4487

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	ND		23000	27600		ug/Kg	☼	120	60 - 145	3	25
Benzene	ND		4610	5320		ug/Kg	☼	116	80 - 125	3	25
Bromobenzene	ND		4610	4600		ug/Kg	☼	100	70 - 130	1	25
Bromochloromethane	ND		4610	4840		ug/Kg	☼	105	80 - 130	2	25
Bromodichloromethane	ND		4610	4960		ug/Kg	☼	108	80 - 135	2	25
Bromoform	ND		4610	4570		ug/Kg	☼	99	70 - 130	1	25
Bromomethane	ND		4610	4480		ug/Kg	☼	97	70 - 130	2	25
2-Butanone (MEK)	ND		23000	27100		ug/Kg	☼	118	70 - 145	2	25
n-Butylbenzene	ND		4610	4900		ug/Kg	☼	106	70 - 140	3	25
sec-Butylbenzene	ND		4610	4860		ug/Kg	☼	105	70 - 135	6	25
tert-Butylbenzene	ND		4610	4770		ug/Kg	☼	103	80 - 135	3	25
Carbon disulfide	ND		9210	10700		ug/Kg	☼	116	70 - 130	2	25
Carbon tetrachloride	ND		4610	5180		ug/Kg	☼	112	70 - 125	2	25
Chlorobenzene	ND		4610	5180		ug/Kg	☼	112	70 - 130	3	25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-2374-C-25-B MSD
Matrix: Solid
Analysis Batch: 4508

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 4487

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloroethane	ND		4610	4710		ug/Kg	☼	102	70 - 130	7	25
Chloroform	ND		4610	4880		ug/Kg	☼	106	80 - 125	2	25
Chloromethane	ND		4610	4470		ug/Kg	☼	97	40 - 150	3	25
2-Chlorotoluene	ND		4610	4640		ug/Kg	☼	101	80 - 125	4	25
4-Chlorotoluene	ND		4610	4600		ug/Kg	☼	100	70 - 130	4	25
1,2-Dibromo-3-Chloropropane	ND		4610	4440		ug/Kg	☼	96	60 - 145	8	25
Dibromochloromethane	ND		4610	4890		ug/Kg	☼	106	80 - 130	2	25
1,2-Dibromoethane	ND		4610	5220		ug/Kg	☼	113	80 - 130	1	25
Dibromomethane	ND		4610	4750		ug/Kg	☼	103	75 - 125	1	25
1,2-Dichloroethane	ND		4610	4810		ug/Kg	☼	104	75 - 120	1	25
1,3-Dichlorobenzene	ND		4610	4570		ug/Kg	☼	99	80 - 130	4	25
1,4-Dichlorobenzene	ND		4610	4550		ug/Kg	☼	99	80 - 120	6	25
Dichlorodifluoromethane	ND		4610	4910		ug/Kg	☼	107	65 - 135	7	25
1,1-Dichloroethane	ND		4610	5180		ug/Kg	☼	112	80 - 125	2	25
1,1-Dichloroethene	ND		4610	5430		ug/Kg	☼	118	70 - 130	2	25
cis-1,2-Dichloroethene	ND		4610	4990		ug/Kg	☼	108	75 - 120	2	25
trans-1,2-Dichloroethene	ND		4610	5180		ug/Kg	☼	112	70 - 130	4	25
1,2-Dichloropropane	ND		4610	5320		ug/Kg	☼	116	80 - 130	1	25
1,3-Dichloropropane	ND		4610	5200		ug/Kg	☼	113	75 - 130	3	25
2,2-Dichloropropane	ND		4610	5190		ug/Kg	☼	113	70 - 130	4	25
1,1-Dichloropropene	ND		4610	5490		ug/Kg	☼	119	80 - 125	1	25
cis-1,3-Dichloropropene	ND		4610	5470		ug/Kg	☼	119	80 - 130	1	25
trans-1,3-Dichloropropene	ND		4610	5530		ug/Kg	☼	120	70 - 145	0	25
Ethylbenzene	ND		4610	4970		ug/Kg	☼	108	80 - 125	3	25
Hexachlorobutadiene	ND		4610	5370		ug/Kg	☼	117	45 - 150	5	25
2-Hexanone	ND	*	23000	28300		ug/Kg	☼	123	65 - 150	3	25
Isopropylbenzene	ND		4610	4860		ug/Kg	☼	105	80 - 130	3	25
p-Isopropyltoluene	47	J	4610	4880		ug/Kg	☼	105	70 - 140	6	25
4-Methyl-2-pentanone (MIBK)	ND		23000	26800		ug/Kg	☼	116	60 - 150	1	25
Methyl tert-butyl ether	ND		4610	4840		ug/Kg	☼	105	70 - 130	2	25
Methylene Chloride	ND		4610	4870		ug/Kg	☼	106	70 - 120	2	25
Naphthalene	ND		4610	5110		ug/Kg	☼	111	70 - 130	10	25
N-Propylbenzene	ND		4610	4990		ug/Kg	☼	108	70 - 130	3	25
Styrene	ND		4610	5000		ug/Kg	☼	109	85 - 120	2	25
1,1,1,2-Tetrachloroethane	ND		4610	5130		ug/Kg	☼	111	80 - 130	1	25
1,1,2,2-Tetrachloroethane	ND		4610	4620		ug/Kg	☼	100	70 - 130	3	25
Tetrachloroethene	ND		4610	5330		ug/Kg	☼	116	75 - 140	2	25
Toluene	ND		4610	5360		ug/Kg	☼	116	70 - 130	3	25
1,2,3-Trichlorobenzene	ND		4610	4840		ug/Kg	☼	105	70 - 130	14	25
1,2,4-Trichlorobenzene	ND		4610	4930		ug/Kg	☼	107	70 - 150	10	25
1,1,1-Trichloroethane	ND		4610	5110		ug/Kg	☼	111	80 - 125	1	25
1,1,2-Trichloroethane	ND		4610	5050		ug/Kg	☼	110	80 - 130	1	25
Trichloroethene	ND		4610	5250		ug/Kg	☼	114	80 - 125	4	25
Trichlorofluoromethane	ND		4610	4580		ug/Kg	☼	99	70 - 130	6	25
1,2,3-Trichloropropane	ND		4610	4470		ug/Kg	☼	97	70 - 130	3	25
1,2,4-Trimethylbenzene	ND		4610	4800		ug/Kg	☼	104	70 - 130	5	25
1,3,5-Trimethylbenzene	ND		4610	4840		ug/Kg	☼	105	75 - 140	5	25
Vinyl chloride	ND		4610	1330	F	ug/Kg	☼	29	10 - 140	41	25
m,p-Xylene	ND		9210	9970		ug/Kg	☼	108	75 - 135	4	25
o-Xylene	ND		4610	4840		ug/Kg	☼	105	70 - 130	2	25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-2374-C-25-B MSD
Matrix: Solid
Analysis Batch: 4508

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 4487

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dichlorobenzene	ND		4610	4660		ug/Kg	☼	101	80 - 120	3	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 125*
4-Bromofluorobenzene (Surr)	*95*		*75 - 125*
Dibromofluoromethane (Surr)	*100*		*75 - 125*
Toluene-d8 (Surr)	*107*		*75 - 125*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-110923/1-A
Matrix: Solid
Analysis Batch: 111038

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110923

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		100	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Bis(2-chloroethyl)ether	ND		100	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
2-Chlorophenol	ND		100	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
1,3-Dichlorobenzene	ND		50	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
1,4-Dichlorobenzene	ND		50	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Benzyl alcohol	ND		100	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
1,2-Dichlorobenzene	ND		55	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
2-Methylphenol	ND		100	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
3 & 4 Methylphenol	ND		200	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
N-Nitrosodi-n-propylamine	ND		100	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Hexachloroethane	ND		100	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Nitrobenzene	ND		100	34	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Isophorone	ND		100	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
2-Nitrophenol	ND		100	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
2,4-Dimethylphenol	ND		100	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Benzoic acid	ND		2500	750	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Bis(2-chloroethoxy)methane	ND		100	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
2,4-Dichlorophenol	ND		100	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
1,2,4-Trichlorobenzene	ND		50	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Naphthalene	ND		20	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
4-Chloroaniline	ND		100	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Hexachlorobutadiene	ND		50	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
4-Chloro-3-methylphenol	ND		100	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
2-Methylnaphthalene	ND		20	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Hexachlorocyclopentadiene	ND		100	10	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
2,4,6-Trichlorophenol	ND		150	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
2,4,5-Trichlorophenol	ND		100	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
2-Chloronaphthalene	ND		20	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
2-Nitroaniline	ND		100	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Dimethyl phthalate	ND		100	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Acenaphthylene	ND		20	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
2,6-Dinitrotoluene	ND		100	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
3-Nitroaniline	ND		100	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Acenaphthene	ND		20	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 580-110923/1-A
Matrix: Solid
Analysis Batch: 111038

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110923

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrophenol	ND		1000	200	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
4-Nitrophenol	ND		1000	250	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Dibenzofuran	ND		100	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
2,4-Dinitrotoluene	ND		100	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Diethyl phthalate	28.8	J	200	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
4-Chlorophenyl phenyl ether	ND		100	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Fluorene	ND		20	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
4-Nitroaniline	ND		100	20	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
4,6-Dinitro-2-methylphenol	ND		1000	100	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
N-Nitrosodiphenylamine	ND		50	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
4-Bromophenyl phenyl ether	ND		100	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Hexachlorobenzene	ND		50	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Pentachlorophenol	ND		200	20	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Phenanthrene	ND		20	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Anthracene	ND		20	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Di-n-butyl phthalate	ND		500	50	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Fluoranthene	ND		20	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Pyrene	ND		20	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Butyl benzyl phthalate	ND		200	50	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
3,3'-Dichlorobenzidine	ND		200	30	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Benzo[a]anthracene	ND		20	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Chrysene	ND		25	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Bis(2-ethylhexyl) phthalate	ND		600	50	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Di-n-octyl phthalate	ND		500	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Benzo[a]pyrene	ND		30	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Indeno[1,2,3-cd]pyrene	ND		40	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Dibenz(a,h)anthracene	ND		40	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Benzo[g,h,i]perylene	ND		25	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Carbazole	ND		100	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
1-Methylnaphthalene	ND		30	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Benzo[b]fluoranthene	ND		20	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
Benzo[k]fluoranthene	ND		25	5.0	ug/Kg		05/09/12 10:16	05/10/12 10:33	1
bis (2-chloroisopropyl) ether	ND		250	15	ug/Kg		05/09/12 10:16	05/10/12 10:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol	*93*		*36 - 145*	*05/09/12 10:16*	*05/10/12 10:33*	*1*
Phenol-d5	*127*		*38 - 149*	*05/09/12 10:16*	*05/10/12 10:33*	*1*
Nitrobenzene-d5	*90*		*38 - 141*	*05/09/12 10:16*	*05/10/12 10:33*	*1*
2-Fluorobiphenyl	*85*		*42 - 140*	*05/09/12 10:16*	*05/10/12 10:33*	*1*
2,4,6-Tribromophenol	*75*		*28 - 143*	*05/09/12 10:16*	*05/10/12 10:33*	*1*
Terphenyl-d14	*75*		*42 - 151*	*05/09/12 10:16*	*05/10/12 10:33*	*1*

Lab Sample ID: LCS 580-110923/2-A
Matrix: Solid
Analysis Batch: 111038

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110923

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenol	999	1500	*	ug/Kg		150	66 - 126
Bis(2-chloroethyl)ether	1010	986		ug/Kg		98	57 - 122

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 580-110923/2-A
Matrix: Solid
Analysis Batch: 111038

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110923

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Chlorophenol	1000	1010		ug/Kg		101	65 - 125
1,3-Dichlorobenzene	1000	897		ug/Kg		90	64 - 124
1,4-Dichlorobenzene	1000	920		ug/Kg		92	62 - 132
Benzyl alcohol	1000	1120		ug/Kg		112	42 - 147
1,2-Dichlorobenzene	1000	915		ug/Kg		91	68 - 118
2-Methylphenol	999	1370	*	ug/Kg		137	56 - 121
3 & 4 Methylphenol	998	1620	*	ug/Kg		163	61 - 126
N-Nitrosodi-n-propylamine	998	915		ug/Kg		92	52 - 127
Hexachloroethane	1000	914		ug/Kg		91	56 - 131
Nitrobenzene	1000	1200		ug/Kg		120	59 - 134
Isophorone	1000	1010		ug/Kg		101	53 - 118
2-Nitrophenol	999	1000		ug/Kg		100	58 - 128
2,4-Dimethylphenol	998	1430	*	ug/Kg		143	58 - 133
Benzoic acid	5020	5190		ug/Kg		103	10 - 130
Bis(2-chloroethoxy)methane	1000	975		ug/Kg		97	63 - 128
2,4-Dichlorophenol	998	1300	*	ug/Kg		130	59 - 124
1,2,4-Trichlorobenzene	1000	885		ug/Kg		89	63 - 128
Naphthalene	1000	993		ug/Kg		99	64 - 129
4-Chloroaniline	1000	1180		ug/Kg		118	20 - 181
Hexachlorobutadiene	1000	890		ug/Kg		89	59 - 134
4-Chloro-3-methylphenol	1000	1270		ug/Kg		127	58 - 128
2-Methylnaphthalene	1000	1010		ug/Kg		101	65 - 125
Hexachlorocyclopentadiene	998	809		ug/Kg		81	30 - 132
2,4,6-Trichlorophenol	1010	1160		ug/Kg		116	66 - 131
2,4,5-Trichlorophenol	1010	1120		ug/Kg		111	64 - 124
2-Chloronaphthalene	1000	960		ug/Kg		96	69 - 129
2-Nitroaniline	1000	976		ug/Kg		98	58 - 133
Dimethyl phthalate	1000	948		ug/Kg		95	65 - 125
Acenaphthylene	999	1020		ug/Kg		102	69 - 129
2,6-Dinitrotoluene	1000	1070		ug/Kg		107	65 - 125
3-Nitroaniline	1000	1060		ug/Kg		106	80 - 165
Acenaphthene	1000	1000		ug/Kg		100	65 - 130
2,4-Dinitrophenol	4990	4980		ug/Kg		100	53 - 168
4-Nitrophenol	5010	4510		ug/Kg		90	47 - 172
Dibenzofuran	1000	949		ug/Kg		95	70 - 125
2,4-Dinitrotoluene	1000	1050		ug/Kg		105	57 - 122
Diethyl phthalate	1000	995		ug/Kg		99	64 - 129
4-Chlorophenyl phenyl ether	1000	1060		ug/Kg		106	65 - 130
Fluorene	1000	1030		ug/Kg		102	68 - 128
4-Nitroaniline	1000	864		ug/Kg		86	70 - 150
4,6-Dinitro-2-methylphenol	5000	5180		ug/Kg		104	38 - 143
N-Nitrosodiphenylamine	998	958		ug/Kg		96	88 - 153
4-Bromophenyl phenyl ether	1000	1030		ug/Kg		103	64 - 134
Hexachlorobenzene	1000	938		ug/Kg		94	61 - 136
Pentachlorophenol	999	930		ug/Kg		93	29 - 124
Phenanthrene	1000	978		ug/Kg		98	65 - 125
Anthracene	1000	965		ug/Kg		97	73 - 123
Di-n-butyl phthalate	1000	979		ug/Kg		98	69 - 124
Fluoranthene	1000	1030		ug/Kg		102	61 - 121
Pyrene	1000	1030		ug/Kg		103	54 - 134

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 580-110923/2-A
Matrix: Solid
Analysis Batch: 111038

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110923

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Butyl benzyl phthalate	1000	933		ug/Kg		93	65 - 140
3,3'-Dichlorobenzidine	2000	2100		ug/Kg		105	73 - 163
Benzo[a]anthracene	1000	976		ug/Kg		98	64 - 124
Chrysene	1000	990		ug/Kg		99	71 - 126
Bis(2-ethylhexyl) phthalate	1010	949		ug/Kg		94	64 - 144
Di-n-octyl phthalate	1000	919		ug/Kg		92	58 - 148
Benzo[a]pyrene	1000	982		ug/Kg		98	68 - 128
Indeno[1,2,3-cd]pyrene	1000	1030		ug/Kg		103	59 - 139
Dibenz(a,h)anthracene	999	1010		ug/Kg		101	57 - 142
Benzo[g,h,i]perylene	1000	1000		ug/Kg		100	57 - 142
Carbazole	999	943		ug/Kg		94	88 - 158
1-Methylnaphthalene	1000	999		ug/Kg		100	48 - 148
Benzo[b]fluoranthene	1000	1010		ug/Kg		101	66 - 136
Benzo[k]fluoranthene	1000	1010		ug/Kg		101	63 - 143
bis (2-chloroisopropyl) ether	999	1130		ug/Kg		113	44 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorophenol	*93*		*36 - 145*
Phenol-d5	*118*		*38 - 149*
Nitrobenzene-d5	*88*		*38 - 141*
2-Fluorobiphenyl	*83*		*42 - 140*
2,4,6-Tribromophenol	*84*		*28 - 143*
Terphenyl-d14	*74*		*42 - 151*

Lab Sample ID: 250-2362-1 MS
Matrix: Solid
Analysis Batch: 111038

Client Sample ID: Pipe Bedding
Prep Type: Total/NA
Prep Batch: 110923

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenol	ND	*	1050	1590	F	ug/Kg	☼	151	66 - 126
Bis(2-chloroethyl)ether	ND		1060	1130		ug/Kg	☼	107	57 - 122
2-Chlorophenol	ND		1060	1180		ug/Kg	☼	112	65 - 125
1,3-Dichlorobenzene	ND		1060	909		ug/Kg	☼	86	64 - 124
1,4-Dichlorobenzene	ND		1050	936		ug/Kg	☼	89	62 - 132
Benzyl alcohol	ND		1050	1290		ug/Kg	☼	122	42 - 147
1,2-Dichlorobenzene	ND		1060	962		ug/Kg	☼	91	68 - 118
2-Methylphenol	ND	*	1050	1560	F	ug/Kg	☼	148	56 - 121
3 & 4 Methylphenol	ND	*	1050	1880	F	ug/Kg	☼	179	61 - 126
N-Nitrosodi-n-propylamine	ND		1050	1070		ug/Kg	☼	102	52 - 127
Hexachloroethane	ND		1060	1040		ug/Kg	☼	98	56 - 131
Nitrobenzene	ND		1050	1300		ug/Kg	☼	124	59 - 134
Isophorone	ND		1060	1180		ug/Kg	☼	111	53 - 118
2-Nitrophenol	ND		1050	1100		ug/Kg	☼	104	58 - 128
2,4-Dimethylphenol	ND	*	1050	1540	F	ug/Kg	☼	146	58 - 133
Benzoic acid	ND		5290	1570	J	ug/Kg	☼	30	10 - 130
Bis(2-chloroethoxy)methane	ND		1060	1110		ug/Kg	☼	105	63 - 128
2,4-Dichlorophenol	ND	*	1050	1350	F	ug/Kg	☼	129	59 - 124
1,2,4-Trichlorobenzene	ND		1050	934		ug/Kg	☼	89	63 - 128
Naphthalene	ND		1050	1090		ug/Kg	☼	104	64 - 129

Client: Anderson Environmental Contracting LLC
Project/Site: DOE-Yakima

TestAmerica Job ID: 250-2362-1
SDG: 12-026

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-2362-1 MS
Matrix: Solid
Analysis Batch: 111038

Client Sample ID: Pipe Bedding
Prep Type: Total/NA
Prep Batch: 110923

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Chloroaniline	ND		1050	1240		ug/Kg	☼	118	20 - 181
Hexachlorobutadiene	ND		1060	1010		ug/Kg	☼	96	59 - 134
4-Chloro-3-methylphenol	ND		1060	1270		ug/Kg	☼	120	58 - 128
2-Methylnaphthalene	ND		1060	1070		ug/Kg	☼	101	65 - 125
Hexachlorocyclopentadiene	ND		1050	874		ug/Kg	☼	83	30 - 132
2,4,6-Trichlorophenol	ND		1060	1250		ug/Kg	☼	118	66 - 131
2,4,5-Trichlorophenol	ND		1060	1230		ug/Kg	☼	116	64 - 124
2-Chloronaphthalene	ND		1060	1010		ug/Kg	☼	96	69 - 129
2-Nitroaniline	ND		1050	968		ug/Kg	☼	92	58 - 133
Dimethyl phthalate	ND		1050	1000		ug/Kg	☼	95	65 - 125
Acenaphthylene	ND		1050	1070		ug/Kg	☼	101	69 - 129
2,6-Dinitrotoluene	ND		1050	1090		ug/Kg	☼	104	65 - 125
3-Nitroaniline	ND		1050	1080		ug/Kg	☼	103	80 - 165
Acenaphthene	ND		1060	1050		ug/Kg	☼	100	65 - 130
2,4-Dinitrophenol	ND		5270	4480		ug/Kg	☼	85	53 - 168
4-Nitrophenol	ND		5280	4470		ug/Kg	☼	85	47 - 172
Dibenzofuran	ND		1060	1000		ug/Kg	☼	95	70 - 125
2,4-Dinitrotoluene	ND		1050	1120		ug/Kg	☼	106	57 - 122
Diethyl phthalate	ND		1060	1030		ug/Kg	☼	97	64 - 129
4-Chlorophenyl phenyl ether	ND		1060	1120		ug/Kg	☼	106	65 - 130
Fluorene	ND		1060	1060		ug/Kg	☼	100	68 - 128
4-Nitroaniline	ND		1050	906		ug/Kg	☼	86	70 - 150
4,6-Dinitro-2-methylphenol	ND		5270	5230		ug/Kg	☼	99	38 - 143
N-Nitrosodiphenylamine	ND		1050	1030		ug/Kg	☼	98	88 - 153
4-Bromophenyl phenyl ether	ND		1060	1120		ug/Kg	☼	106	64 - 134
Hexachlorobenzene	ND		1060	1000		ug/Kg	☼	95	61 - 136
Pentachlorophenol	ND		1050	952		ug/Kg	☼	90	29 - 124
Phenanthrene	ND		1050	1050		ug/Kg	☼	100	65 - 125
Anthracene	ND		1050	1020		ug/Kg	☼	96	73 - 123
Di-n-butyl phthalate	ND		1050	1030		ug/Kg	☼	98	69 - 124
Fluoranthene	ND		1060	1070		ug/Kg	☼	101	61 - 121
Pyrene	ND		1060	1070		ug/Kg	☼	102	54 - 134
Butyl benzyl phthalate	ND		1060	958		ug/Kg	☼	91	65 - 140
3,3'-Dichlorobenzidine	ND		2110	2170		ug/Kg	☼	103	73 - 163
Benzo[a]anthracene	ND		1050	1040		ug/Kg	☼	98	64 - 124
Chrysene	ND		1050	1040		ug/Kg	☼	99	71 - 126
Bis(2-ethylhexyl) phthalate	ND		1060	995		ug/Kg	☼	94	64 - 144
Di-n-octyl phthalate	ND		1060	952		ug/Kg	☼	90	58 - 148
Benzo[a]pyrene	ND		1050	1040		ug/Kg	☼	98	68 - 128
Indeno[1,2,3-cd]pyrene	ND		1050	1050		ug/Kg	☼	100	59 - 139
Dibenz(a,h)anthracene	ND		1050	1060		ug/Kg	☼	101	57 - 142
Benzo[g,h,i]perylene	ND		1050	1060		ug/Kg	☼	101	57 - 142
Carbazole	ND		1050	1020		ug/Kg	☼	96	88 - 158
1-Methylnaphthalene	ND		1060	1060		ug/Kg	☼	101	48 - 148
Benzo[b]fluoranthene	ND		1050	1070		ug/Kg	☼	102	66 - 136
Benzo[k]fluoranthene	ND		1060	1080		ug/Kg	☼	103	63 - 143
bis (2-chloroisopropyl) ether	ND		1050	1190		ug/Kg	☼	113	44 - 140

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-2362-1 MS
Matrix: Solid
Analysis Batch: 111038

Client Sample ID: Pipe Bedding
Prep Type: Total/NA
Prep Batch: 110923

Surrogate	MS %Recovery	MS Qualifier	Limits
2-Fluorophenol	80		36 - 145
Phenol-d5	108		38 - 149
Nitrobenzene-d5	85		38 - 141
2-Fluorobiphenyl	82		42 - 140
2,4,6-Tribromophenol	83		28 - 143
Terphenyl-d14	72		42 - 151

Lab Sample ID: 250-2362-1 MSD
Matrix: Solid
Analysis Batch: 111038

Client Sample ID: Pipe Bedding
Prep Type: Total/NA
Prep Batch: 110923

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenol	ND	*	1010	1590	F	ug/Kg	☼	157	66 - 126	0	26
Bis(2-chloroethyl)ether	ND		1020	1190		ug/Kg	☼	116	57 - 122	5	60
2-Chlorophenol	ND		1020	1210		ug/Kg	☼	119	65 - 125	2	27
1,3-Dichlorobenzene	ND		1020	940		ug/Kg	☼	93	64 - 124	3	60
1,4-Dichlorobenzene	ND		1020	1060		ug/Kg	☼	105	62 - 132	13	32
Benzyl alcohol	ND		1020	1280		ug/Kg	☼	126	42 - 147	0	60
1,2-Dichlorobenzene	ND		1020	983		ug/Kg	☼	97	68 - 118	2	60
2-Methylphenol	ND	*	1010	1590	F	ug/Kg	☼	156	56 - 121	2	25
3 & 4 Methylphenol	ND	*	1010	1860	F	ug/Kg	☼	184	61 - 126	1	27
N-Nitrosodi-n-propylamine	ND		1010	1090		ug/Kg	☼	107	52 - 127	1	28
Hexachloroethane	ND		1020	1040		ug/Kg	☼	102	56 - 131	0	60
Nitrobenzene	ND		1020	1220		ug/Kg	☼	120	59 - 134	7	60
Isophorone	ND		1020	1160		ug/Kg	☼	115	53 - 118	1	60
2-Nitrophenol	ND		1010	1040		ug/Kg	☼	103	58 - 128	5	60
2,4-Dimethylphenol	ND	*	1010	1450	F	ug/Kg	☼	143	58 - 133	6	60
Benzoic acid	ND		5090	2340	J	ug/Kg	☼	46	10 - 130	39	60
Bis(2-chloroethoxy)methane	ND		1020	1040		ug/Kg	☼	103	63 - 128	6	60
2,4-Dichlorophenol	ND	*	1010	1330	F	ug/Kg	☼	132	59 - 124	1	60
1,2,4-Trichlorobenzene	ND		1010	866		ug/Kg	☼	85	63 - 128	8	28
Naphthalene	ND		1020	1010		ug/Kg	☼	100	64 - 129	8	26
4-Chloroaniline	ND		1020	1190		ug/Kg	☼	117	20 - 181	5	60
Hexachlorobutadiene	ND		1020	911		ug/Kg	☼	90	59 - 134	10	60
4-Chloro-3-methylphenol	ND		1020	1240		ug/Kg	☼	122	58 - 128	2	27
2-Methylnaphthalene	ND		1020	1010		ug/Kg	☼	99	65 - 125	6	27
Hexachlorocyclopentadiene	ND		1010	802		ug/Kg	☼	79	30 - 132	9	60
2,4,6-Trichlorophenol	ND		1020	1120		ug/Kg	☼	110	66 - 131	11	60
2,4,5-Trichlorophenol	ND		1020	1180		ug/Kg	☼	115	64 - 124	5	60
2-Chloronaphthalene	ND		1020	960		ug/Kg	☼	95	69 - 129	5	25
2-Nitroaniline	ND		1020	950		ug/Kg	☼	94	58 - 133	2	60
Dimethyl phthalate	ND		1020	921		ug/Kg	☼	91	65 - 125	8	60
Acenaphthylene	ND		1010	1000		ug/Kg	☼	99	69 - 129	6	28
2,6-Dinitrotoluene	ND		1020	1020		ug/Kg	☼	100	65 - 125	7	60
3-Nitroaniline	ND		1020	1040		ug/Kg	☼	102	80 - 165	4	60
Acenaphthene	ND		1020	992		ug/Kg	☼	98	65 - 130	6	27
2,4-Dinitrophenol	ND		5070	4400		ug/Kg	☼	87	53 - 168	2	60
4-Nitrophenol	ND		5090	4360		ug/Kg	☼	86	47 - 172	2	33
Dibenzofuran	ND		1020	913		ug/Kg	☼	90	70 - 125	9	60

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-2362-1 MSD
Matrix: Solid
Analysis Batch: 111038

Client Sample ID: Pipe Bedding
Prep Type: Total/NA
Prep Batch: 110923

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4-Dinitrotoluene	ND		1020	1040		ug/Kg	☼	102	57 - 122	7	31
Diethyl phthalate	ND		1020	944		ug/Kg	☼	93	64 - 129	9	26
4-Chlorophenyl phenyl ether	ND		1020	1040		ug/Kg	☼	102	65 - 130	7	60
Fluorene	ND		1020	977		ug/Kg	☼	96	68 - 128	8	31
4-Nitroaniline	ND		1020	802		ug/Kg	☼	79	70 - 150	12	60
4,6-Dinitro-2-methylphenol	ND		5070	5120		ug/Kg	☼	101	38 - 143	2	60
N-Nitrosodiphenylamine	ND		1010	980		ug/Kg	☼	97	88 - 153	5	60
4-Bromophenyl phenyl ether	ND		1020	1050		ug/Kg	☼	104	64 - 134	6	60
Hexachlorobenzene	ND		1020	954		ug/Kg	☼	94	61 - 136	5	60
Pentachlorophenol	ND		1010	896		ug/Kg	☼	88	29 - 124	6	68
Phenanthrene	ND		1020	989		ug/Kg	☼	97	65 - 125	6	28
Anthracene	ND		1020	975		ug/Kg	☼	96	73 - 123	4	27
Di-n-butyl phthalate	ND		1020	970		ug/Kg	☼	96	69 - 124	6	60
Fluoranthene	ND		1020	1030		ug/Kg	☼	101	61 - 121	4	36
Pyrene	ND		1020	1010		ug/Kg	☼	99	54 - 134	6	31
Butyl benzyl phthalate	ND		1020	896		ug/Kg	☼	88	65 - 140	7	60
3,3'-Dichlorobenzidine	ND		2030	2090		ug/Kg	☼	103	73 - 163	4	60
Benzo[a]anthracene	ND		1020	988		ug/Kg	☼	97	64 - 124	5	27
Chrysene	ND		1020	981		ug/Kg	☼	97	71 - 126	6	26
Bis(2-ethylhexyl) phthalate	ND		1020	965		ug/Kg	☼	94	64 - 144	3	60
Di-n-octyl phthalate	ND		1020	908		ug/Kg	☼	89	58 - 148	5	31
Benzo[a]pyrene	ND		1020	954		ug/Kg	☼	94	68 - 128	8	30
Indeno[1,2,3-cd]pyrene	ND		1020	1010		ug/Kg	☼	100	59 - 139	4	29
Dibenz(a,h)anthracene	ND		1010	1010		ug/Kg	☼	99	57 - 142	6	30
Benzo[g,h,i]perylene	ND		1020	992		ug/Kg	☼	98	57 - 142	7	28
Carbazole	ND		1010	958		ug/Kg	☼	94	88 - 158	6	60
1-Methylnaphthalene	ND		1020	982		ug/Kg	☼	97	48 - 148	8	30
Benzo[b]fluoranthene	ND		1020	978		ug/Kg	☼	96	66 - 136	9	31
Benzo[k]fluoranthene	ND		1020	1020		ug/Kg	☼	100	63 - 143	6	31
bis (2-chloroisopropyl) ether	ND		1010	1320		ug/Kg	☼	130	44 - 140	10	60

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2-Fluorophenol	*63*		*36 - 145*
Phenol-d5	*128*		*38 - 149*
Nitrobenzene-d5	*89*		*38 - 141*
2-Fluorobiphenyl	*81*		*42 - 140*
2,4,6-Tribromophenol	*85*		*28 - 143*
Terphenyl-d14	*71*		*42 - 151*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 250-4441/1-A
Matrix: Solid
Analysis Batch: 4509

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 4441

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND		3.8	1.2	mg/Kg		05/02/12 09:23	05/02/12 17:49	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 250-4441/1-A
Matrix: Solid
Analysis Batch: 4509

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 4441

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid)	101		50 - 150	05/02/12 09:23	05/02/12 17:49	1

Lab Sample ID: LCS 250-4441/2-A
Matrix: Solid
Analysis Batch: 4509

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 4441

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Hydrocarbons			24.2	26.0		mg/Kg		107	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene (fid)	113		50 - 150

Lab Sample ID: 250-2362-2 MS
Matrix: Solid
Analysis Batch: 4534

Client Sample ID: Pit Run Backfill
Prep Type: Total/NA
Prep Batch: 4441

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Hydrocarbons	ND		24.4	26.5		mg/Kg	☼	109	65 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
a,a,a-Trifluorotoluene (fid)	96		50 - 150

Lab Sample ID: 250-2362-1 DU
Matrix: Solid
Analysis Batch: 4534

Client Sample ID: Pipe Bedding
Prep Type: Total/NA
Prep Batch: 4441

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Gasoline Range Hydrocarbons	ND			ND		mg/Kg	☼			NC	40

Surrogate	DU %Recovery	DU Qualifier	Limits
a,a,a-Trifluorotoluene (fid)	93		50 - 150

Lab Sample ID: 250-2373-A-3-B DU
Matrix: Solid
Analysis Batch: 4509

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 4441

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Gasoline Range Hydrocarbons	ND			ND		mg/Kg	☼			NC	40

Surrogate	DU %Recovery	DU Qualifier	Limits
a,a,a-Trifluorotoluene (fid)	99		50 - 150

Method: 8081A - Organochlorine Pesticides (GC)

Lab Sample ID: MB 250-4662/1-A
Matrix: Solid
Analysis Batch: 4749

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 4662

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		6.7	3.3	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
4,4'-DDE	ND		6.7	3.3	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
4,4'-DDT	ND		6.7	3.3	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
Aldrin	ND		6.7	3.3	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
alpha-BHC	ND		6.7	3.3	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
alpha-Chlordane	ND		6.7	3.3	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
beta-BHC	ND		6.7	3.3	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
Chlordane (technical)	ND		150	75	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
delta-BHC	ND		6.7	3.3	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
Dieldrin	ND		6.7	3.3	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
Endosulfan I	ND		6.7	3.3	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
Endosulfan II	ND		6.7	3.3	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
Endosulfan sulfate	ND		6.7	3.3	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
Endrin	ND		6.7	3.3	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
Endrin aldehyde	ND		6.7	3.3	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
Endrin ketone	ND		6.7	3.3	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
gamma-BHC (Lindane)	ND		6.7	3.3	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
gamma-Chlordane	ND		6.7	3.3	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
Heptachlor	ND		6.7	3.3	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
Heptachlor epoxide	ND		6.7	3.3	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
Methoxychlor	ND		6.7	3.3	ug/Kg		05/08/12 09:21	05/08/12 14:16	1
Toxaphene	ND		200	100	ug/Kg		05/08/12 09:21	05/08/12 14:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*82*		*30 - 140*	*05/08/12 09:21*	*05/08/12 14:16*	*1*

Lab Sample ID: LCS 250-4662/2-A
Matrix: Solid
Analysis Batch: 4749

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 4662

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4,4'-DDD	33.3	29.0		ug/Kg		87	50 - 130
4,4'-DDE	33.3	28.0		ug/Kg		84	50 - 130
4,4'-DDT	33.3	28.0		ug/Kg		84	50 - 130
Aldrin	33.3	28.6		ug/Kg		86	50 - 130
alpha-BHC	33.3	25.6		ug/Kg		77	50 - 130
alpha-Chlordane	33.3	26.1		ug/Kg		78	50 - 130
beta-BHC	33.3	27.6		ug/Kg		83	50 - 130
delta-BHC	33.3	27.1		ug/Kg		81	50 - 130
Dieldrin	33.3	28.8		ug/Kg		86	50 - 130
Endosulfan I	33.3	28.0		ug/Kg		84	50 - 130
Endosulfan II	33.3	26.2		ug/Kg		79	50 - 130
Endosulfan sulfate	33.3	28.0		ug/Kg		84	50 - 130
Endrin	33.3	28.4		ug/Kg		85	50 - 130
Endrin aldehyde	33.3	24.0		ug/Kg		72	50 - 130
Endrin ketone	33.3	30.6		ug/Kg		92	50 - 130
gamma-BHC (Lindane)	33.3	26.1		ug/Kg		78	50 - 130
gamma-Chlordane	33.3	26.9		ug/Kg		81	50 - 130
Heptachlor	33.3	29.2		ug/Kg		88	50 - 130

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 250-4662/2-A
Matrix: Solid
Analysis Batch: 4749

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 4662

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Heptachlor epoxide			33.3	28.2		ug/Kg		85	50 - 130		
Methoxychlor			33.3	30.5		ug/Kg		92	50 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*82*		*30 - 140*

Lab Sample ID: 250-2362-2 MS
Matrix: Solid
Analysis Batch: 4749

Client Sample ID: Pit Run Backfill
Prep Type: Total/NA
Prep Batch: 4662

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
4,4'-DDD	ND		34.7	35.6		ug/Kg	☼	103	40 - 140		
4,4'-DDE	ND		34.7	36.3		ug/Kg	☼	105	40 - 140		
4,4'-DDT	ND		34.7	32.6		ug/Kg	☼	94	40 - 140		
Aldrin	ND		34.7	25.3	J	ug/Kg	☼	73	40 - 140		
alpha-BHC	ND		34.7	24.4	J	ug/Kg	☼	70	40 - 140		
alpha-Chlordane	ND		34.7	26.5	J	ug/Kg	☼	76	40 - 140		
beta-BHC	ND		34.7	28.2		ug/Kg	☼	81	40 - 140		
delta-BHC	ND		34.7	28.0		ug/Kg	☼	81	40 - 140		
Dieldrin	ND		34.7	29.8		ug/Kg	☼	86	40 - 140		
Endosulfan I	ND		34.7	24.9	J	ug/Kg	☼	72	40 - 140		
Endosulfan II	ND		34.7	24.9	J	ug/Kg	☼	72	40 - 140		
Endosulfan sulfate	ND		34.7	25.8	J	ug/Kg	☼	74	40 - 140		
Endrin	ND		34.7	26.0	J	ug/Kg	☼	75	40 - 140		
Endrin aldehyde	ND		34.7	27.1	J	ug/Kg	☼	78	40 - 140		
Endrin ketone	ND		34.7	30.4		ug/Kg	☼	88	40 - 140		
gamma-BHC (Lindane)	ND		34.7	26.8	J	ug/Kg	☼	77	40 - 140		
gamma-Chlordane	ND		34.7	16.4	J	ug/Kg	☼	47	40 - 140		
Heptachlor	ND		34.7	25.2	J	ug/Kg	☼	73	40 - 140		
Heptachlor epoxide	ND		34.7	28.0		ug/Kg	☼	81	40 - 140		
Methoxychlor	ND		34.7	39.1		ug/Kg	☼	113	40 - 140		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Tetrachloro-m-xylene	*80*		*30 - 140*

Lab Sample ID: 250-2362-2 MSD
Matrix: Solid
Analysis Batch: 4749

Client Sample ID: Pit Run Backfill
Prep Type: Total/NA
Prep Batch: 4662

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4,4'-DDD	ND		35.1	38.8		ug/Kg	☼	110	40 - 140	9	40
4,4'-DDE	ND		35.1	39.7		ug/Kg	☼	113	40 - 140	9	40
4,4'-DDT	ND		35.1	34.9		ug/Kg	☼	99	40 - 140	7	40
Aldrin	ND		35.1	27.2	J	ug/Kg	☼	78	40 - 140	7	40
alpha-BHC	ND		35.1	26.0	J	ug/Kg	☼	74	40 - 140	6	40
alpha-Chlordane	ND		35.1	28.3		ug/Kg	☼	81	40 - 140	7	40
beta-BHC	ND		35.1	30.6		ug/Kg	☼	87	40 - 140	8	40
delta-BHC	ND		35.1	30.6		ug/Kg	☼	87	40 - 140	9	40
Dieldrin	ND		35.1	35.2		ug/Kg	☼	100	40 - 140	17	40

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 250-2362-2 MSD
Matrix: Solid
Analysis Batch: 4749

Client Sample ID: Pit Run Backfill
Prep Type: Total/NA
Prep Batch: 4662

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Endosulfan I	ND		35.1	25.9	J	ug/Kg	☼	74	40 - 140	4	40
Endosulfan II	ND		35.1	26.9	J	ug/Kg	☼	77	40 - 140	8	40
Endosulfan sulfate	ND		35.1	28.9		ug/Kg	☼	82	40 - 140	11	40
Endrin	ND		35.1	28.8		ug/Kg	☼	82	40 - 140	10	40
Endrin aldehyde	ND		35.1	30.8		ug/Kg	☼	88	40 - 140	13	40
Endrin ketone	ND		35.1	31.6		ug/Kg	☼	90	40 - 140	4	40
gamma-BHC (Lindane)	ND		35.1	28.5		ug/Kg	☼	81	40 - 140	6	40
gamma-Chlordane	ND		35.1	17.0	J	ug/Kg	☼	48	40 - 140	4	40
Heptachlor	ND		35.1	27.4	J	ug/Kg	☼	78	40 - 140	8	40
Heptachlor epoxide	ND		35.1	29.8		ug/Kg	☼	85	40 - 140	6	40
Methoxychlor	ND		35.1	39.1		ug/Kg	☼	111	40 - 140	0	40

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*80*		*30 - 140*

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 250-4658/1-A
Matrix: Solid
Analysis Batch: 4755

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 4658

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		33	17	ug/Kg		05/08/12 09:03	05/09/12 12:55	1
PCB-1221	ND		67	33	ug/Kg		05/08/12 09:03	05/09/12 12:55	1
PCB-1232	ND		33	17	ug/Kg		05/08/12 09:03	05/09/12 12:55	1
PCB-1242	ND		33	17	ug/Kg		05/08/12 09:03	05/09/12 12:55	1
PCB-1248	ND		33	17	ug/Kg		05/08/12 09:03	05/09/12 12:55	1
PCB-1254	ND		33	17	ug/Kg		05/08/12 09:03	05/09/12 12:55	1
PCB-1260	ND		33	17	ug/Kg		05/08/12 09:03	05/09/12 12:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*103*		*15 - 150*	*05/08/12 09:03*	*05/09/12 12:55*	*1*

Lab Sample ID: LCS 250-4658/2-A
Matrix: Solid
Analysis Batch: 4755

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 4658

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	167	167		ug/Kg		100	50 - 150
PCB-1260	167	167		ug/Kg		100	50 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*103*		*15 - 150*

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: 250-2362-1 MS
Matrix: Solid
Analysis Batch: 4755

Client Sample ID: Pipe Bedding
Prep Type: Total/NA
Prep Batch: 4658

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	ND		177	175		ug/Kg	☼	99	20 - 150
PCB-1260	ND		177	176		ug/Kg	☼	100	20 - 150

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*103*		*15 - 150*

Lab Sample ID: 250-2362-1 MSD
Matrix: Solid
Analysis Batch: 4755

Client Sample ID: Pipe Bedding
Prep Type: Total/NA
Prep Batch: 4658

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	ND		175	174		ug/Kg	☼	100	20 - 150	0	40
PCB-1260	ND		175	177		ug/Kg	☼	101	20 - 150	1	40

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*103*		*15 - 150*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 250-4628/1-A
Matrix: Solid
Analysis Batch: 4644

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 4628

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C25)	ND		12	1.2	mg/Kg		05/07/12 11:54	05/07/12 16:15	1
RRO (nC25-nC36)	3.50	J	25	2.7	mg/Kg		05/07/12 11:54	05/07/12 16:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*79*		*50 - 150*	*05/07/12 11:54*	*05/07/12 16:15*	*1*

Lab Sample ID: LCS 250-4628/2-A
Matrix: Solid
Analysis Batch: 4644

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 4628

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C25)			124	123		mg/Kg		100	50 - 150
RRO (nC25-nC36)			74.1	72.0		mg/Kg		97	50 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctadecane	*87*		*50 - 150*

Lab Sample ID: 250-2556-A-1-A DU
Matrix: Solid
Analysis Batch: 4644

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 4628

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
DRO (C10-C25)	2.9	J		ND		mg/Kg	☼			NC	40
RRO (nC25-nC36)	ND			ND		mg/Kg	☼			NC	40

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 250-2556-A-1-A DU
Matrix: Solid
Analysis Batch: 4644

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 4628

Surrogate	DU %Recovery	DU Qualifier	Limits
1-Chlorooctadecane	*86*		*50 - 150*

Lab Sample ID: 250-2556-A-2-A DU
Matrix: Solid
Analysis Batch: 4644

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 4628

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
DRO (C10-C25)	3.4	J		ND		mg/Kg	☼				40
RRO (nC25-nC36)	ND			3.66	J	mg/Kg	☼				40

Surrogate	DU %Recovery	DU Qualifier	Limits
1-Chlorooctadecane	*88*		*50 - 150*

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 250-4488/1-A
Matrix: Solid
Analysis Batch: 4498

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 4488

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.49	0.043	mg/Kg		05/02/12 17:21	05/03/12 00:33	10
Arsenic	0.0241	J	0.49	0.0069	mg/Kg		05/02/12 17:21	05/03/12 00:33	10
Cadmium	ND		0.49	0.011	mg/Kg		05/02/12 17:21	05/03/12 00:33	10
Chromium	ND		0.98	0.17	mg/Kg		05/02/12 17:21	05/03/12 00:33	10
Copper	ND		0.98	0.50	mg/Kg		05/02/12 17:21	05/03/12 00:33	10
Nickel	ND		0.98	0.26	mg/Kg		05/02/12 17:21	05/03/12 00:33	10
Lead	ND		0.49	0.085	mg/Kg		05/02/12 17:21	05/03/12 00:33	10
Antimony	ND		0.49	0.015	mg/Kg		05/02/12 17:21	05/03/12 00:33	10
Selenium	ND		0.49	0.020	mg/Kg		05/02/12 17:21	05/03/12 00:33	10
Thallium	ND		0.49	0.054	mg/Kg		05/02/12 17:21	05/03/12 00:33	10
Zinc	1.34	J	4.9	0.70	mg/Kg		05/02/12 17:21	05/03/12 00:33	10

Lab Sample ID: MB 250-4488/1-A
Matrix: Solid
Analysis Batch: 4541

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 4488

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.98	0.0049	mg/Kg		05/02/12 17:21	05/03/12 17:55	10

Lab Sample ID: LCS 250-4488/2-A
Matrix: Solid
Analysis Batch: 4498

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 4488

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Silver			24.2	22.7		mg/Kg		94	80 - 120		
Arsenic			48.3	43.7		mg/Kg		91	80 - 120		
Cadmium			48.3	43.5		mg/Kg		90	80 - 120		
Chromium			48.3	45.0		mg/Kg		93	80 - 120		
Copper			48.3	45.7		mg/Kg		95	80 - 120		

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 250-4488/2-A
Matrix: Solid
Analysis Batch: 4498

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 4488

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nickel	48.3	44.1		mg/Kg		91	80 - 120
Lead	48.3	46.9		mg/Kg		97	80 - 120
Antimony	24.2	21.9		mg/Kg		91	80 - 120
Selenium	48.3	44.3		mg/Kg		92	80 - 120
Thallium	24.2	22.3		mg/Kg		92	80 - 120
Zinc	48.3	43.4		mg/Kg		90	80 - 120

Lab Sample ID: LCS 250-4488/2-A
Matrix: Solid
Analysis Batch: 4541

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 4488

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	24.2	22.1		mg/Kg		92	80 - 120

Lab Sample ID: 250-2362-1 MS
Matrix: Solid
Analysis Batch: 4498

Client Sample ID: Pipe Bedding
Prep Type: Total/NA
Prep Batch: 4488

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	ND		26.4	26.1		mg/Kg	☼	99	75 - 125
Arsenic	1.7	B	52.8	53.1		mg/Kg	☼	97	75 - 125
Cadmium	0.026	J	52.8	51.3		mg/Kg	☼	97	75 - 125
Chromium	13		52.8	68.7		mg/Kg	☼	105	75 - 125
Copper	18		52.8	69.5		mg/Kg	☼	97	75 - 125
Nickel	15		52.8	72.0		mg/Kg	☼	107	75 - 125
Lead	2.6		52.8	55.7		mg/Kg	☼	100	75 - 125
Antimony	0.079	J	26.4	20.0		mg/Kg	☼	75	75 - 125
Selenium	0.072	J	52.8	49.9		mg/Kg	☼	94	75 - 125
Thallium	ND		26.4	25.4		mg/Kg	☼	96	75 - 125
Zinc	46	B	52.8	94.5		mg/Kg	☼	92	75 - 125

Lab Sample ID: 250-2362-1 MS
Matrix: Solid
Analysis Batch: 4541

Client Sample ID: Pipe Bedding
Prep Type: Total/NA
Prep Batch: 4488

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	0.39	J	26.4	27.0		mg/Kg	☼	101	75 - 125

Lab Sample ID: 250-2362-1 MSD
Matrix: Solid
Analysis Batch: 4498

Client Sample ID: Pipe Bedding
Prep Type: Total/NA
Prep Batch: 4488

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Silver	ND		26.4	25.7		mg/Kg	☼	97	75 - 125	2	40
Arsenic	1.7	B	52.8	52.4		mg/Kg	☼	96	75 - 125	1	40
Cadmium	0.026	J	52.8	51.0		mg/Kg	☼	96	75 - 125	1	40
Chromium	13		52.8	67.6		mg/Kg	☼	103	75 - 125	2	40
Copper	18		52.8	68.5		mg/Kg	☼	95	75 - 125	1	40
Nickel	15		52.8	69.6		mg/Kg	☼	103	75 - 125	3	40
Lead	2.6		52.8	54.3		mg/Kg	☼	98	75 - 125	2	40
Antimony	0.079	J	26.4	20.4		mg/Kg	☼	77	75 - 125	2	40

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 250-2362-1 MSD
Matrix: Solid
Analysis Batch: 4498

Client Sample ID: Pipe Bedding
Prep Type: Total/NA
Prep Batch: 4488

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Selenium	0.072	J	52.8	50.1		mg/Kg	☼	95	75 - 125	0	40
Thallium	ND		26.4	25.1		mg/Kg	☼	95	75 - 125	1	40
Zinc	46	B	52.8	92.3		mg/Kg	☼	88	75 - 125	2	40

Lab Sample ID: 250-2362-1 MSD
Matrix: Solid
Analysis Batch: 4541

Client Sample ID: Pipe Bedding
Prep Type: Total/NA
Prep Batch: 4488

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	0.39	J	26.4	29.3		mg/Kg	☼	110	75 - 125	8	40

Method: D2216-80 - Percent Dry Weight (Solids) per ASTM D2216-80

Lab Sample ID: 250-2362-1 DU
Matrix: Solid
Analysis Batch: 4442

Client Sample ID: Pipe Bedding
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Moisture	6.0			5.5		%				10	20
Percent Solids	94			95		%				0.6	20

GC/MS VOA

Prep Batch: 4487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-2362-1	Pipe Bedding	Total/NA	Solid	5030B	
250-2362-2	Pit Run Backfill	Total/NA	Solid	5030B	
250-2374-C-25-A MS	Matrix Spike	Total/NA	Solid	5030B	
250-2374-C-25-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5030B	
LCS 250-4487/2-A	Lab Control Sample	Total/NA	Solid	5030B	
MB 250-4487/1-A	Method Blank	Total/NA	Solid	5030B	

Analysis Batch: 4508

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-2362-1	Pipe Bedding	Total/NA	Solid	8260B	4487
250-2362-2	Pit Run Backfill	Total/NA	Solid	8260B	4487
250-2374-C-25-A MS	Matrix Spike	Total/NA	Solid	8260B	4487
250-2374-C-25-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8260B	4487
LCS 250-4487/2-A	Lab Control Sample	Total/NA	Solid	8260B	4487
MB 250-4487/1-A	Method Blank	Total/NA	Solid	8260B	4487

Analysis Batch: 4656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-2362-1	Pipe Bedding	Total/NA	Solid	8260B	4487

GC/MS Semi VOA

Prep Batch: 110923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-2362-1	Pipe Bedding	Total/NA	Solid	3550B	
250-2362-1 MS	Pipe Bedding	Total/NA	Solid	3550B	
250-2362-1 MSD	Pipe Bedding	Total/NA	Solid	3550B	
250-2362-2	Pit Run Backfill	Total/NA	Solid	3550B	
LCS 580-110923/2-A	Lab Control Sample	Total/NA	Solid	3550B	
MB 580-110923/1-A	Method Blank	Total/NA	Solid	3550B	

Analysis Batch: 111038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-2362-1	Pipe Bedding	Total/NA	Solid	8270C	110923
250-2362-1 MS	Pipe Bedding	Total/NA	Solid	8270C	110923
250-2362-1 MSD	Pipe Bedding	Total/NA	Solid	8270C	110923
250-2362-2	Pit Run Backfill	Total/NA	Solid	8270C	110923
LCS 580-110923/2-A	Lab Control Sample	Total/NA	Solid	8270C	110923
MB 580-110923/1-A	Method Blank	Total/NA	Solid	8270C	110923

GC VOA

Prep Batch: 4441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-2362-1	Pipe Bedding	Total/NA	Solid	5030B	
250-2362-1 DU	Pipe Bedding	Total/NA	Solid	5030B	
250-2362-2	Pit Run Backfill	Total/NA	Solid	5030B	
250-2362-2 MS	Pit Run Backfill	Total/NA	Solid	5030B	
250-2373-A-3-B DU	Duplicate	Total/NA	Solid	5030B	
LCS 250-4441/2-A	Lab Control Sample	Total/NA	Solid	5030B	
MB 250-4441/1-A	Method Blank	Total/NA	Solid	5030B	

GC VOA (Continued)

Analysis Batch: 4509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-2373-A-3-B DU	Duplicate	Total/NA	Solid	NWTPH-Gx	4441
LCS 250-4441/2-A	Lab Control Sample	Total/NA	Solid	NWTPH-Gx	4441
MB 250-4441/1-A	Method Blank	Total/NA	Solid	NWTPH-Gx	4441

Analysis Batch: 4534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-2362-1	Pipe Bedding	Total/NA	Solid	NWTPH-Gx	4441
250-2362-1 DU	Pipe Bedding	Total/NA	Solid	NWTPH-Gx	4441
250-2362-2	Pit Run Backfill	Total/NA	Solid	NWTPH-Gx	4441
250-2362-2 MS	Pit Run Backfill	Total/NA	Solid	NWTPH-Gx	4441

GC Semi VOA

Prep Batch: 4628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-2362-1	Pipe Bedding	Total/NA	Solid	3550B	
250-2362-2	Pit Run Backfill	Total/NA	Solid	3550B	
250-2556-A-1-A DU	Duplicate	Total/NA	Solid	3550B	
250-2556-A-2-A DU	Duplicate	Total/NA	Solid	3550B	
LCS 250-4628/2-A	Lab Control Sample	Total/NA	Solid	3550B	
MB 250-4628/1-A	Method Blank	Total/NA	Solid	3550B	

Analysis Batch: 4644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-2362-1	Pipe Bedding	Total/NA	Solid	NWTPH-Dx	4628
250-2362-2	Pit Run Backfill	Total/NA	Solid	NWTPH-Dx	4628
250-2556-A-1-A DU	Duplicate	Total/NA	Solid	NWTPH-Dx	4628
250-2556-A-2-A DU	Duplicate	Total/NA	Solid	NWTPH-Dx	4628
LCS 250-4628/2-A	Lab Control Sample	Total/NA	Solid	NWTPH-Dx	4628
MB 250-4628/1-A	Method Blank	Total/NA	Solid	NWTPH-Dx	4628

Prep Batch: 4658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-2362-1	Pipe Bedding	Total/NA	Solid	3550B	
250-2362-1 MS	Pipe Bedding	Total/NA	Solid	3550B	
250-2362-1 MSD	Pipe Bedding	Total/NA	Solid	3550B	
250-2362-2	Pit Run Backfill	Total/NA	Solid	3550B	
LCS 250-4658/2-A	Lab Control Sample	Total/NA	Solid	3550B	
MB 250-4658/1-A	Method Blank	Total/NA	Solid	3550B	

Prep Batch: 4662

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-2362-1	Pipe Bedding	Total/NA	Solid	3550B	
250-2362-2	Pit Run Backfill	Total/NA	Solid	3550B	
250-2362-2 MS	Pit Run Backfill	Total/NA	Solid	3550B	
250-2362-2 MSD	Pit Run Backfill	Total/NA	Solid	3550B	
LCS 250-4662/2-A	Lab Control Sample	Total/NA	Solid	3550B	
MB 250-4662/1-A	Method Blank	Total/NA	Solid	3550B	

Analysis Batch: 4748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-2362-2	Pit Run Backfill	Total/NA	Solid	8081A	4662

GC Semi VOA (Continued)

Analysis Batch: 4749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-2362-1	Pipe Bedding	Total/NA	Solid	8081A	4662
250-2362-2 MS	Pit Run Backfill	Total/NA	Solid	8081A	4662
250-2362-2 MSD	Pit Run Backfill	Total/NA	Solid	8081A	4662
LCS 250-4662/2-A	Lab Control Sample	Total/NA	Solid	8081A	4662
MB 250-4662/1-A	Method Blank	Total/NA	Solid	8081A	4662

Analysis Batch: 4755

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-2362-1	Pipe Bedding	Total/NA	Solid	8082	4658
250-2362-1 MS	Pipe Bedding	Total/NA	Solid	8082	4658
250-2362-1 MSD	Pipe Bedding	Total/NA	Solid	8082	4658
250-2362-2	Pit Run Backfill	Total/NA	Solid	8082	4658
LCS 250-4658/2-A	Lab Control Sample	Total/NA	Solid	8082	4658
MB 250-4658/1-A	Method Blank	Total/NA	Solid	8082	4658

Metals

Prep Batch: 4488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-2362-1	Pipe Bedding	Total/NA	Solid	3050B	
250-2362-1 MS	Pipe Bedding	Total/NA	Solid	3050B	
250-2362-1 MSD	Pipe Bedding	Total/NA	Solid	3050B	
250-2362-2	Pit Run Backfill	Total/NA	Solid	3050B	
LCS 250-4488/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 250-4488/1-A	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 4498

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-2362-1	Pipe Bedding	Total/NA	Solid	6020	4488
250-2362-1 MS	Pipe Bedding	Total/NA	Solid	6020	4488
250-2362-1 MSD	Pipe Bedding	Total/NA	Solid	6020	4488
250-2362-2	Pit Run Backfill	Total/NA	Solid	6020	4488
LCS 250-4488/2-A	Lab Control Sample	Total/NA	Solid	6020	4488
MB 250-4488/1-A	Method Blank	Total/NA	Solid	6020	4488

Analysis Batch: 4541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-2362-1	Pipe Bedding	Total/NA	Solid	6020	4488
250-2362-1 MS	Pipe Bedding	Total/NA	Solid	6020	4488
250-2362-1 MSD	Pipe Bedding	Total/NA	Solid	6020	4488
250-2362-2	Pit Run Backfill	Total/NA	Solid	6020	4488
LCS 250-4488/2-A	Lab Control Sample	Total/NA	Solid	6020	4488
MB 250-4488/1-A	Method Blank	Total/NA	Solid	6020	4488

General Chemistry

Analysis Batch: 4442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
250-2362-1	Pipe Bedding	Total/NA	Solid	D2216-80	
250-2362-1 DU	Pipe Bedding	Total/NA	Solid	D2216-80	
250-2362-2	Pit Run Backfill	Total/NA	Solid	D2216-80	

Certification Summary

Client: Anderson Environmental Contracting LLC
Project/Site: DOE-Yakima

TestAmerica Job ID: 250-2362-1
SDG: 12-026

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Portland	Alaska	State Program	10	OR00040
TestAmerica Portland	Alaska (UST)	State Program	10	UST-012
TestAmerica Portland	California	State Program	9	2597
TestAmerica Portland	Oregon	NELAC	10	OR100021
TestAmerica Portland	USDA	Federal		P330-11-00092
TestAmerica Portland	Washington	State Program	10	C586
TestAmerica Seattle	Alaska (UST)	State Program	10	UST-022
TestAmerica Seattle	California	NELAC	9	1115CA
TestAmerica Seattle	Florida	NELAC	4	E871074
TestAmerica Seattle	L-A-B	DoD ELAP		L2236
TestAmerica Seattle	L-A-B	ISO/IEC 17025		L2236
TestAmerica Seattle	Louisiana	NELAC	6	05016
TestAmerica Seattle	Montana (UST)	State Program	8	N/A
TestAmerica Seattle	Oregon	NELAC	10	WA100007
TestAmerica Seattle	USDA	Federal		P330-11-00222
TestAmerica Seattle	Washington	State Program	10	C553

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Method Summary

Client: Anderson Environmental Contracting LLC
Project/Site: DOE-Yakima

TestAmerica Job ID: 250-2362-1
SDG: 12-026

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PRT
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SEA
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC)	NWTPH	TAL PRT
8081A	Organochlorine Pesticides (GC)	SW846	TAL PRT
8082	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL PRT
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL PRT
6020	Metals (ICP/MS)	SW846	TAL PRT
D2216-80	Percent Dry Weight (Solids) per ASTM D2216-80	ASTM	TAL PRT

Protocol References:

ASTM = ASTM International

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PRT = TestAmerica Portland, 9405 SW Nimbus Ave., Beaverton, OR 97008, TEL (503)906-9200

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244
11922 E. First Ave, Spokane, WA 99206-5302
9405 SW Nimbus Ave,Beaverton, OR 97008-7145
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119

Loc: 250
2362

CHAIN OF CUSTODY REPORT

Work Order #:

CLIENT: Anderson Environmental Contracting LLC

REPORT TO: 705 Colorado Street
ADDRESS: Kelso, WA 98626

PHONE: 360-577-9194 FAX: 360-577-9198

PROJECT NAME: DOE-Yakima

PROJECT NUMBER: 12-026

SAMPLED BY: Brett MacDonald

INVOICE TO: AEC

P.O. NUMBER: 12-026

TURNAROUND REQUEST
in Business Days *

Organic & Inorganic Analyses: [10] STD. [7] [5] [4] [3] [2] [1] [<1]

Petroleum Hydrocarbon Analyses: [5] STD. [4] [3] [2] [1] [<1]

[OTHER] Specify:

* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PRESERVATIVE	REQUESTED ANALYSES: TPH-GX	TPH-DX	VOCs 8260B	SVOCs 8270C	Priority Metals (600 + TCLP)	Organochlorine Pesticides 8081	PCBs 8082	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1	Pipe Bedding	4/27/2012 1500		X	X	X	X	X	X	X	S	4		
2	Pit Run Backfill	4/27/2012 1520		X	X	X	X	X	X	X	S	4		
3														
4														
5														
6														
7														
8														
9														
10														

RELEASED BY: Brett MacDonald
PRINT NAME: Brett MacDonald FIRM: AEC DATE: 5/1/2012 TIME: 0900

RECEIVED BY: Brian Mauro
PRINT NAME: Brian Mauro FIRM: TA-P DATE: 5/1/12 TIME: 1026

RELEASED BY: Brian Mauro
PRINT NAME: Brian Mauro FIRM: TAP DATE: 5-1-12 TIME: 1500

RECEIVED BY:
PRINT NAME: FIRM: TAP DATE: 5/1/12 TIME: 1500

ADDITIONAL REMARKS:

TEMP: 4°C

PAGE 1 OF 1

TAL-1000(0408)

5.2°C
IR/PIL

Page 46 of 48

5/11/2012

Login Sample Receipt Checklist

Client: Anderson Environmental Contracting LLC

Job Number: 250-2362-1
SDG Number: 12-026

Login Number: 2362
List Number: 1
Creator: Svabik-Seror, Philip

List Source: TestAmerica Portland

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Anderson Environmental Contracting LLC

Job Number: 250-2362-1
SDG Number: 12-026

Login Number: 2362
List Number: 1
Creator: Gamble, Cathy

List Source: TestAmerica Seattle
List Creation: 05/05/12 10:02 AM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

VALLEY Environmental Laboratory
407 N. 1st St., Suite 3
Yakima, WA 98901
(509) 575 - 3999 Fax: (509) 575 - 3068

Sampled At: DOE Yakima	**Date Reported:** 05/29/12 **Date Collected:** 05/23/12 **Time Collected:** 1:00 PM **Sampled By:** Kelly Kellogg
AEC **Attn: Kelly Kellogg** **705 Colorado St** **Kelso, WA 98626**	**YAK-SP1-5/23** **MLR revised 5/31/12** **Invoice# 21980**

Organochlorine Pesticides and PCB's — **Method:** EPA 8081A — **Matrix:** Soil

VEL Sample #	**52320**				
Sample ID	**SP1**				
Surrogate Standards	**% Recovery**				
DCB EPA 8081A	78.8%	(30-130)			
DCB EPA 8082	84.2%	(30-130)			
Target Compounds Units:	**mg/kg**				
Aldrin	ND@0.01				
alpha-BHC	ND@0.01				
beta-BHC	ND@0.01				
delta-BHC	ND@0.01				
gamma-BHC (Lindane)	ND@0.01				
alpha-Chlordane	ND@0.01				
gamma-Chlordane	ND@0.01				
4,4'-DDD	ND@0.01				
4,4'-DDE	ND@0.01				
4,4'-DDT	ND@0.01				
Dieldrin	ND@0.01				
Endosulfan-I	ND@0.01				
Endosulfan-II	ND@0.01				
Endosulfan sulfate	ND@0.01				
Endrin	ND@0.01				
Endrin aldehyde	ND@0.01				
Endrin ketone	ND@0.01				
Heptachlor	ND@0.01				
Heptachlor epoxide	ND@0.01				
Methoxychlor	ND@0.01				
Toxaphene	ND@0.01				
Date Analyzed:	5/25/2012				
Analyst:	AAL				

ND = None Detected

52320-8080

VALLEY Environmental Laboratory
407 N. 1st St., Suite 3
Yakima, WA 98901
(509) 575 - 3999 Fax: (509) 575 - 3068

EPA Method 8082	**Polychlorinated Biphenyls (PCB's)**				
VEL Sample #	**52320**				
Sample ID	**SP1**				
	Results				
PCBs: **units:**	**mg/kg**				
Aroclor 1016	ND@ 0.1				
Aroclor 1221	ND@ 0.1				
Aroclor 1232	ND@ 0.1				
Aroclor 1242	ND@ 0.1				
Aroclor 1248	ND@ 0.1				
Aroclor 1254	ND@ 0.1				
Aroclor 1260	ND@ 0.1				
Date Analyzed:	5/25/2012				
Analyst:	AAL				

52320-8080

VALLEY Environmental Laboratory
201 East D St.
Yakima, WA 98901
(509) 575 - 3999 Fax: (509) 575 - 3068

Washington State DOE Accredited Lab #C345	**Date Reported:** 05/31/12
	Date Collected: 05/23/12
	Time Collected: 1:00 PM
Sampled At: DOE Yakima	**Sampled By:** Kelly Kellogg
AEC	**YAK-SP1-5/23**
Attn: Kelly Kellogg	
705 Colorado St	**MRL revised 5/31/12** **Invoice#**
Kelso, WA 98626	**21980**

Volatile Organic Chemicals — **Method:** EPA 8260B — **Matrix:** Soil

	VEL Sample #	Sample ID	Units	Limits
	52320	**SP1**	**ppm**	**Limits**
Check Standards - Ave.Recovery:				
1,2-Dichlorobenzene-d4	102.4%			(70-130)
4-Bromofluorobenzene	94.8%			(70-130)
Toluene-d8	97.6%			(70-130)
Dichlorodifluoromethane	ND			0.005
Chloromethane	ND			0.005
Vinyl chloride	ND			0.005
Bromomethane	ND			0.005
Chloroethane	ND			0.005
Acetone	ND			0.025
Acrolein	ND			0.005
1,1-Dichloroethylene	ND			0.005
Methylene chloride	ND			0.025
Acrylonitrile	ND			0.005
trans-1,2-Dichloroethylene	ND			0.005
1,1-Dichloroethane	ND			0.005
Methyl ethyl ketone (MEK)	ND			0.025
cis-1,2-Dichloroethylene	ND			0.005
2,2-Dichloropropane	ND			0.005
Chloroform	ND			0.005
Bromochloromethane	ND			0.005
1,1,1-Trichloroethane	ND			0.005
1,2-Dichloroethane	ND			0.005
1,1-Dichloropropene	ND			0.005
Carbon tetrachloride	ND			0.005
Benzene	ND			0.005
Trichloroethylene	ND			0.005
Date Analyzed:	5/25/2012			
Analyst:	AAL			

ND = None Detected

VALLEY Environmental Laboratory
201 East D St.
Yakima, WA 98901
(509) 575 - 3999 Fax: (509) 575 - 3068

	Volatile Organic Compounds (Continued)				
VEL Sample #	**52320**				
Sample ID	**SP1**				
Units	**ppm**	**Limts**			
1,2-Dichloropropane	ND	0.005			
Dibromomethane	ND	0.005			
Bromodichloromethane	ND	0.005			
cis-1,3-Dichloropropene	ND	0.005			
Toluene	ND	0.005			
trans-1,3-Dichloropropene	ND	0.005			
1,1,2-Trichloroethane	ND	0.005			
1,3-Dichloropropane	ND	0.005			
Dibromochloromethane	ND	0.005			
Tetrachloroethylene	ND	0.005			
1,2-Dibromoethane	ND	0.005			
Chlorobenzene	ND	0.005			
1,1,1,2-Tetrachloroethane	ND	0.005			
Ethylbenzene	ND	0.005			
m,p-Xylene	ND	0.005			
Styrene	ND	0.005			
o-Xylene	ND	0.005			
Bromoform	ND	0.005			
1,1,2,2-Tetrachloroethane	ND	0.005			
1,2,3-Trichloropropane	ND	0.005			
Bromobenzene	ND	0.005			
n-Propylbenzene	ND	0.005			
2-Chlorotoluene	ND	0.005			
4-Chlorotoluene	ND	0.005			
1,3,5-Trimethylbenzene	ND	0.005			
tert-Butylbenzene	ND	0.005			
1,2,4-Trimethylbenzene	ND	0.005			
sec-Butylbenzene	ND	0.005			
1,3-Dichlorobenzene	ND	0.005			
1,4-Dichlorobenzene	ND	0.005			
4-Isopropyltoluene	ND	0.005			
1,2-Dichlorobenzene	ND	0.005			
n-Butylbenzene	ND	0.005			
1,2-Dibromo-3-chloropropane	ND	0.005			
1,2,4-Trichlorobenzene	ND	0.005			
Naphthalene	ND	0.005			
Date Analyzed:	5/25/2012				
Analyst:	AAL				

VALLEY Environmental Laboratory
201 East D St.
Yakima, WA 98901
(509) 575 - 3999 Fax: (509) 575 - 3068

	Volatile Organic Compounds (Continued)				
VEL Sample #	**52320**				
Sample ID	**SP1**				
Units	**ppm**	**Limits**			
1,1,1-Trichloroethane	ND	0.005			
1,1,2,2-Tetrachloroethane	ND	0.005			
1,1-Dichloroethene	ND	0.005			
1,2,3-Trichlorobenzene	ND	0.005			
1,2-Dichloroethane	ND	0.005			
2-hexanone	ND	0.025			
Bromoform	ND	0.005			
Carbon disulfide	ND	0.005			
Chlorobenzene	ND	0.005			
cis-1,2-dichloroethene	ND	0.005			
cis-1,3-Dichloropropene	ND	0.005			
Hexachlorobutadiene	ND	0.005			
Isopropylbenzene	ND	0.005			
Methyl Isobutyl ketone (MIBK)	ND	0.025			
methyl-t-butyl ether (MTBE)	ND	0.005			
p-siopropyltoluene	ND	0.005			
tert-Butylbenzene	ND	0.005			
trans-1,2-Dichloroethene	ND	0.005			
Trichlorofluoromethane	ND	0.005			
Date Analyzed:	5/25/2012				
Analyst:	AAL				

VALLEY Environmental Laboratory

Washington State Certified Lab #153 - DOE Accredited Lab C345

Polynuclear Aromatic Hydrocarbons

Date Collected: 05/23/12	
Lab/Sample No: 153-52320	
Sample Location: DOE Yakima	
	Date Received: 05/23/12
	Date Reported: 05/29/12
	Sample Collected By: Kelly Kellogg

Send Report To:	**SAMPLE COMMENTS** **Matrix: Solids**
AEC **Attn: Kelly Kellogg** **705 Colorado St** **Kelso, WA 98626**	**YAK-SP1-5/23** **mrl revised 5/31/12**

PAH's

DOH#	Analytes	Results	Units	MRL	Trigger	MCL	Method	Analyzed	Analyst
	Acenaphthene	**ND**	mg/kg	0.05			EPA 8270C	05/25/12	AAL
	Acenaphthylene	**ND**	mg/kg	0.05			EPA 8270C	05/25/12	AAL
	Anthracene	**ND**	mg/kg	0.05			EPA 8270C	05/25/12	AAL
	Benzo(a)anthracene	**ND**	mg/kg	0.05			EPA 8270C	05/25/12	AAL
	Benzo(a)pyrene	**ND**	mg/kg	0.05			EPA 8270C	05/25/12	AAL
	Benzo(b)fluoranthene	**ND**	mg/kg	0.05			EPA 8270C	05/25/12	AAL
	Benzo(ghi)perylene	**ND**	mg/kg	0.05			EPA 8270C	05/25/12	AAL
	Benzo(k)fluoranthene	**ND**	mg/kg	0.05			EPA 8270C	05/25/12	AAL
	Chrysene	**ND**	mg/kg	0.05			EPA 8270C	05/25/12	AAL
	Dibenzo(ah)anthracene	**ND**	mg/kg	0.05			EPA 8270C	05/25/12	AAL
	Fluoranthene	**ND**	mg/kg	0.05			EPA 8270C	05/25/12	AAL
	Fluorene	**ND**	mg/kg	0.05			EPA 8270C	05/25/12	AAL
	Indeno(1,2,3-cd)pyrene	**ND**	mg/kg	0.05			EPA 8270C	05/25/12	AAL
	Naphthalene	**ND**	mg/kg	0.05			EPA 8270C	05/25/12	AAL
	Phenanthrene	**ND**	mg/kg	0.05			EPA 8270C	05/25/12	AAL
	Pyrene	**ND**	mg/kg	0.05			EPA 8270C	05/25/12	AAL
	1-MethylNapthalene	**ND**	mg/kg	0.05			EPA 8270C	05/25/12	AAL
	2-MethylNapthalene	**ND**	mg/kg	0.05			EPA 8270C	05/25/12	AAL

MRL (Method Reporting Level): Indicates the minimum reporting level required and obtained by the laboratory (MDL<MRL<SRL).

Trigger: DOH Drinking Water response level. Public Systems in excess of this level must take additional samples.

MCL (maximum contaminant level): Highest level recommended by the federal government for public water systems.

ND (Not Detected): Indicates this compound was analyzed and not detected at a level greater than or equal to the MRL or SRL.

Approved By:

201 East D Street Yakima, WA 98901 509-575-3999 Fax: 509-575-3068

52320-8270pah

VALLEY Environmental Laboratory

Washington State Certified Lab #153 - DOE Accredited Lab C345

PAH's & TPH's

Lab/Sample No: Below	**Date Collected: 05/23/12**	
Date Received: 05/23/12	**Date Reported: 05/29/12**	**Supervisor: BKO**
	Sampled By: Kelly Kellogg	
Sample Location: DOE Yakima		**Invoice#: 21980**

Send Report To:	**Sample Information**	**Matrix: Soil**
AEC **Attn: Kelly Kellogg** **705 Colorado St** **Kelso, WA 98626**		

Polynuclear Aromatic & Petroleum Hydrocarbons

VEL Sample Number:		**15352321**	**15352322**	**15352323**	**15352324**	**15352325**			
Sample ID/Location:		**S1**	**S2**	**S3**	**S4**	**S5**			
Analyte	**Units**	**Results**	**Results**	**Results**	**Results**	**Results**	**Method**	**Date Analyzed**	**Analyst**
TPH-HCID-Dx		NONE	NONE	NONE	NONE	NONE	NWTPH-HCID	05/24/12	DCO
% Surrogate Recovery	%	86.4	93.6	89.1	75.8	79.6	(50-150%)		
Diesel Range	mg/kg	<25	<25	<25	<25	<25	NWTPH-Dx	05/28/12	DCO
PAH's									
Acenaphthene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	EPA 8270C	05/25/12	AAL
Acenaphthylene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	EPA 8270C	05/25/12	AAL
Anthracene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	EPA 8270C	05/25/12	AAL
Benzo(a)anthracene	mg/kg	< 0.01	0.084	0.022	0.160	< 0.01	EPA 8270C	05/25/12	AAL
Benzo(a)pyrene	mg/kg	< 0.01	0.056	<0.01	0.175	< 0.01	EPA 8270C	05/25/12	AAL
Benzo(b)fluoranthene	mg/kg	< 0.01	0.105	0.017	0.293	< 0.01	EPA 8270C	05/25/12	AAL
Benzo(ghi)perylene	mg/kg	< 0.01	0.072	<0.5	0.192	< 0.01	EPA 8270C	05/25/12	AAL
Benzo(k)fluoranthene	mg/kg	< 0.01	0.023	<0.01	0.067	< 0.01	EPA 8270C	05/25/12	AAL
Chrysene	mg/kg	< 0.01	0.084	0.011	0.254	< 0.01	EPA 8270C	05/25/12	AAL
Dibenzo(ah)anthracene	mg/kg	< 0.01	<0.01	<0.01	0.037	< 0.01	EPA 8270C	05/25/12	AAL
Fluoranthene	mg/kg	< 0.01	0.175	0.019	0.435	< 0.01	EPA 8270C	05/25/12	AAL
Fluorene	mg/kg	< 0.01	<0.01	<0.01	<0.01	< 0.01	EPA 8270C	05/25/12	AAL
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.01	0.057	<0.01	0.156	< 0.01	EPA 8270C	05/25/12	AAL
Naphthalene	mg/kg	< 0.01	<0.01	<0.01	<0.01	< 0.01	EPA 8270C	05/25/12	AAL
Phenanthrene	mg/kg	< 0.01	0.090	<0.01	0.224	< 0.01	EPA 8270C	05/25/12	AAL
Pyrene	mg/kg	< 0.01	0.169	0.018	0.413	< 0.01	EPA 8270C	05/25/12	AAL
Terphenyl-d14	%	94.0	94.2	94.0	90.3	94.0	(18-137)	surrogate rec.	

MRL (Method Reporting Level): Indicates the minimum reporting level required and obtained by the laboratory (always >MDL).

Trigger: DOH Drinking Water response level.

MCL (maximum contaminant level): Highest level recommended by the federal government for public water systems.

ND (Not Detected): Indicates this compound was analyzed and not detected at a level greater than or equal to the MRL.

Approved By: _____

VALLEY Environmental Laboratory

Washington State Certified Lab #153 - DOE Accredited Lab C345

Polynuclear Aromatic Hydrocarbons

Date Collected: 06/05/12	
Lab/Sample No: 153-60507	
Sample Location: S-1	
	Date Received: 06/05/12
	Date Reported: 06/12/12
	Sample Collected By: K. Kellogg

Send Report To:	**SAMPLE COMMENTS** **Matrix: Soil**
AEC **Attn: Kelly Kellogg** **705 Colorado St** **Kelso, WA 98626**	**DOE**

Polynuclear Aromatic Hydrocarbons

DOH#	Analytes	Results	Units	MRL	Trigger	MCL	Method	Analyzed	Analyst
	Acenaphthene	**0.023**	mg/kg	0.01			EPA 8270C	06/11/12	AAL
	Acenaphthylene	**ND**	mg/kg	0.01			EPA 8270C	06/11/12	AAL
	Anthracene	**0.031**	mg/kg	0.01			EPA 8270C	06/11/12	AAL
	Benzo(a)anthracene	**0.324**	mg/kg	0.01			EPA 8270C	06/11/12	AAL
	Benzo(a)pyrene	**0.359**	mg/kg	0.01			EPA 8270C	06/11/12	AAL
	Benzo(b)fluoranthene	**0.51**	mg/kg	0.01			EPA 8270C	06/11/12	AAL
	Benzo(ghi)perylene	**0.469**	mg/kg	0.01			EPA 8270C	06/11/12	AAL
	Benzo(k)fluoranthene	**0.512**	mg/kg	0.01			EPA 8270C	06/11/12	AAL
	Chrysene	**0.422**	mg/kg	0.01			EPA 8270C	06/11/12	AAL
	Dibenzo(ah)anthracene	**0.067**	mg/kg	0.01			EPA 8270C	06/11/12	AAL
	Fluoranthene	**0.901**	mg/kg	0.01			EPA 8270C	06/11/12	AAL
	Fluorene	**0.012**	mg/kg	0.01			EPA 8270C	06/11/12	AAL
	Indeno(1,2,3-cd)pyrene	**0.295**	mg/kg	0.01			EPA 8270C	06/11/12	AAL
	Naphthalene	**0.024**	mg/kg	0.01			EPA 8270C	06/11/12	AAL
	Phenanthrene	**0.452**	mg/kg	0.01			EPA 8270C	06/11/12	AAL
	Pyrene	**0.452**	mg/kg	0.01			EPA 8270C	06/11/12	AAL
	2-MethylNapthalene	**0.034**	mg/kg	0.01			EPA 8270C	06/11/12	AAL
	Surrogate Standard	**Recovery**			**Contol Limits**				
	Terphenyl-d14	**128**	%		18-137		EPA 8270C	06/11/12	AAL

MRL (Method Reporting Level): Indicates the minimum reporting level required and obtained by the laboratory (MDL<MRL<SRL).

Trigger: DOH Drinking Water response level. Public Systems in excess of this level must take additional samples. Recommended range on packages.

MCL (maximum contaminant level): Highest level recommended by the federal government for public water systems.

ND (Not Detected): Indicates this compound was analyzed and not detected at a level greater than or equal to the MRL or SRL.

Approved By: _

201 East D Street Yakima, WA 98901 509-575-3999 Fax: 509-575-3068

60507-8270pah

VALLEY Environmental Laboratory

Washington State Certified Lab #153 - DOE Accredited Lab C345

Polynuclear Aromatic Hydrocarbons

Date Collected: 06/05/12	
Lab/Sample No: 153-60508	
Sample Location: S-2	
	Date Received: 06/05/12
	Date Reported: 06/12/12
	Sample Collected By: K. Kellogg

Send Report To:	**SAMPLE COMMENTS** **Matrix: Soil**
AEC **Attn: Kelly Kellogg** **705 Colorado St** **Kelso, WA 98626**	**DOE**

Polynuclear Aromatic Hydrocarbons

DOH#	Analytes	Results	Units	MRL	Trigger	MCL	Method	Analyzed	Analyst
	Acenaphthene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	JAH
	Acenaphthylene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	JAH
	Anthracene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	JAH
	Benzo(a)anthracene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	JAH
	Benzo(a)pyrene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	JAH
	Benzo(b)fluoranthene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	JAH
	Benzo(ghi)perylene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	JAH
	Benzo(k)fluoranthene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	JAH
	Chrysene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	JAH
	Dibenzo(ah)anthracene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	JAH
	Fluoranthene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	JAH
	Fluorene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	JAH
	Indeno(1,2,3-cd)pyrene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	JAH
	Naphthalene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	JAH
	Phenanthrene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	JAH
	Pyrene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	JAH
	2-MethylNapthalene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	JAH
	Surrogate Standard	**Recovery**			**Control Limits**				
	Terphenyl-d14	**112**	%		18-137		EPA 8270C	06/11/12	AAL

MRL (Method Reporting Level): Indicates the minimum reporting level required and obtained by the laboratory (MDL<MRL<SRL).

Trigger: DOH Drinking Water response level. Public Systems in excess of this level must take additional samples. Recommended range on packages.

MCL (maximum contaminant level): Highest level recommended by the federal government for public water systems.

ND (Not Detected): Indicates this compound was analyzed and not detected at a level greater than or equal to the MRL or SRL.

Approved By: 

201 East D Street Yakima, WA 98901 509-575-3999 Fax: 509-575-3068

60508-8270pah

VALLEY Environmental Laboratory

Washington State Certified Lab #153 - DOE Accredited Lab C345

Polynuclear Aromatic Hydrocarbons

Date Collected: 06/05/12	
Lab/Sample No: 153-60509	
Sample Location: S-3	
	Date Received: 06/05/12
	Date Reported: 06/12/12
	Sample Collected By: K. Kellogg

Send Report To:	**SAMPLE COMMENTS** **Matrix: Soil**
AEC **Attn: Kelly Kellogg** **705 Colorado St** **Kelso, WA 98626**	**DOE**

Polynuclear Aromatic Hydrocarbons

DOH#	Analytes	Results	Units	MRL	Trigger	MCL	Method	Analyzed	Analyst
	Acenaphthene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Acenaphthylene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Anthracene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Benzo(a)anthracene	**0.07**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Benzo(a)pyrene	**0.068**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Benzo(b)fluoranthene	**0.071**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Benzo(ghi)perylene	**0.061**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Benzo(k)fluoranthene	**0.049**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Chrysene	**0.068**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Dibenzo(ah)anthracene	**0.011**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Fluoranthene	**0.158**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Fluorene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Indeno(1,2,3-cd)pyrene	**0.053**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Naphthalene	**0.012**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Phenanthrene	**0.079**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Pyrene	**0.143**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	2-MethylNapthalene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Surrogate Standard	**Recovery**			**Control Limits**				
	Terphenyl-d14	**108.4**	%		18-137		EPA 8270C	06/11/12	AAL

MRL (Method Reporting Level): Indicates the minimum reporting level required and obtained by the laboratory (MDL<MRL<SRL).

Trigger: DOH Drinking Water response level. Public Systems in excess of this level must take additional samples. Recommended range on packages.

MCL (maximum contaminant level): Highest level recommended by the federal government for public water systems.

ND (Not Detected): Indicates this compound was analyzed and not detected at a level greater than or equal to the MRL or SRL.

Approved By:

VALLEY Environmental Laboratory

Washington State Certified Lab #153 - DOE Accredited Lab C345

Polynuclear Aromatic Hydrocarbons

Date Collected: 06/05/12	
Lab/Sample No: 153-60510	
Sample Location: S-4	
	Date Received: 06/05/12
	Date Reported: 06/12/12
	Sample Collected By: K. Kellogg

Send Report To:	**SAMPLE COMMENTS** **Matrix: Soil**
AEC **Attn: Kelly Kellogg** **705 Colorado St** **Kelso, WA 98626**	**DOE**

Polynuclear Aromatic Hydrocarbons

DOH#	Analytes	Results	Units	MRL	Trigger	MCL	Method	Analyzed	Analyst
	Acenaphthene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Acenaphthylene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Anthracene	**0.014**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Benzo(a)anthracene	**0.144**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Benzo(a)pyrene	**0.146**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Benzo(b)fluoranthene	**0.208**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Benzo(ghi)perylene	**0.188**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Benzo(k)fluoranthene	**0.138**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Chrysene	**0.181**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Dibenzo(ah)anthracene	**0.025**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Fluoranthene	**0.389**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Fluorene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Indeno(1,2,3-cd)pyrene	**0.12**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Naphthalene	**0.019**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Phenanthrene	**0.176**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Pyrene	**0.364**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	2-MethylNapthalene	**0.025**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Surrogate Standard	**Recovery**			**Control Limits**				
	Terphenyl-d14	**103.1**	%		18-137		EPA 8270C	06/11/12	AAL

MRL (Method Reporting Level): Indicates the minimum reporting level required and obtained by the laboratory (MDL<MRL<SRL).

Trigger: DOH Drinking Water response level. Public Systems in excess of this level must take additional samples. Recommended range on packages.

MCL (maximum contaminant level): Highest level recommended by the federal government for public water systems.

ND (Not Detected): Indicates this compound was analyzed and not detected at a level greater than or equal to the MRL or SRL.

Approved By: _

201 East D Street Yakima, WA 98901 509-575-3999 Fax: 509-575-3068

60510-8270pah

VALLEY Environmental Laboratory

Washington State Certified Lab #153 - DOE Accredited Lab C345

Polynuclear Aromatic Hydrocarbons

Date Collected: 06/05/12	
Lab/Sample No: 153-60511	
Sample Location: S-5	
	Date Received: 06/05/12
	Date Reported: 06/12/12
	Sample Collected By: K. Kellogg

Send Report To:	**SAMPLE COMMENTS** **Matrix: Soil**
AEC **Attn: Kelly Kellogg** **705 Colorado St** **Kelso, WA 98626**	**DOE**

Polynuclear Aromatic Hydrocarbons

DOH#	Analytes	Results	Units	MRL	Trigger	MCL	Method	Analyzed	Analyst
	Acenaphthene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Acenaphthylene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Anthracene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Benzo(a)anthracene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Benzo(a)pyrene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Benzo(b)fluoranthene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Benzo(ghi)perylene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Benzo(k)fluoranthene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Chrysene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Dibenzo(ah)anthracene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Fluoranthene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Fluorene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Indeno(1,2,3-cd)pyrene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Naphthalene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Phenanthrene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Pyrene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	2-MethylNapthalene	**ND**	mg/Kg	0.01			EPA 8270C	06/11/12	AAL
	Surrogate Standard	**Recovery**			**Control Limits**				
	Terphenyl-d14	**92.1**	%		18-137		EPA 8270C	06/11/12	AAL

MRL (Method Reporting Level): Indicates the minimum reporting level required and obtained by the laboratory (MDL<MRL<SRL).

Trigger: DOH Drinking Water response level. Public Systems in excess of this level must take additional samples. Recommended range on packages.

MCL (maximum contaminant level): Highest level recommended by the federal government for public water systems.

ND (Not Detected): Indicates this compound was analyzed and not detected at a level greater than or equal to the MRL or SRL.

Approved By: _ 

201 East D Street Yakima, WA 98901 509-575-3999 Fax: 509-575-3068

60511-8270pah

VALLEY Environmental Laboratory

Washington State Certified Lab #153 - DOE Accredited Lab C345

Polynuclear Aromatic Hydrocarbons

Date Collected: 06/15/12	
Lab/Sample No: 153-61525	
Sample Location: PG1	
	Date Received: 06/15/12
	Date Reported: 06/22/12
	Sample Collected By: Kelly Kellogg

Send Report To:	**SAMPLE COMMENTS** **Matrix: Soil**
AEC **Attn: Kelly Kellogg** **705 Colorado St** **Kelso, WA 98626**	**DOE - 12-026**

Polynuclear Aromatic Hydrocarbons

DOH#	Analytes	Results	Units	MRL	Trigger	MCL	Method	Analyzed	Analyst
	Acenaphthene	**ND**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Acenaphthylene	**ND**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Anthracene	**ND**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Benzo(a)anthracene	**0.056**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Benzo(a)pyrene	**0.047**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Benzo(b)fluoranthene	**0.062**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Benzo(ghi)perylene	**0.052**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Benzo(k)fluoranthene	**0.027**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Chrysene	**0.049**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Dibenzo(ah)anthracene	**0.013**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Fluoranthene	**0.105**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Fluorene	**ND**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Indeno(1,2,3-cd)pyrene	**ND**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Naphthalene	**ND**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Phenanthrene	**0.046**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Pyrene	**0.105**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	2-MethylNapthalene	**ND**	mg/kg	0.01			EPA 8270C	06/20/12	AAL

MRL (Method Reporting Level): Indicates the minimum reporting level required and obtained by the laboratory (MDL<MRL<SRL).

Trigger: DOH Drinking Water response level. Public Systems in excess of this level must take additional samples. Recommended range on packages.

MCL (maximum contaminant level): Highest level recommended by the federal government for public water systems.

ND (Not Detected): Indicates this compound was analyzed and not detected at a level greater than or equal to the MRL or SRL.

Approved By: _

201 East D Street Yakima, WA 98901 509-575-3999 Fax: 509-575-3068

61525-8270pah

VALLEY Environmental Laboratory

Washington State Certified Lab #153 - DOE Accredited Lab C345

Polynuclear Aromatic Hydrocarbons

Date Collected: 06/15/12	
Lab/Sample No: 153-61526	
Sample Location: PG2	
	Date Received: 06/15/12
	Date Reported: 06/22/12
	Sample Collected By: Kelly Kellogg

Send Report To:	**SAMPLE COMMENTS** **Matrix: Water**
AEC **Attn: Kelly Kellogg** **705 Colorado St** **Kelso, WA 98626**	**DOE - 12-026**

Polynuclear Aromatic Hydrocarbons

DOH#	Analytes	Results	Units	MRL	Trigger	MCL	Method	Analyzed	Analyst
	Acenaphthene	**0.012**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Acenaphthylene	**ND**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Anthracene	**0.019**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Benzo(a)anthracene	**0.172**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Benzo(a)pyrene	**0.178**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Benzo(b)fluoranthene	**0.251**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Benzo(ghi)perylene	**0.180**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Benzo(k)fluoranthene	**0.251**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Chrysene	**0.248**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Dibenzo(ah)anthracene	**0.040**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Fluoranthene	**0.483**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Fluorene	**ND**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Indeno(1,2,3-cd)pyrene	**0.148**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Naphthalene	**ND**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Phenanthrene	**0.290**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	Pyrene	**0.448**	mg/kg	0.01			EPA 8270C	06/20/12	AAL
	2-MethylNapthalene	**ND**	mg/kg	0.01			EPA 8270C	06/20/12	AAL

MRL (Method Reporting Level): Indicates the minimum reporting level required and obtained by the laboratory (MDL<MRL<SRL).

Trigger: DOH Drinking Water response level. Public Systems in excess of this level must take additional samples. Recommended range on packages.

MCL (maximum contaminant level): Highest level recommended by the federal government for public water systems.

ND (Not Detected): Indicates this compound was analyzed and not detected at a level greater than or equal to the MRL or SRL.

Approved By: 

201 East D Street Yakima, WA 98901 509-575-3999 Fax: 509-575-3068

61526-8270pah

Appendix G

Performance Testing and Startup Measurements

FRANK WEAR INITIAL LOWER ZONE TESTING - 3 WELLS

DATE/TIME: 6/27/2012 ADJUSTMENT SHEET (Yes/No)? NO TROUBLESHOOT SHEET (Yes/No)? NO

AMBIENT TEMPERATURE (F):	63	
BLOWER INLET VACUUM (in. WC):	46	Keep under 50 in. WC
BLOWER INLET FLOW (CFM):	250	
BLOWER INLET TEMPERATURE (F):	70	
BLOWER DISCHARGE TEMPERATURE (F):	134	Keep under 160 F
BLOWER DISCHARGE TEMPERATURE (F) @ PVC:	122.9	Keep under 140 F, located at steel/PVC transition
VLS VACUUM (in. WC):	37.5	
VLS MOISTURE LEVEL (NA,1st, 2nd, 3rd Float):	NA	If above LSHH or LSH - alarm, see O&M Plan for troubleshooting
160 GALLON TANK WATER LEVEL (Gal):	0	Waste characterization/disposal per O&M Plan
LEAD GAC VACUUM (in. WC):	NM	
LAG GAC VACUUM (in. WC):	NM	
TOTAL INFLUENT PID (ppm):	10.4	Suma Canister Sample: NA
GAC BETWEEN PID (ppm):	NM	Suma Canister Sample: NA
GAC EFFLUENT PID (ppm):	13.5	Suma Canister Sample: NA

NOTES: Note any observations, adjustments, or system issues here.
Ambient temperature significantly lower than inlet temperatures. New HC well approx 3' away from SVE-5 has positive pressure of 0.01" WC. MW-10 has a negative pressure of -2.7" WC.

SVE WELLS - OPERATION MODE (UPPER/LOWER/MIXED): LOWER ZONE - 3 WELLS

	SVE-1		SVE-2		SVE-3		SVE-4		SVE-5	
ZONE	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER
SCREEN INTERVAL (FT from TOC)	12.92 - 7.92	19.92 - 14.92	12.96 - 7.96	19.96 - 14.96	12.95 - 7.95	19.45 - 14.95	13.0 - 8.0	20.0 - 15.0	12.95 - 7.95	19.95 - 14.95
MANIFOLD VACUUM (in WC)						38		38		37
FLOW (CFM)						14		77		118
PID (ppm)						5.6		23		8
TEMPERATURE (F)						68		68		68
WELL HEAD VACUUM (in WC)					0.40	37	0.192	30	0.115	9.3
DTW (FT from TOC)						19.09		20.00		19.93

SUB SLAB DEPRESSURIZATION MONITORING POINTS

	SS-1	SS-2	SS-3	SS-4	SS-5
VACUUM (in. WC):	-0.037	-0.111	-0.036	-0.044	-0.025
CONDITION:	OK	OK	OK	OK	OK

NOTES: Target sub-slab vacuum >= 0.025 in. H20
Ambient Pressure: NM
NM = not measured
TOC = top of casing
bgs = below ground surface

FRANK WEAR INITIAL LOWER ZONE TESTING - 5 WELLS

DATE/TIME: 6/25/2012 ADJUSTMENT SHEET (Yes/No)? NO TROUBLESHOOT SHEET (Yes/No)? NO

AMBIENT TEMPERATURE (F):	82	
BLOWER INLET VACUUM (in. WC):	38	Keep under 50 in. WC
BLOWER INLET FLOW (CFM):	250	
BLOWER INLET TEMPERATURE (F):	85	
BLOWER DISCHARGE TEMPERATURE (F):	145	Keep under 160 F
BLOWER DISCHARGE TEMPERATURE (F) @ PVC:	NM	Keep under 140 F, located at steel/PVC transition
VLS VACUUM (in. WC):	29	
VLS MOISTURE LEVEL (NA,1st, 2nd, 3rd Float):	NA	If above LSHH or LSH - alarm, see O&M Plan for troubleshooting
160 GALLON TANK WATER LEVEL (Gal):	0	Waste characterization/disposal per O&M Plan
LEAD GAC VACUUM (in. WC):	NM	
LAG GAC VACUUM (in. WC):	NM	
TOTAL INFLUENT PID (ppm):	42	Suma Canister Sample: NA
GAC BETWEEN PID (ppm):	NM	Suma Canister Sample: NA
GAC EFFLUENT PID (ppm):	NM	Suma Canister Sample: NA

NOTES: Note any observations, adjustments, or system issues here.
dilution valve closed. Relatively high flow rates from SVE-4 and SVE-5 and low pressure at SVE-5 well head indicates preferential air flow, possibly from nearby MW-10 or other pathways. Pressure/flow testing of pipes on 6/23 indicated no leaks in piping. Pressures measured in upper zone indicate very little flow around upper/lower zone seal.

SVE WELLS - OPERATION MODE (UPPER/LOWER/MIXED): LOWER ZONE - 5 WELLS

	SVE-1		SVE-2		SVE-3		SVE-4		SVE-5	
ZONE	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER
SCREEN INTERVAL (FT from TOC)	12.92 - 7.92	19.92 - 14.92	12.96 - 7.96	19.96 - 14.96	12.95 - 7.95	19.45 - 14.95	13.0 - 8.0	20.0 - 15.0	12.95 - 7.95	19.95 - 14.95
MANIFOLD VACUUM (in WC)		30		28		30		29		28
FLOW (CFM)		25		32.5		13.5		67		115
PID (ppm)		6.5		13.3		4.1		31.4		9.3
TEMPERATURE (F)		82		84		83.1		82.5		81.5
WELL HEAD VACUUM (in WC)	0.06	28	0.25	27	0.26	28	0.16	22	0.11	7
DTW (FT from TOC)		19.84		18.30		19.09		20.00		19.93

SUB SLAB DEPRESSURIZATION MONITORING POINTS

	SS-1	SS-2	SS-3	SS-4	SS-5
VACUUM (in. WC):	-0.036	-0.168	-0.047	-0.040	-0.022
CONDITION:	OK	OK	OK	OK	OK

NOTES: Target sub-slab vacuum >= 0.025 in. H20
Ambient Pressure: NM
NM = not measured
TOC = top of casing
bgs = below ground surface

FRANK WEAR INITIAL UPPER ZONE TESTING - 3 WELLS

DATE/TIME: 6/27/2012 ADJUSTMENT SHEET (Yes/No)? NO TROUBLESHOOT SHEET (Yes/No)? NO

NOTES: Note any observations, adjustments, or system issues here.

AMBIENT TEMPERATURE (F):	NM	
BLOWER INLET VACUUM (in. WC):	31	Keep under 50 in. WC
BLOWER INLET FLOW (CFM):	255	
BLOWER INLET TEMPERATURE (F):	74	
BLOWER DISCHARGE TEMPERATURE (F):	128	Keep under 160 F
BLOWER DISCHARGE TEMPERATURE (F) @ PVC:	122	Keep under 140 F, located at steel/PVC transition
VLS VACUUM (in. WC):	21	
VLS MOISTURE LEVEL (NA,1st, 2nd, 3rd Float):	NA	If above LSHH or LSH - alarm, see O&M Plan for troubleshooting
160 GALLON TANK WATER LEVEL (Gal):	0	Waste characterization/disposal per O&M Plan
LEAD GAC VACUUM (in. WC):	NM	
LAG GAC VACUUM (in. WC):	NM	
TOTAL INFLUENT PID (ppm):	4.9	Suma Canister Sample: NA
GAC BETWEEN PID (ppm):	5.5	Suma Canister Sample: NA
GAC EFFLUENT PID (ppm):	9.6	Suma Canister Sample: NA

TAG #

SVE WELLS - OPERATION MODE (UPPER/LOWER/MIXED): UPPER ZONE - 3 WELLS

	SVE-1		SVE-2		SVE-3		SVE-4		SVE-5	
ZONE	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER
SCREEN INTERVAL (FT from TOC)	12.92 - 7.92	19.92 - 14.92	12.96 - 7.96	19.96 - 14.96	12.95 - 7.95	19.45 - 14.95	13.0 - 8.0	20.0 - 15.0	12.95 - 7.95	19.95 - 14.95
MANIFOLD VACUUM (in WC)					21.0		21.0		21.0	
FLOW (CFM)					64.0		109.0		104.0	
PID (ppm)					5.9		8.1		9.8	
TEMPERATURE (F)					73.8		72.7		72.9	
WELL HEAD VACUUM (in WC)					7.75	1.45	2.30	0.25	4.00	0.125
DTW (FT from TOC)					19.09		20.00		19.93	

SUB SLAB DEPRESSURIZATION MONITORING POINTS

	SS-1	SS-2	SS-3	SS-4	SS-5
VACUUM (in. WC):	-0.065	-0.115	-0.057	-0.050	-0.030
CONDITION:	OK	OK	OK	OK	OK

NOTES: Target sub-slab vacuum >= 0.025 in. H20

Ambient Pressure: NM

NM = not measured

TOC = top of casing

bgs = below ground surface

FRANK WEAR INITIAL UPPER ZONE TESTING - 5 WELLS

DATE/TIME: 6/25/2012 ADJUSTMENT SHEET (Yes/No)? NO TROUBLESHOOT SHEET (Yes/No)? NO

AMBIENT TEMPERATURE (F):	82	
BLOWER INLET VACUUM (in. WC):	22.5	Keep under 50 in. WC
BLOWER INLET FLOW (CFM):	285	
BLOWER INLET TEMPERATURE (F):	87	
BLOWER DISCHARGE TEMPERATURE (F):	130	Keep under 160 F
BLOWER DISCHARGE TEMPERATURE (F) @ PVC:	NM	Keep under 140 F, located at steel/PVC transition
VLS VACUUM (in. WC):	11	
VLS MOISTURE LEVEL (NA,1st, 2nd, 3rd Float):	NA	If above LSHH or LSH - alarm, see O&M Plan for troubleshooting
160 GALLON TANK WATER LEVEL (Gal):	0	Waste characterization/disposal per O&M Plan
LEAD GAC VACUUM (in. WC):	NM	
LAG GAC VACUUM (in. WC):	NM	
TOTAL INFLUENT PID (ppm):	25.4	Suma Canister Sample: NA
GAC BETWEEN PID (ppm):	NM	Suma Canister Sample: NA
GAC EFFLUENT PID (ppm):	NM	Suma Canister Sample: NA

NOTES: Note any observations, adjustments, or system issues here.
Considerably less stress, i.e. vacuum, on the blower at 22.5" WC. Lower zone pressure measurements indicate little bypassing of seals between upper and lower zones.

SVE WELLS - OPERATION MODE (UPPER/LOWER/MIXED): LOWER ZONE - 5 WELLS

	SVE-1		SVE-2		SVE-3		SVE-4		SVE-5	
ZONE	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER
SCREEN INTERVAL (FT from TOC)	12.92 - 7.92	19.92 - 14.92	12.96 - 7.96	19.96 - 14.96	12.95 - 7.95	19.45 - 14.95	13.0 - 8.0	20.0 - 15.0	12.95 - 7.95	19.95 - 14.95
MANIFOLD VACUUM (in WC)	9		9		9		9		9	
FLOW (CFM)	69		40		41		74		66	
PID (ppm)	16.2		10.7		22.8		8.7		18.2	
TEMPERATURE (F)	82.5		82.7		83.2		81.8		81.3	
WELL HEAD VACUUM (in WC)	0.8	0.12	6.5	0.27	3.5	0.6	0.8	0.16	1.5	0.1
DTW (FT from TOC)	19.84		18.30		19.09		20.00		19.93	

SUB SLAB DEPRESSURIZATION MONITORING POINTS

	SS-1	SS-2	SS-3	SS-4	SS-5
VACUUM (in. WC):	-0.054	-0.110	-0.043	-0.060	-0.035
CONDITION:	OK	OK	OK	OK	OK

NOTES: Target sub-slab vacuum >= 0.025 in. H20
Ambient Pressure: NM
NM = not measured
TOC = top of casing
bgs = below ground surface

FRANK WEAR SVE SYSTEM - SYSTEM PERFORMANCE MONITORING RECORD SHEET

DATE/TIME: 7/3/12 1541 ADJUSTMENT SHEET (Yes/No)? No TROUBLESHOOT SHEET (Yes/No)? No

NOTES: Note any observations, adjustments, or system issues here.

55 gallons from testing floats in VLS
Need sub-pump from Home Depot, hose, clipboard, & chair and/or table.
Need more COC's from H&P.
Drained clean water from VLS tank float test in/on secondary containment pad.

AMBIENT TEMPERATURE (F):	77	
BLOWER INLET VACUUM (in. WC):	34	Keep under 50 in. WC
BLOWER INLET FLOW (CFM):	249	
BLOWER INLET TEMPERATURE (F):	83	
BLOWER DISCHARGE TEMPERATURE (F):	132	Keep under 160 F
BLOWER DISCHARGE TEMPERATURE (F) @ PVC:	115	Keep under 140 F, located at steel/PVC transition
VLS VACUUM (in. WC):	21	
VLS MOISTURE LEVEL (NA,1st, 2nd, 3rd Float):	NA	If above LSHH or LSH - alarm, see O&M Plan for troubleshooting
160 GALLON TANK WATER LEVEL (Gal):	55	Waste characterization/disposal per O&M Plan
LEAD GAC VACUUM (in. WC):	23	
LAG GAC VACUUM (in. WC):	29	
TOTAL INFLUENT PID (ppm):	2.8	
GAC BETWEEN PID (ppm):	4.0	
GAC EFFLUENT PID (ppm):	6.0	

	TAG #
Suma Canister Sample:	244
Suma Canister Sample:	307
Suma Canister Sample:	Taken, not recorded

← Need to chart Results

SVE WELLS - OPERATION MODE (UPPER/LOWER/MIXED): 3, 4, 5 UPPER ZONE

	SVE-1		SVE-2		SVE-3		SVE-4		SVE-5	
ZONE	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER
SCREEN INTERVAL (FT from TOC)	12.92 - 7.92	19.92 - 14.92	12.96 - 7.96	19.96 - 14.96	12.95 - 7.95	19.45 - 14.95	13.0 - 8.0	20.0 - 15.0	12.95 - 7.95	19.95 - 14.95
MANIFOLD VACUUM (in WC)					18	X	19	X	17	X
FLOW (CFM)					63	X	111	X	99	X
PID (ppm)					4.3	X	10.3	X	7.0	X
TEMPERATURE (F)					76.3	X	77.8	X	78.3	X
WELL HEAD VACUUM (in WC)					-7.647	+0.011	-2.276	-0.028	-3.965	-0.132
DTW (FT from TOC)					18.45	X	19.32	X	19.425	X

SUB SLAB DEPRESSURIZATION MONITORING POINTS

	SS-1	SS-2	SS-3	SS-4	SS-5
VACUUM (in. WC):	-0.066	-0.115	-0.050	-0.043	-0.033
CONDITION:	OK	OK	OK	OK	OK

NOTES: Target sub-slab vacuum = 0.005 in. H20
Ambient Pressure: Not Recorded

TOC = top of casing
bgs = below ground surface

FRANK WEAR SVE SYSTEM - SYSTEM PERFORMANCE MONITORING RECORD SHEET

DATE/TIME: 07/12/2012 14:10 ADJUSTMENT SHEET (Yes/No)? NO TROUBLESHOOT SHEET (Yes/No)? NO

NOTES: Note any observations, adjustments, or system issues here.
WATER LEVEL IN 160 GALLON TANK IS FROM FLOAT SYSTEM TESTING. WATER WILL BE REMOVED USING SUBMERSSIBLE PUMP.

AMBIENT TEMPERATURE (F):	96.2	
BLOWER INLET VACUUM (in. WC):	31.0	Keep under 50 in. WC
BLOWER INLET FLOW (CFM):	258.2	
BLOWER INLET TEMPERATURE (F):	92.0	
BLOWER DISCHARGE TEMPERATURE (F):	142.2	Keep under 160 F
BLOWER DISCHARGE TEMPERATURE (F) @ PVC:	141.1	Keep under 140 F, located at steel/PVC transition
VLS VACUUM (in. WC):	20.2	
VLS MOISTURE LEVEL (NA,1st, 2nd, 3rd Float):	N/A	If above LSHH or LSH - alarm, see O&M Plan for troubleshooting
160 GALLON TANK WATER LEVEL (Gal):	43	Waste characterization/disposal per O&M Plan
LEAD GAC VACUUM (in. WC):	22.0	
LAG GAC VACUUM (in. WC):	~~32.0~~ 28.0	
TOTAL INFLUENT PID (ppm):	2.7	Suma Canister Sample: N/A (TAG #)
GAC BETWEEN PID (ppm):	4.3	Suma Canister Sample: N/A
GAC EFFLUENT PID (ppm):	6.6	Suma Canister Sample: N/A

SVE WELLS - OPERATION MODE (UPPER/LOWER/MIXED): UPPER ZONE 3, 4, & 5

	SVE-1		SVE-2		SVE-3		SVE-4		SVE-5	
ZONE	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER
SCREEN INTERVAL (FT from TOC)	12.92 - 7.92	19.92 - 14.92	12.96 - 7.96	19.96 - 14.96	12.95 - 7.95	19.45 - 14.95	13.0 - 8.0	20.0 - 15.0	12.95 - 7.95	19.95 - 14.95
MANIFOLD VACUUM (in WC)					22	X	21.2		21.9	
FLOW (CFM)					64.1	X	105.2	X	98.1	X
PID (ppm)					5.3	X	5.7	X	4.6	X
TEMPERATURE (F)					94.3	X	92.6	X	92.4	X
WELL HEAD VACUUM (in WC)					-7.580	-0.013	-2.357	-0.016	-3.874	-0.288
DTW (FT from TOC)					17.2	X	18.0	X	18.9	X

SUB SLAB DEPRESSURIZATION MONITORING POINTS

	SS-1	SS-2	SS-3	SS-4	SS-5
VACUUM (in. WC):	-0.078	-0.131	-0.063	-0.059	-0.043
CONDITION:	OK	OK	OK	OK	OK

NOTES: Target sub-slab vacuum = 0.005 in. H20
Ambient Pressure: NOT RECORDED

TOC = top of casing
bgs = below ground surface

Jaso - Shura

FRANK WEAR SVE SYSTEM - SYSTEM ADJUSTMENT RECORD SHEET

DATE/TIME: July 17 2012 14:00 @ 264.75 hrs restart

NOTES: Note any observations, adjustments, or system issues here.

Alarms
Auxiliary
E-STOP

100 Service disconnect Tripped
↳ flipped both fuses
Cleared Alarms
E-stop

AMBIENT TEMPERATURE (F):	88 92	returned to phone
BLOWER INLET VACUUM (in. WC):	Ø -30	Keep under 50 in. WC
BLOWER INLET FLOW (CFM):	— ?	
BLOWER INLET TEMPERATURE (F):	100 100	
BLOWER DISCHARGE TEMPERATURE (F):	98 195	Keep under 160 F
BLOWER DISCHARGE TEMPERATURE (F) @ PVC:	— —	Keep under 140 F, located at steel/PVC transition
VLS VACUUM (in. WC):	Ø -20	
VLS MOISTURE LEVEL (NA,1st, 2nd, 3rd Float):	NA NA	If above LSHH or LSH - alarm, see O&M Plan for troubleshooting
160 GALLON TANK WATER LEVEL (Gal):	Ø Ø	Waste characterization/disposal per O&M Plan
LEAD GAC VACUUM (in. WC):	Ø -24 (?)	
LAG GAC VACUUM (in. WC):	Ø -34 (?)	
TOTAL INFLUENT PID (ppm):	— —	Suma Canister Sample: TAG # — —
GAC BETWEEN PID (ppm):	— —	Suma Canister Sample: — —
GAC EFFLUENT PID (ppm):	— —	Suma Canister Sample: — —

SVE WELLS - OPERATION MODE (UPPER/LOWER/MIXED): 5, 4, & 3

	SVE-1		SVE-2		SVE-3		SVE-4		SVE-5	
ZONE	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER
SCREEN INTERVAL (FT from TOC)	12.92 - 7.92	19.92 - 14.92	12.96 - 7.96	19.96 - 14.96	12.95 - 7.95	19.45 - 14.95	13.0 - 8.0	20.0 - 15.0	12.95 - 7.95	19.95 - 14.95
MANIFOLD VACUUM (in WC)	Ø Ø	Ø Ø	Ø ~~Ø~~	Ø Ø	Ø -16	Ø Ø	Ø -17	Ø Ø	Ø -16	Ø Ø
FLOW (CFM)										
PID (ppm)										
TEMPERATURE (F)			Did	not	collect					
WELL HEAD VACUUM (in WC)										
DTW (FT from TOC)										

SUB SLAB DEPRESSURIZATION MONITORING POINTS

	SS-1	SS-2	SS-3	SS-4	SS-5
VACUUM (in. WC):					
CONDITION:		Did not collect			

NOTES: Target sub-slab vacuum = 0.005 in. H20
Ambient Pressure: _____

TOC = top of casing
bgs = below ground surface

FRANK WEAR SVE SYSTEM - SYSTEM PERFORMANCE MONITORING RECORD SHEET

DATE/TIME: July 18, 2012 0850 @274.88 @275.89 @284.71

ADJUSTMENT SHEET (Yes/No)? _____ TROUBLESHOOT SHEET (Yes/No)? _____

NOTES: Note any observations, adjustments, or system issues here.

System down
- Auxiliary alarm

service disconnects → ON

Trouble shoot
- reset cleared alarm

Record
T_5 - five min after startup
T_{60} - 60 min after startup
T_{445} - 445 min after startup 18:45

	T_0	T_5	T_{60}	T_{445}
AMBIENT TEMPERATURE (F):	73	73	77	74
BLOWER INLET VACUUM (in. WC):	0	-34	-32	-30
BLOWER INLET FLOW (CFM):	-	?	?	?
BLOWER INLET TEMPERATURE (F):	88	80	84	88
BLOWER DISCHARGE TEMPERATURE (F):	86	125	137	151
BLOWER DISCHARGE TEMPERATURE (F) @ PVC:	-	-		
VLS VACUUM (in. WC):	0	-22	-21	-20
VLS MOISTURE LEVEL (NA,1st, 2nd, 3rd Float):	NA	NA	NA	NA
160 GALLON TANK WATER LEVEL (Gal):	0	0	0	0
LEAD GAC VACUUM (in. WC):	0	-23	-23	-22
LAG GAC VACUUM (in. WC):	0	-29	-29	-28
TOTAL INFLUENT PID (ppm):	-		-	
GAC BETWEEN PID (ppm):	-	-	-	
GAC EFFLUENT PID (ppm):	-	-	-	

Keep under 50 in. WC
Keep under 160 F
Keep under 140 F, located at steel/PVC transition
If above ALSHH or ASHH - alarm, see O&M Plan for troubleshooting
Waste characterization/disposal per O&M Plan

TAG #
Suma Canister Sample: —
Suma Canister Sample: —
Suma Canister Sample: —

SVE WELLS - OPERATION MODE (UPPER/LOWER/MIXED): 5, 4, & 3

	SVE-1		SVE-2		SVE-3		SVE-4		SVE-5	
ZONE	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER
SCREEN INTERVAL (FT from TOC)	12.92 - 7.92	19.92 - 14.92	12.96 - 7.96	19.96 - 14.96	12.95 - 7.95	19.45 - 14.95	13.0 - 8.0	20.0 - 15.0	12.95 - 7.95	19.95 - 14.95
MANIFOLD VACUUM (in WC)	T_0 0 T_5 0	0 0	0 0	0 0	0 -19	0 0	0 -19.5	0 0	0 -19	0 0
~~FLOW~~	T_0 0	0	0	0	-18.5	0	-19	0	-19	0
PID (ppm)										
TEMPERATURE (F)										
WELL HEAD VACUUM (in WC)										
DTW (FT from TOC)										

SUB SLAB DEPRESSURIZATION MONITORING POINTS

	SS-1	SS-2	SS-3	SS-4	SS-5
VACUUM (in. WC):					
CONDITION:		None Taken			

NOTES: Target sub-slab vacuum = 0.005 in. H20
Ambient Pressure: _____

TOC = top of casing
bgs = below ground surface

FRANK WEAR SVE SYSTEM - SYSTEM PERFORMANCE MONITORING RECORD SHEET

DATE/TIME: July 19, 2012 0815 @285.98 @286.47

ADJUSTMENT SHEET (Yes/No)? _____ TROUBLESHOOT SHEET (Yes/No)? _____

NOTES: Note any observations, adjustments, or system issues here.

	T_0	T_5	T_{765}	T_{775}
AMBIENT TEMPERATURE (F):	68	68	88	88
BLOWER INLET VACUUM (in. WC):	0	-32	0	-31.5
BLOWER INLET FLOW (CFM):	-	-	-	-
BLOWER INLET TEMPERATURE (F):	85	80	88	85
BLOWER DISCHARGE TEMPERATURE (F):	84	123	88	123
BLOWER DISCHARGE TEMPERATURE (F) @ PVC:	-	-	-	
VLS VACUUM (in. WC):	0	-21	0	-21
VLS MOISTURE LEVEL (NA,1st, 2nd, 3rd Float):	NA	NA	NA	
160 GALLON TANK WATER LEVEL (Gal):	0	0	0	
LEAD GAC VACUUM (in. WC):	0	-23	0	-23
LAG GAC VACUUM (in. WC):	0	-29	0	-28.5
TOTAL INFLUENT PID (ppm):				
GAC BETWEEN PID (ppm):	NA			
GAC EFFLUENT PID (ppm):				

Keep under 50 in. WC

Keep under 160 F

Keep under 140 F, located at steel/PVC transition

If above LSHH or LSH - alarm, see O&M Plan for troubleshooting

Waste characterization/disposal per O&M Plan

Suma Canister Sample: TAG #

Suma Canister Sample: NA

Suma Canister Sample:

Alarm
Auxiliary
Trouble shoot
Reset
Service disconnect ON

T_{765}
Alarm
Auxiliary
Trouble shoot
Reset
Service disconnect ON

SVE WELLS - OPERATION MODE (UPPER/LOWER/MIXED): 5, 7, & 3

	SVE-1		SVE-2		SVE-3		SVE-4		SVE-5	
ZONE	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER
SCREEN INTERVAL (FT from TOC)	12.92 - 7.92	19.92 - 14.92	12.96 - 7.96	19.96 - 14.96	12.95 - 7.95	19.45 - 14.95	13.0 - 8.0	20.0 - 15.0	12.95 - 7.95	19.95 - 14.95
MANIFOLD VACUUM (in WC)	0, 0, 0, 0	0, 0, 0, 0	0, 0, 0, 0	0, 0, 0, 0	0, -19, 0, -19.5	0, 0, 0, 0	0, -19.5, 0, -19	0, 0, 0, 0	0, -19, 0, -19	0, 0, 0, 0
FLOW (CFM)										
PID (ppm)										
TEMPERATURE (F)										
WELL HEAD VACUUM (in WC)										
DTW (FT from TOC)										

SUB SLAB DEPRESSURIZATION MONITORING POINTS

	SS-1	SS-2	SS-3	SS-4	SS-5
VACUUM (in. WC):			NA		
CONDITION:					

NOTES: Target sub-slab vacuum = 0.005 in. H20

Ambient Pressure: _____

TOC = top of casing

bgs = below ground surface

FRANK WEAR SVE SYSTEM - SYSTEM ADJUSTMENT RECORD SHEET

DATE/TIME: July 23, 2012 0835

NOTES: Note any observations, adjustments, or system issues here.

	@ 287.58		@ 287.87
	Ie	Tio	T_{540}
AMBIENT TEMPERATURE (F):	55+	55+	81 81
BLOWER INLET VACUUM (in. WC):	Ø	-33	Keep under 50 in. WC
BLOWER INLET FLOW (CFM):	-	-	
BLOWER INLET TEMPERATURE (F):	76	70	84 92
BLOWER DISCHARGE TEMPERATURE (F):	73	117	Keep under 160 F
BLOWER DISCHARGE TEMPERATURE (F) @ PVC:	-	-	Keep under 140 F, located at steel/PVC transition
VLS VACUUM (in. WC):	Ø	-21.5	Ø -24
VLS MOISTURE LEVEL (NA,1st, 2nd, 3rd Float):	NA	NA	If above LSH or LSH - alarm, see O&M Plan for troubleshooting
160 GALLON TANK WATER LEVEL (Gal):	Ø	Ø	Waste characterization/disposal per O&M Plan
LEAD GAC VACUUM (in. WC):	Ø	-24	Ø -23
LAG GAC VACUUM (in. WC):	Ø	-30	Ø -29
TOTAL INFLUENT PID (ppm):			Suma Canister Sample:
GAC BETWEEN PID (ppm):	NA		Suma Canister Sample:
GAC EFFLUENT PID (ppm):			Suma Canister Sample:

TAG #

NA

To Alarm Auxiliary — Trouble shoot — Reset

T_{540} Alarm Auxiliary — To Troubleshoot — Reset

SVE WELLS - OPERATION MODE (UPPER/LOWER/MIXED): 5, 4, & 3

	SVE-1		SVE-2		SVE-3		SVE-4		SVE-5	
ZONE	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER
SCREEN INTERVAL (FT from TOC)	12.92 - 7.92	19.92 - 14.92	12.96 - 7.96	19.96 - 14.96	12.95 - 7.95	19.45 - 14.95	13.0 - 8.0	20.0 - 15.0	12.95 - 7.95	19.95 - 14.95
MANIFOLD VACUUM (in WC)	Ø, Ø, Ø	Ø, Ø, Ø	Ø, Ø, Ø	Ø, Ø, Ø	Ø, -19, Ø	Ø, Ø, Ø	Ø, -20, Ø	Ø, Ø, Ø	Ø, -19, Ø	Ø, Ø, Ø
FLOW (CFM)	Ø	Ø	Ø	Ø	-18.5	Ø	-19	Ø	-18.5	Ø
PID (ppm)										
TEMPERATURE (F)										
WELL HEAD VACUUM (in WC)										
DTW (FT from TOC)										

SUB SLAB DEPRESSURIZATION MONITORING POINTS

	SS-1	SS-2	SS-3	SS-4	SS-5
VACUUM (in. WC):			NA		
CONDITION:					

NOTES: Target sub-slab vacuum = 0.005 in. H20
Ambient Pressure: _____

TOC = top of casing
bgs = below ground surface

FRANK WEAR SVE SYSTEM - SYSTEM PERFORMANCE MONITORING RECORD SHEET

DATE/TIME: July 24, 2012 0845 ADJUSTMENT SHEET (Yes/No)? _____ TROUBLESHOOT SHEET (Yes/No)? _____

e289.28 e289.57

T0 T570

NOTES: Note any observations, adjustments, or system issues here.

AMBIENT TEMPERATURE (F):	~60	88	
BLOWER INLET VACUUM (in. WC):	0	0	Keep under 50 in. WC
BLOWER INLET FLOW (CFM):	-	-	
BLOWER INLET TEMPERATURE (F):	76	87	
BLOWER DISCHARGE TEMPERATURE (F):	75	86	Keep under 160 F
BLOWER DISCHARGE TEMPERATURE (F) @ PVC:	-	-	Keep under 140 F, located at steel/PVC transition
VLS VACUUM (in. WC):	0	0	
VLS MOISTURE LEVEL (NA,1st, 2nd, 3rd Float):	NA	NA	If above LSHH or LSH - alarm, see O&M Plan for troubleshooting
160 GALLON TANK WATER LEVEL (Gal):	0	0	Waste characterization/disposal per O&M Plan
LEAD GAC VACUUM (in. WC):	0	0	
LAG GAC VACUUM (in. WC):	0	0	
TOTAL INFLUENT PID (ppm):			
GAC BETWEEN PID (ppm):			
GAC EFFLUENT PID (ppm):			

TAG #

Suma Canister Sample: /

Suma Canister Sample: /

Suma Canister Sample: /

T0
Alarm
Auxiliary
Troubleshoot
↳ reset

T570
Alarm
Auxiliary
Troubleshoot
↳ modify pressure switch wiring per KJ instructions
↳ reset

Note: Sensaphone message "A power alarm exists, it is now on."
↳ sensaphone on 'standby'

SVE WELLS - OPERATION MODE (UPPER/LOWER/MIXED): _____

	SVE-1		SVE-2		SVE-3		SVE-4		SVE-5	
ZONE	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER
SCREEN INTERVAL (FT from TOC)	12.92 - 7.92	19.92 - 14.92	12.96 - 7.96	19.96 - 14.96	12.95 - 7.95	19.45 - 14.95	13.0 - 8.0	20.0 - 15.0	12.95 - 7.95	19.95 - 14.95
MANIFOLD VACUUM (in WC)	0, 0	0, 0	0, 0	0, 0	0, 0	0, 0	0, 0	0, 0	0, 0	0, 0
FLOW (CFM)										
PID (ppm)										
TEMPERATURE (F)										
WELL HEAD VACUUM (in WC)										
DTW (FT from TOC)										

SUB SLAB DEPRESSURIZATION MONITORING POINTS

	SS-1	SS-2	SS-3	SS-4	SS-5
VACUUM (in. WC):					
CONDITION:					

NOTES: Target sub-slab vacuum = 0.005 in. H20

Ambient Pressure: _____

TOC = top of casing

bgs = below ground surface

FRANK WEAR SVE SYSTEM - SYSTEM PERFORMANCE MONITORING RECORD SHEET

DATE/TIME: July 25, 2012 0900 ADJUSTMENT SHEET (Yes/No)? _____ TROUBLESHOOT SHEET (Yes/No)? _____

	@ 30393	@ 312.12	
AMBIENT TEMPERATURE (F):	68	90	NOTES: Note any observations, adjustments, or system issues here.
BLOWER INLET VACUUM (in. WC):	-31.5	-30.5	Keep under 50 in. WC
BLOWER INLET FLOW (CFM):	-	425	
BLOWER INLET TEMPERATURE (F):	80	98	
BLOWER DISCHARGE TEMPERATURE (F):	135	152	Keep under 160 F
BLOWER DISCHARGE TEMPERATURE (F) @ PVC:	-	-	Keep under 140 F, located at steel/PVC transition
VLS VACUUM (in. WC):	-21	-20	
VLS MOISTURE LEVEL (NA,1st, 2nd, 3rd Float):	NA	NA	If above LSHH or LSH - alarm, see O&M Plan for troubleshooting
160 GALLON TANK WATER LEVEL (Gal):	0	0	Waste characterization/disposal per O&M Plan
LEAD GAC VACUUM (in. WC):	-23	-22	
LAG GAC VACUUM (in. WC):	-29	-28	
TOTAL INFLUENT PID (ppm):			Suma Canister Sample:
GAC BETWEEN PID (ppm):			Suma Canister Sample:
GAC EFFLUENT PID (ppm):			Suma Canister Sample:

TAG #

SVE WELLS - OPERATION MODE (UPPER/LOWER/MIXED): _____

	SVE-1		SVE-2		SVE-3		SVE-4		SVE-5	
ZONE	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER
SCREEN INTERVAL (FT from TOC)	12.92 - 7.92	19.92 - 14.92	12.96 - 7.96	19.96 - 14.96	12.95 - 7.95	19.45 - 14.95	13.0 - 8.0	20.0 - 15.0	12.95 - 7.95	19.95 - 14.95
MANIFOLD VACUUM (in WC)	0, 0	0, 0	0, 0	0, 0	-19, -18	0, 0	-19, -19	0, 0	-19, -18	0, 0
FLOW (CFM)										
PID (ppm)										
TEMPERATURE (F)										
WELL HEAD VACUUM (in WC)										
DTW (FT from TOC)										

SUB SLAB DEPRESSURIZATION MONITORING POINTS

	SS-1	SS-2	SS-3	SS-4	SS-5
VACUUM (in. WC):					
CONDITION:					

NOTES: Target sub-slab vacuum = 0.005 in. H20
Ambient Pressure: _____

TOC = top of casing
bgs = below ground surface

FRANK WEAR SVE SYSTEM - SYSTEM PERFORMANCE MONITORING RECORD SHEET

DATE/TIME: July 26, 2012 0800 @ 326.94

ADJUSTMENT SHEET (Yes/No)? _____ TROUBLESHOOT SHEET (Yes/No)? _____

NOTES: Note any observations, adjustments, or system issues here.

AMBIENT TEMPERATURE (F):	66	
BLOWER INLET VACUUM (in. WC):	-32	Keep under 50 in. WC
BLOWER INLET FLOW (~~CFM~~):	1.75	
BLOWER INLET TEMPERATURE (F):	80	
BLOWER DISCHARGE TEMPERATURE (F):	135	Keep under 160 F
BLOWER DISCHARGE TEMPERATURE (F) @ PVC:	-	Keep under 140 F, located at steel/PVC transition
VLS VACUUM (in. WC):	-21	
VLS MOISTURE LEVEL (NA,1st, 2nd, 3rd Float):	NA	If above LSHH or LSH - alarm, see O&M Plan for troubleshooting
160 GALLON TANK WATER LEVEL (Gal):	0	Waste characterization/disposal per O&M Plan
LEAD GAC VACUUM (in. WC):	-23	
LAG GAC VACUUM (in. WC):	-29	
TOTAL INFLUENT PID (ppm):	/	
GAC BETWEEN PID (ppm):	/	
GAC EFFLUENT PID (ppm):	/	

TAG #

Suma Canister Sample: /

Suma Canister Sample:

Suma Canister Sample:

SVE WELLS - OPERATION MODE (UPPER/LOWER/MIXED): _____

	SVE-1		SVE-2		SVE-3		SVE-4		SVE-5	
ZONE	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER
SCREEN INTERVAL (FT from TOC)	12.92 - 7.92	19.92 - 14.92	12.96 - 7.96	19.96 - 14.96	12.95 - 7.95	19.45 - 14.95	13.0 - 8.0	20.0 - 15.0	12.95 - 7.95	19.95 - 14.95
MANIFOLD VACUUM (in WC)	0	0	0	0	-19	0	-19.5	0	-19	0
FLOW (CFM)										
PID (ppm)										
TEMPERATURE (F)										
WELL HEAD VACUUM (in WC)										
DTW (FT from TOC)										

SUB SLAB DEPRESSURIZATION MONITORING POINTS

	SS-1	SS-2	SS-3	SS-4	SS-5
VACUUM (in. WC):					
CONDITION:					

NOTES: Target sub-slab vacuum = 0.005 in. H20

Ambient Pressure: _____

TOC = top of casing

bgs = below ground surface

Josh Hopp

FRANK WEAR SVE SYSTEM - SYSTEM ADJUSTMENT RECORD SHEET

DATE/TIME: 9-12-12 | 1445

NOTES: Note any observations, adjustments, or system issues here.

AMBIENT TEMPERATURE (F):	90	
BLOWER INLET VACUUM (in. WC):	-32	Keep under 50 in. WC
BLOWER INLET FLOW ~~(CFM)~~:	~1	
BLOWER INLET TEMPERATURE (F):	87	
BLOWER DISCHARGE TEMPERATURE (F):	139	Keep under 160 F
BLOWER DISCHARGE TEMPERATURE (F) @ PVC:	—	Keep under 140 F, located at steel/PVC transition
VLS VACUUM (in. WC):	-21	
VLS MOISTURE LEVEL (NA,1st, 2nd, 3rd Float):	NA	If above LSHH or LSH - alarm, see O&M Plan for troubleshooting
160 GALLON TANK WATER LEVEL (Gal):	0	Waste characterization/disposal per O&M Plan
LEAD GAC VACUUM (in. WC):	-23.5	
LAG GAC VACUUM (in. WC):	-29	
TOTAL INFLUENT PID (ppm):	—	TAG #
GAC BETWEEN PID (ppm):	—	Suma Canister Sample: see COC + final lab report
GAC EFFLUENT PID (ppm):	—	Suma Canister Sample:
		Suma Canister Sample:

SVE WELLS - OPERATION MODE (UPPER/LOWER/MIXED): 3,4,5 - upper zone

	SVE-1		SVE-2		SVE-3		SVE-4		SVE-5	
ZONE	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER
SCREEN INTERVAL (FT from TOC)	12.92 - 7.92	19.92 - 14.92	12.96 - 7.96	19.96 - 14.96	12.95 - 7.95	19.45 - 14.95	13.0 - 8.0	20.0 - 15.0	12.95 - 7.95	19.95 - 14.95
MANIFOLD VACUUM (in WC)	0	0	0	0	-19	0	-20	0	-19.5	0
FLOW (CFM)					67.1		109.50		103.70	[illegible]
PID (ppm)										
TEMPERATURE (F)					90.8		91.5		94.2	[illegible]
WELL HEAD VACUUM (in WC)										
DTW (FT from TOC)										

SUB SLAB DEPRESSURIZATION MONITORING POINTS

	SS-1	SS-2	SS-3	SS-4	SS-5
VACUUM (in. WC):	0.110	0.162	0.087	0.079	0.062
CONDITION:	New	New	New	New	New

NOTES: Target sub-slab vacuum = 0.005 in. H20
Ambient Pressure: 0.045

TOC = top of casing
bgs = below ground surface

→ New Vapor Pins Installed on 9-12-12 in AM.
Previous SS probes w/ plastic tubing were abandoned using neat cement to match existing cover.
Hart Crowser onsite today for GWM activities — says DTW = ~14' bgs.

FRANK WEAR SVE SYSTEM - SYSTEM ADJUSTMENT RECORD SHEET

DATE/TIME: 9/25/12 12:45

NOTES: Note any observations, adjustments, or system issues here.

AMBIENT TEMPERATURE (F):	82	
BLOWER INLET VACUUM (in. WC):	-32	Keep under 50 in. WC
BLOWER INLET FLOW (CFM):	1.75 in H_2O Δ 246 - 248 cfm @ 91°F	
BLOWER INLET TEMPERATURE (F):	84	
BLOWER DISCHARGE TEMPERATURE (F):	139	Keep under 160 F
BLOWER DISCHARGE TEMPERATURE (F) @ PVC:	—	Keep under 140 F, located at steel/PVC transition
VLS VACUUM (in. WC):	-21	
VLS MOISTURE LEVEL (NA,1st, 2nd, 3rd Float):	NA	If above LSHH or LSH - alarm, see O&M Plan for troubleshooting
160 GALLON TANK WATER LEVEL (Gal):	NA	Waste characterization/disposal per O&M Plan
LEAD GAC VACUUM (in. WC):	-23	
LAG GAC VACUUM (in. WC):	-29	
TOTAL INFLUENT PID (ppm):		Suma Canister Sample: TAG # Influent
GAC BETWEEN PID (ppm):		Suma Canister Sample: Inbtwn
GAC EFFLUENT PID (ppm):		Suma Canister Sample: effluent

SVE WELLS - OPERATION MODE (UPPER/LOWER/MIXED): upper

	SVE-1		SVE-2		SVE-3		SVE-4		SVE-5	
ZONE	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER
SCREEN INTERVAL (FT from TOC)	12.92 - 7.92	19.92 - 14.92	12.96 - 7.96	19.96 - 14.96	12.95 - 7.95	19.45 - 14.95	13.0 - 8.0	20.0 - 15.0	12.95 - 7.95	19.95 - 14.95
MANIFOLD VACUUM (in WC)					-19		-20		-19.5	
FLOW (CFM)					24-36		28-32		28.5-30	
PID (ppm)					—		—		—	
TEMPERATURE (F)					88.5		87		84.2	
WELL HEAD VACUUM (in WC)					-7.88		-2.46		-4.07	
DTW (FT from TOC)					13.97		14.27		14.80	

SUB SLAB DEPRESSURIZATION MONITORING POINTS

	~~SS-1~~ N-side	~~SS-2~~ S-side	SS-3	SS-4	SS-5
VACUUM (in. WC):	-0.072	-0.056			
CONDITION:					

NOTES: Target sub-slab vacuum = 0.005 in. H20
Ambient Pressure: _____

TOC = top of casing
bgs = below ground surface

Appendix H

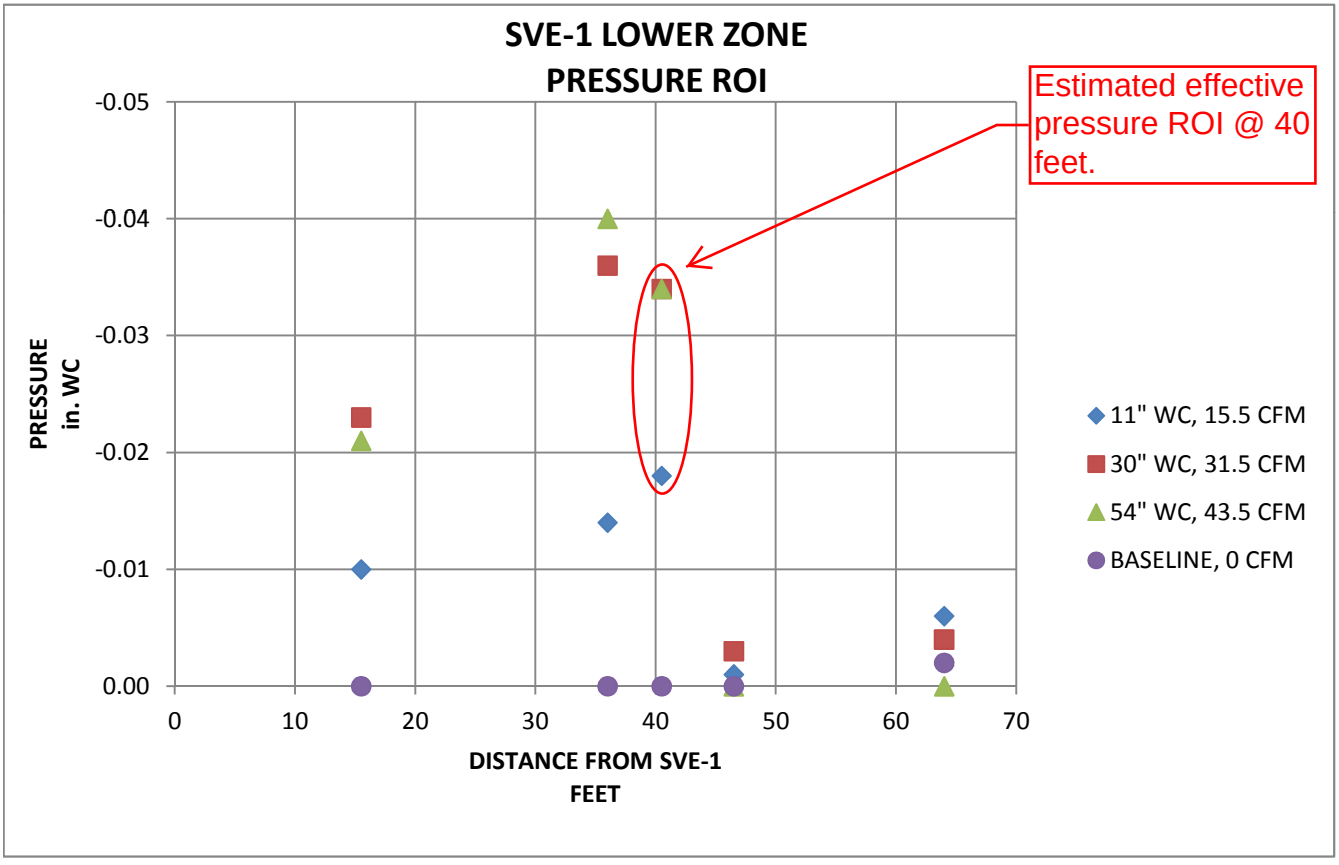
Pressure Radius of Influence Testing

PRESSURE RADIUS OF INFLUENCE TESTING

SVE-1 LOWER ZONE

	Distance (feet)	Pressure Response (vacuum in. WC)				Location
SVE-1 @ Manifold (valve adjusted)	**0**	**0**	**11**	**30**	**54**	
MW-2	15.5	0	-0.01	-0.023	-0.021	
MW-?	36	0	-0.014	-0.036	-0.04	Alleyway south
MW-5	40.5	0	-0.018	-0.034	-0.034	Alleyway north
MW-?	46.5	0	-0.001	-0.003	0	4" near fence
SVE-4	64	-0.002	-0.006	-0.004	0	
	Flowrate (CFM)	0	15.5	31.5	43.5	

Notes: Pressures measured with Fluke 922 Micromanometer. The air dilution valve was halfway open to set manifold at 54 in. WC and 43.5 CFM from SVE-1. All other SVE well valves closed.

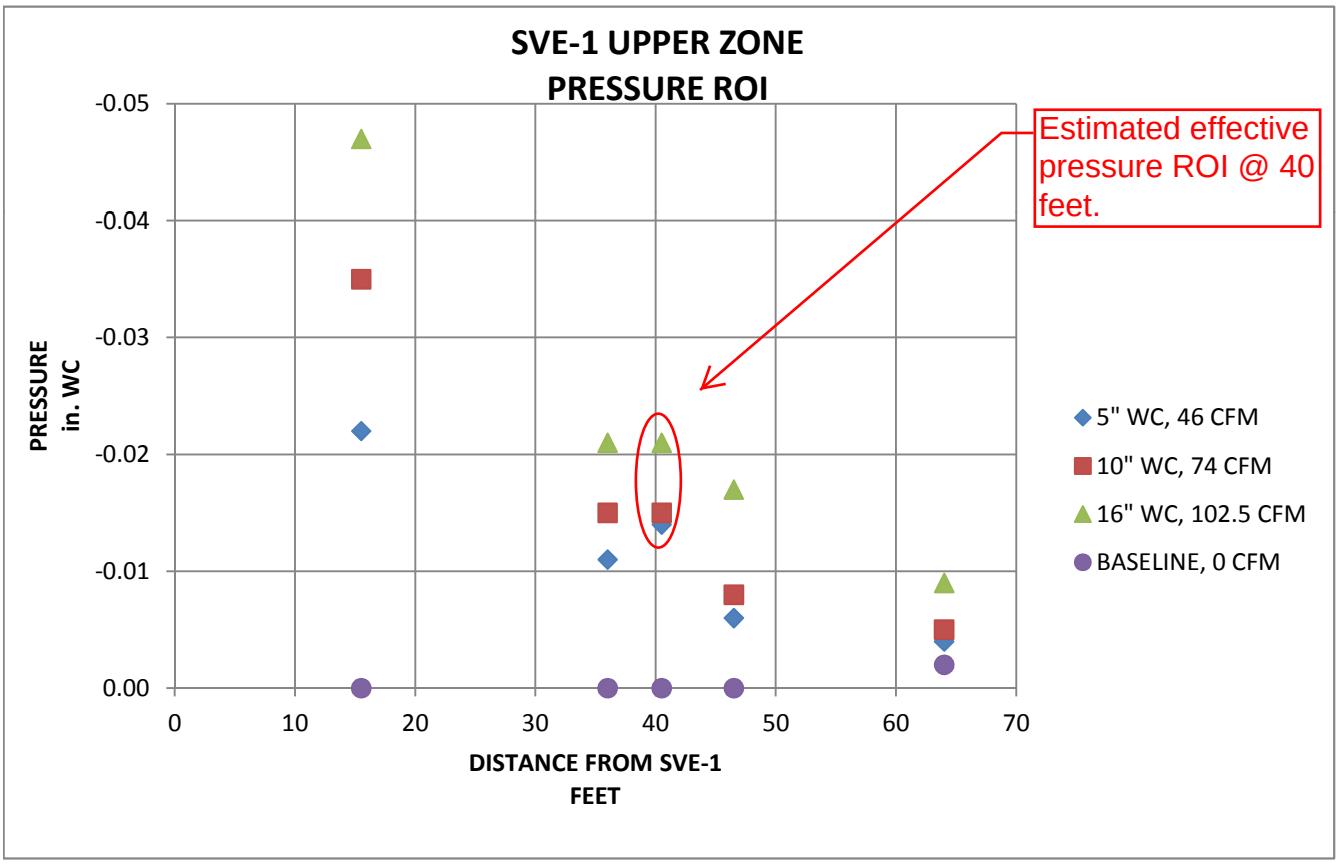


PRESSURE RADIUS OF INFLUENCE TESTING

SVE -1 UPPER ZONE

	Distance (feet)	Pressure Response (vacuum in. WC)				Location
SVE-1 @ Manifold (valve adjusted)	**0**	**0**	**5**	**10**	**16**	
MW-2	15.5	0	-0.022	-0.035	-0.047	
MW-?	36	0	-0.011	-0.015	-0.021	
MW-5	40.5	0	-0.014	-0.015	-0.021	
MW-?	46.5	0	-0.006	-0.008	-0.017	
SVE-4	64	-0.002	-0.004	-0.005	-0.009	
	Flowrate (CFM)	0	46	74	102.5	

Notes: Air dilution valve full open, unable to achieve 20" WC vacuum.

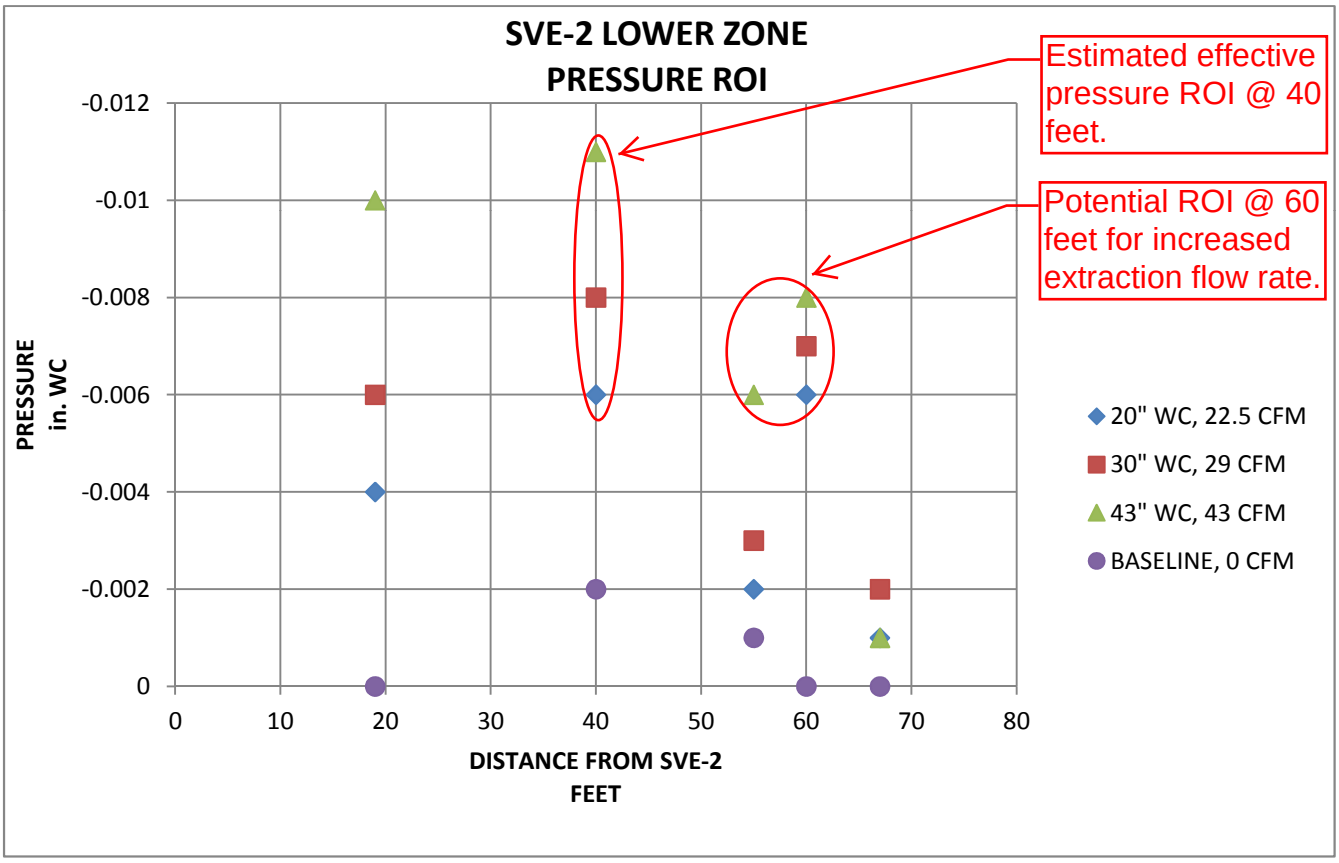


PRESSURE RADIUS OF INFLUENCE TESTING

SVE-2 LOWER ZONE

	Distance (feet)	Pressure Response (vacuum in. WC)				Location
SVE-2 @ Manifold (valve adjusted)	**0**	**0**	**20**	**30**	**43**	
MW-13	19	0	-0.004	-0.006	-0.010	
MW-10	40	-0.002	-0.006	-0.008	-0.011	
SS-2	55	-0.001	-0.002	-0.003	-0.006	
MW-?	60	0	-0.006	-0.007	-0.008	Sidewalk
SS-3	67	0	-0.001	-0.002	-0.001	
	Flowrate (CFM)	0	22.5	29	43	

Notes: Pressures measured with Fluke 922 Micromanometer. All other SVE well valves closed.

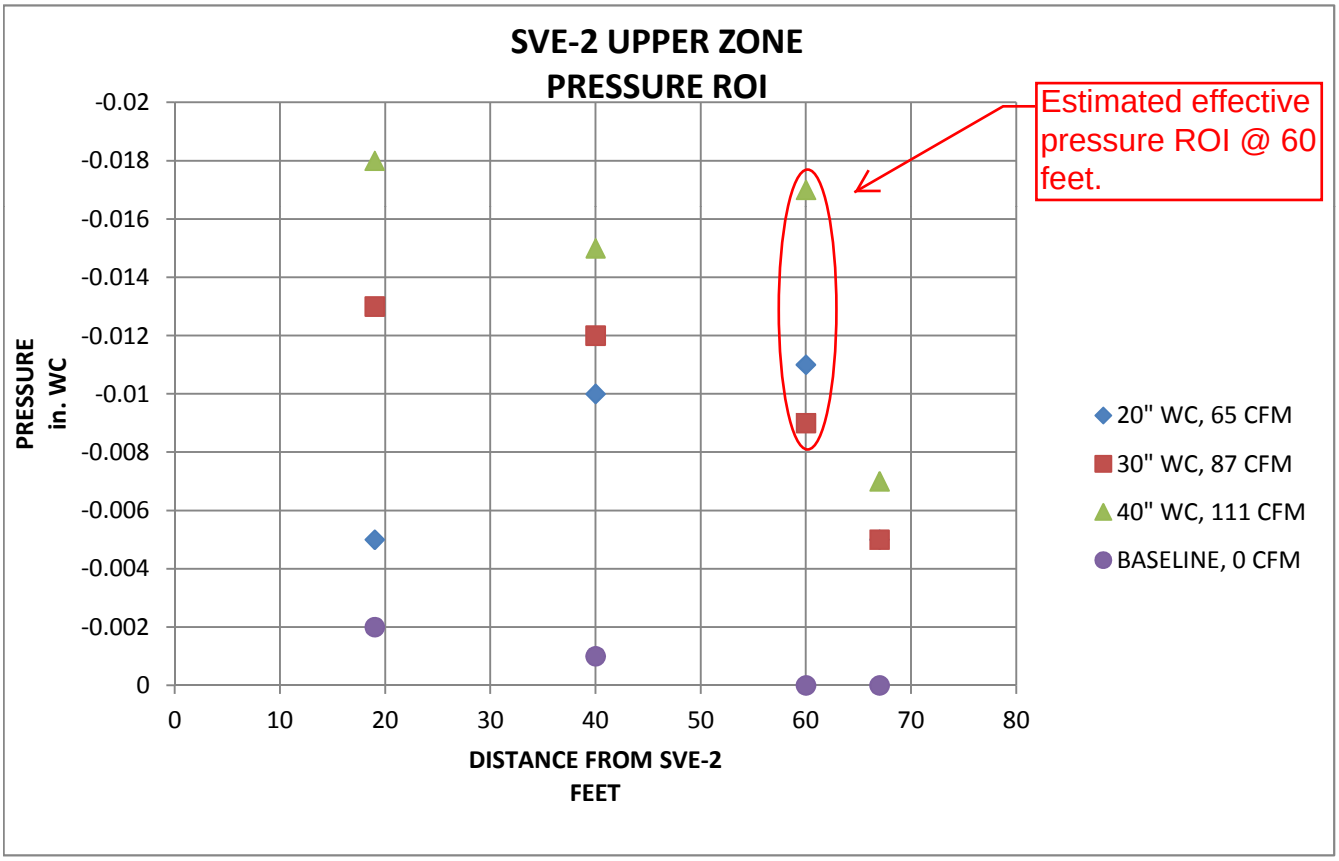


PRESSURE RADIUS OF INFLUENCE TESTING

SVE-2 UPPER ZONE

	Distance (feet)	Pressure Response (vacuum in. WC)				Location
SVE-2 @ Manifold (valve adjusted)	**0**	**0**	**20**	**30**	**40**	
MW-13	19	-0.002	-0.005	-0.013	-0.018	
MW-10	40	-0.001	-0.01	-0.012	-0.015	
SS-2	55	NM	NM	NM	NM	
MW-?	60	0	-0.011	-0.009	-0.017	
SS-3	67	0	-0.005	-0.005	-0.007	
	Flowrate (CFM)	0	65	87	111	

Notes:

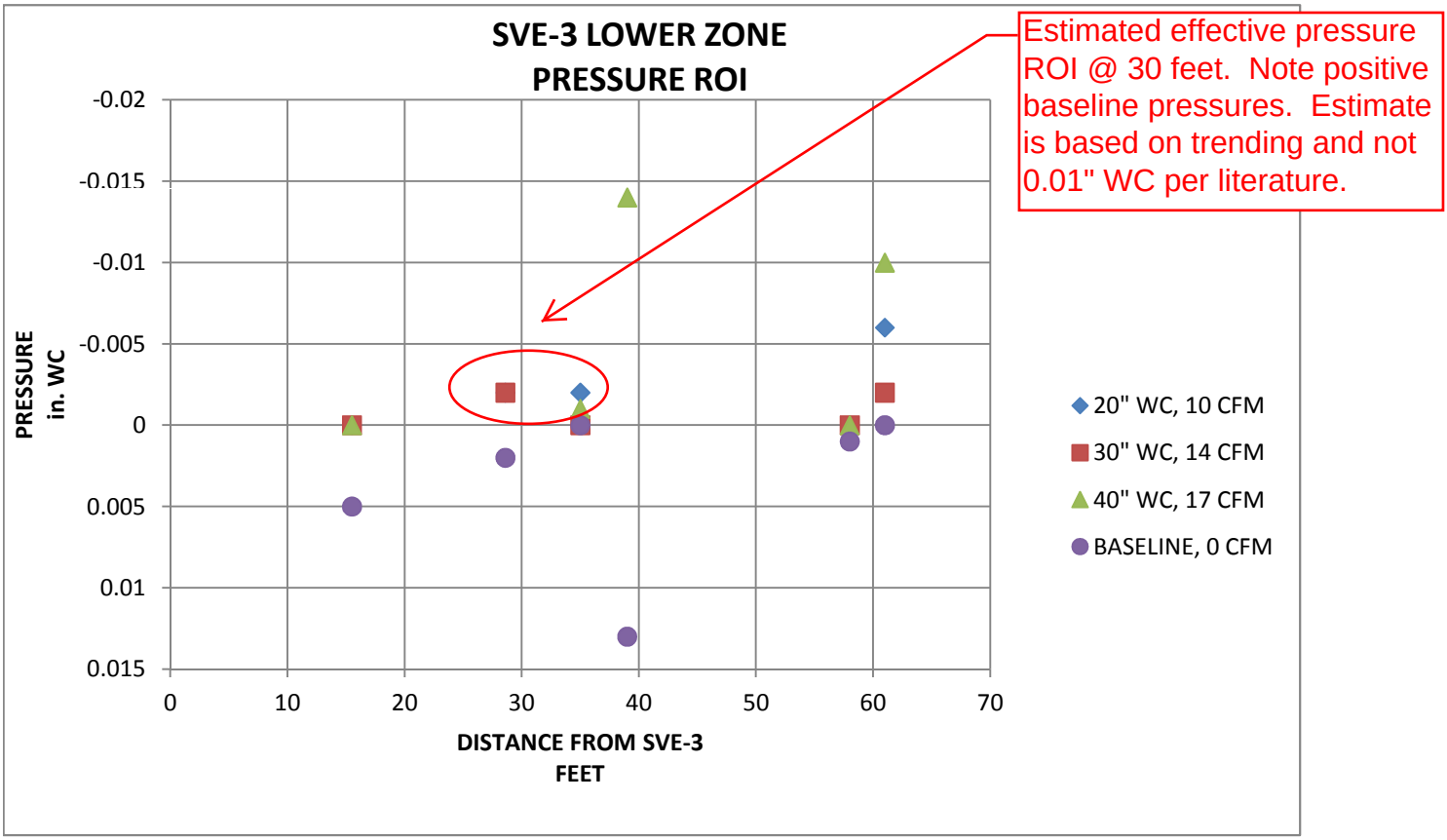


PRESSURE RADIUS OF INFLUENCE TESTING

SVE-3 LOWER ZONE

	Distance (feet)	Pressure Response (vacuum in. WC)				Location
SVE-3 @ Manifold (valve adjusted)	**0**	**0**	**20**	**30**	**40**	
SS-5	15.5	0.005	0.000	0.000	0.000	
SS-4	28.6	0.002	-0.002	-0.002	NM	
SS-3	35	0	-0.002	0.000	-0.001	
SS-2	39	0.013	NM	NM	-0.014	
SS-1	58	0.001	0.000	0.000	0.000	
MW-10	61	0	-0.006	-0.002	-0.010	
	Flowrate (CFM)	0	10	14	17	

Notes: Pressures measured with Fluke 922 Micromanometer. All other SVE well valves closed.

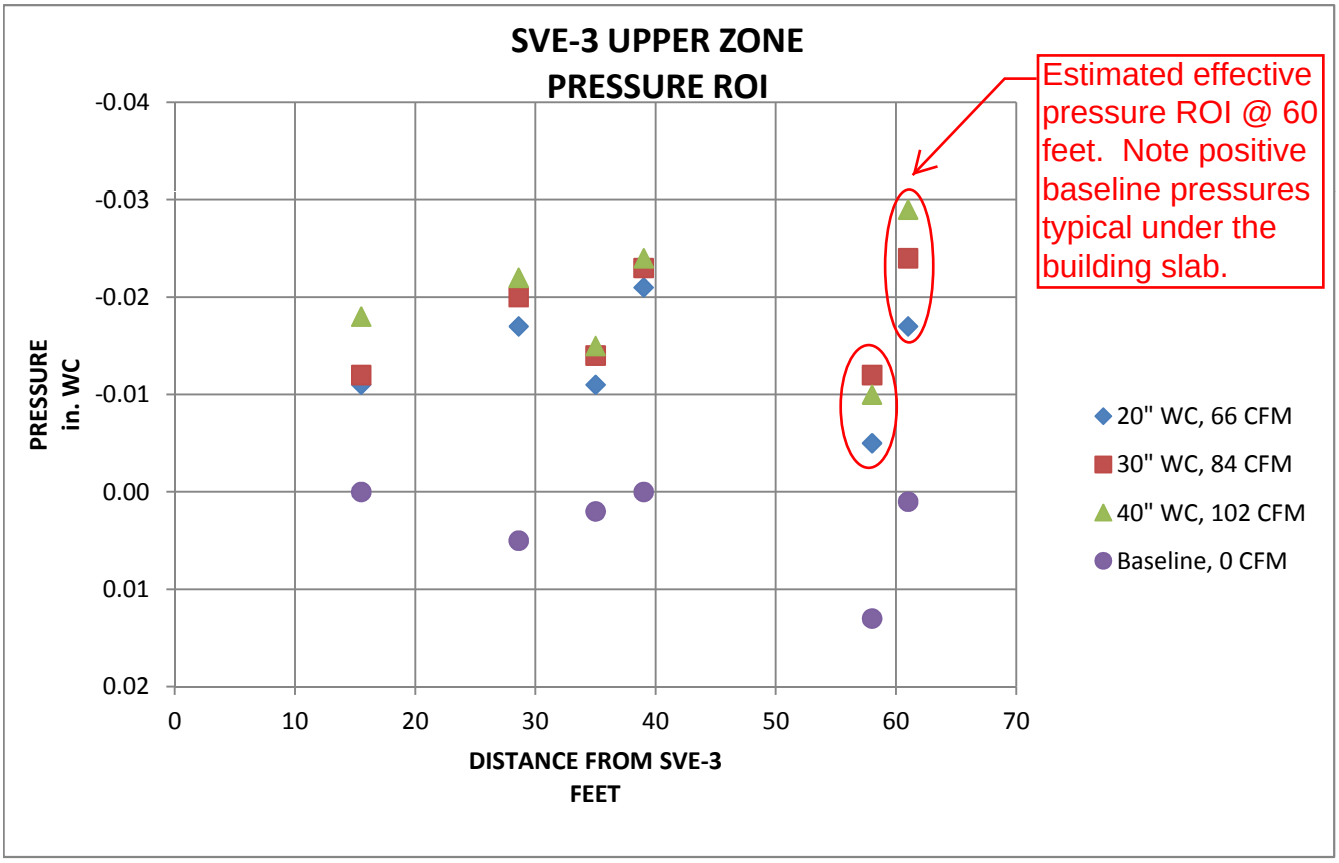


PRESSURE RADIUS OF INFLUENCE TESTING

SVE -3 UPPER ZONE

	Distance (feet)	Pressure Response (vacuum in. WC)				Location
SVE-3 @ Manifold (valve adjusted)	**0**	**0**	**20**	**30**	**40**	
SS-5	15.5	0	-0.011	-0.012	-0.018	
SS-4	28.6	0.005	-0.017	-0.02	-0.022	
SS-3	35	0.002	-0.011	-0.014	-0.015	
SS-2	39	0	-0.021	-0.023	-0.024	
SS-1	58	0.013	-0.005	-0.012	-0.01	
MW-10	61	0.001	-0.017	-0.024	-0.029	
	Flowrate (CFM)	0	66	84	102	

Notes:

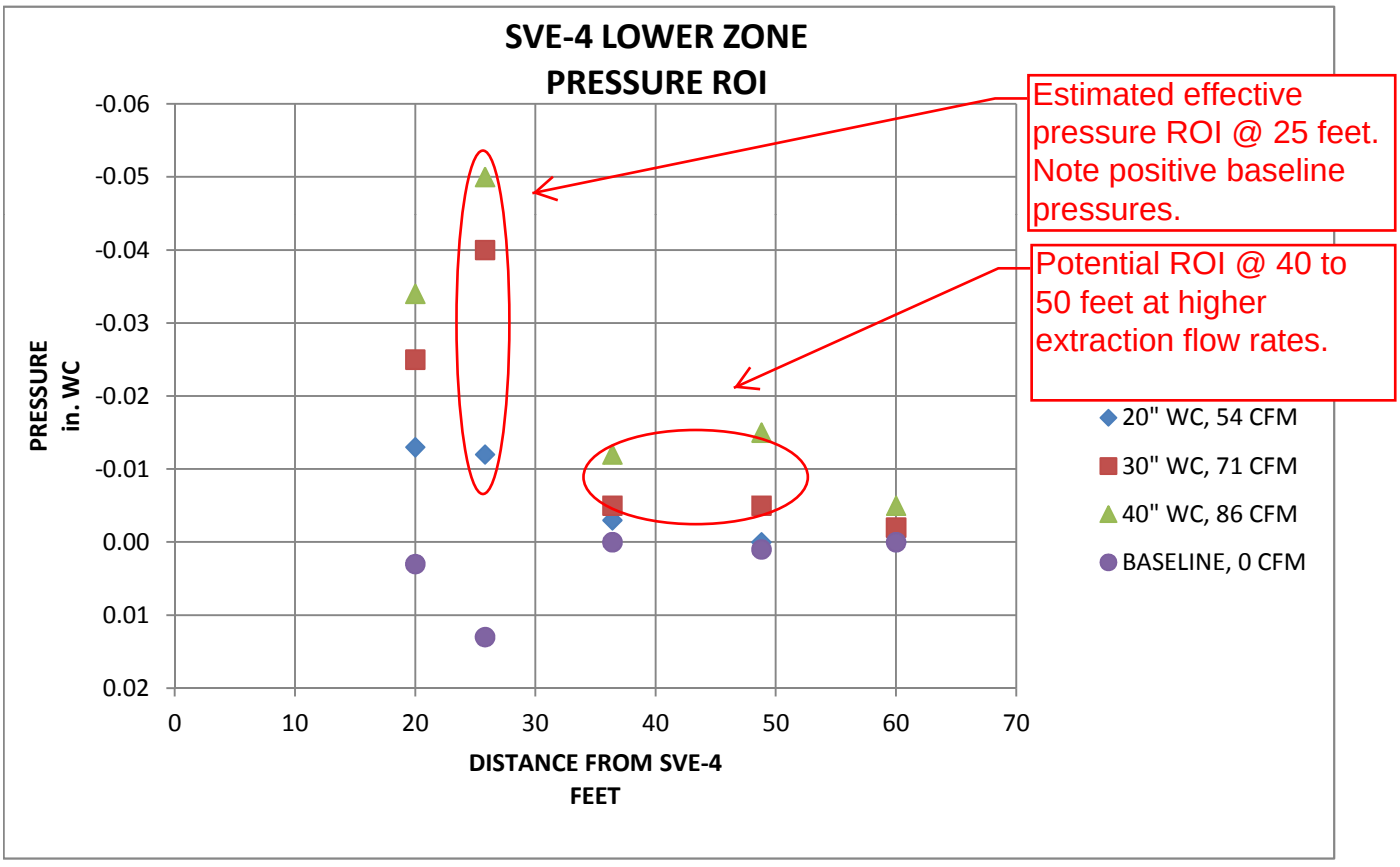


PRESSURE RADIUS OF INFLUENCE TESTING

SVE-4 LOWER ZONE

	Distance (feet)	Pressure Response (vacuum in. WC)				Location
SVE-4 @ Manifold (valve adjusted)	**0**	**0**	**20**	**30**	**40**	
MW-10	20	0.003	-0.013	-0.025	-0.034	
SS-2	25.8	0.013	-0.012	-0.040	-0.050	
SS-3	36.4	0	-0.003	-0.005	-0.012	
SS-1	48.8	0.001	0.000	-0.005	-0.015	
MW-?	60	0	0.000	-0.002	-0.005	Sidewalk
	Flowrate (CFM)	0	54	71	86	

Notes: Pressures measured with Fluke 922 Micromanometer. All other SVE well valves closed.

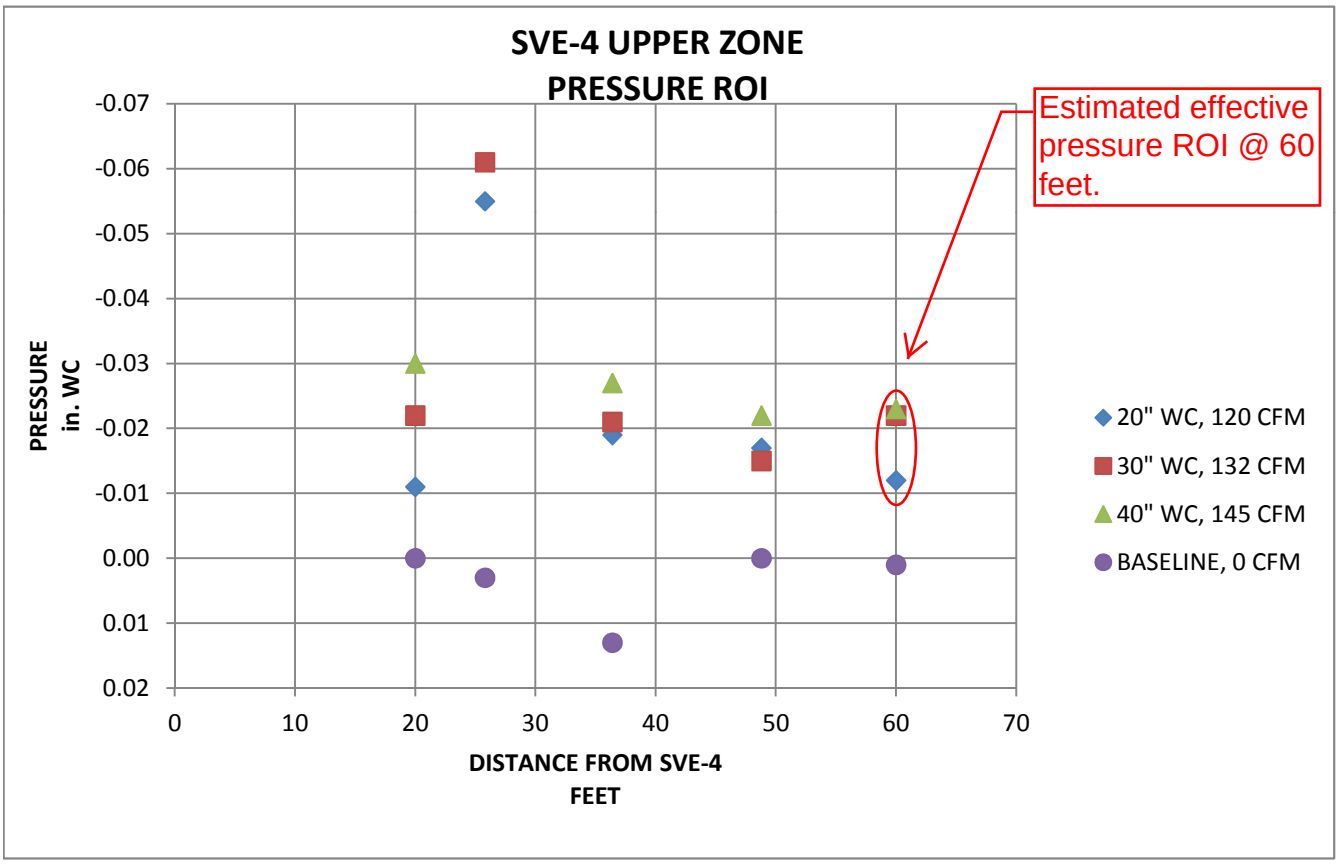


PRESSURE RADIUS OF INFLUENCE TESTING

SVE -4 UPPER ZONE

	Distance (feet)	Pressure Response (vacuum in. WC)				Location
SVE-4 @ Manifold (valve adjusted)	**0**	**0**	**20**	**30**	**40**	
MW-10	20	0	-0.011	-0.022	-0.03	
SS-2	25.8	0.003	-0.055	-0.061	-0.191	
SS-3	36.4	0.013	-0.019	-0.021	-0.027	
SS-1	48.8	0	-0.017	-0.015	-0.022	
MW-?	60	0.001	-0.012	-0.022	-0.023	
	Flowrate (CFM)	0	120	132	145	

Notes: The vacuum response pressure of -0.191" WC at SS-2 during the 40" WC, 145 CFM manifold adjustment is inconsistent with trending data and is omitted from the graph below.

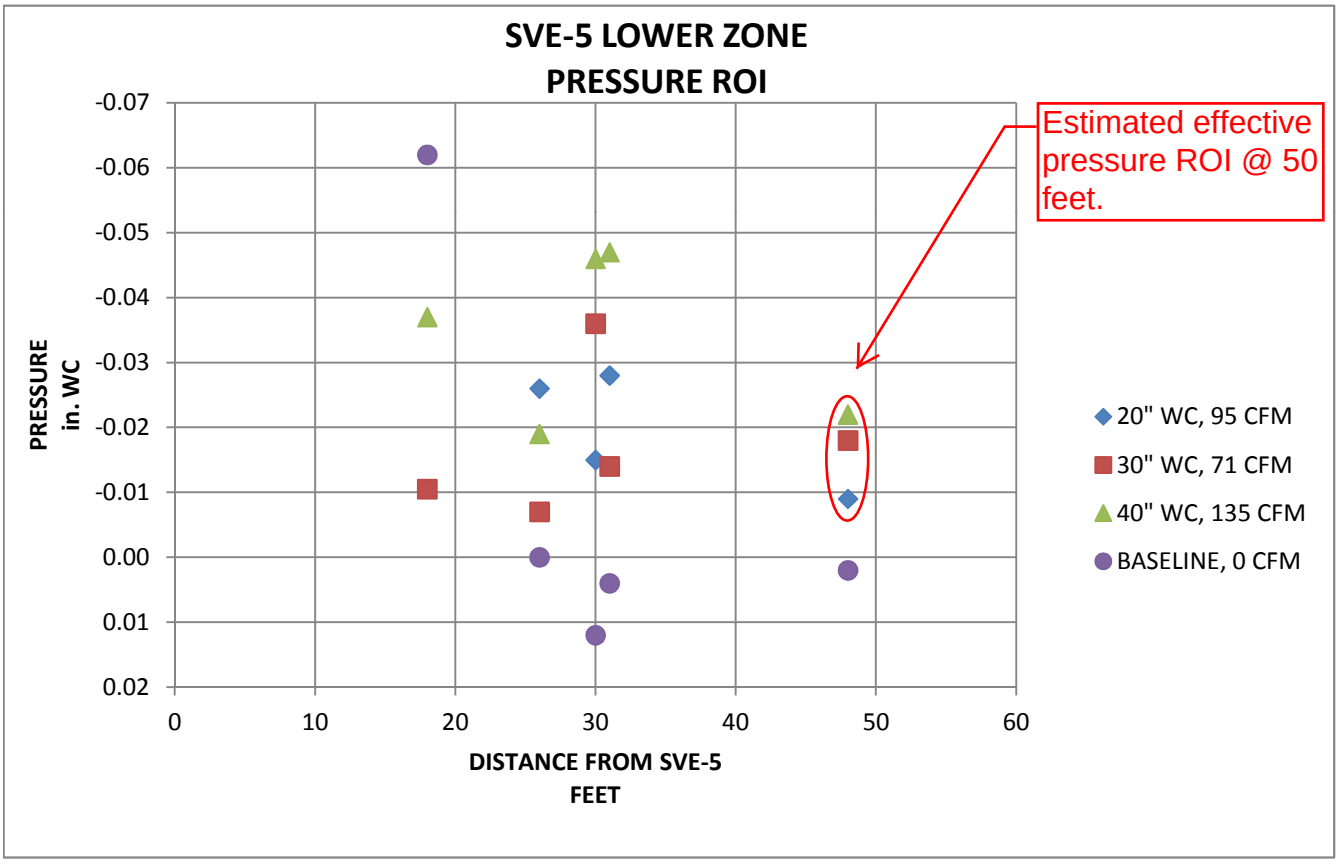


PRESSURE RADIUS OF INFLUENCE TESTING

SVE-5 LOWER ZONE

	Distance (feet)	Pressure Response (vacuum in. WC)				Location
SVE-5 @ Manifold (valve adjusted)	**0**	**0**	**20**	**30**	**40**	
SS-2	18	-0.062	-0.252	-0.011	-0.037	
SS-3	26	0	-0.026	-0.007	-0.019	
MW-?	30	0.012	-0.015	-0.036	-0.046	Sidewalk
SS-1	31	0.004	-0.028	-0.014	-0.047	
MW-13	48	0.002	-0.009	-0.018	-0.022	
	Flowrate (CFM)	0	95	118	135	

Notes: Pressures measured with Fluke 922 Micromanometer. All other SVE well valves closed. Pressure ROI measurement -0.252" WC at SS-2 during the 20" WC/95 CFM manifold adjustment is inconsistent with trending data and has been omitted from the graph below as an outliar.

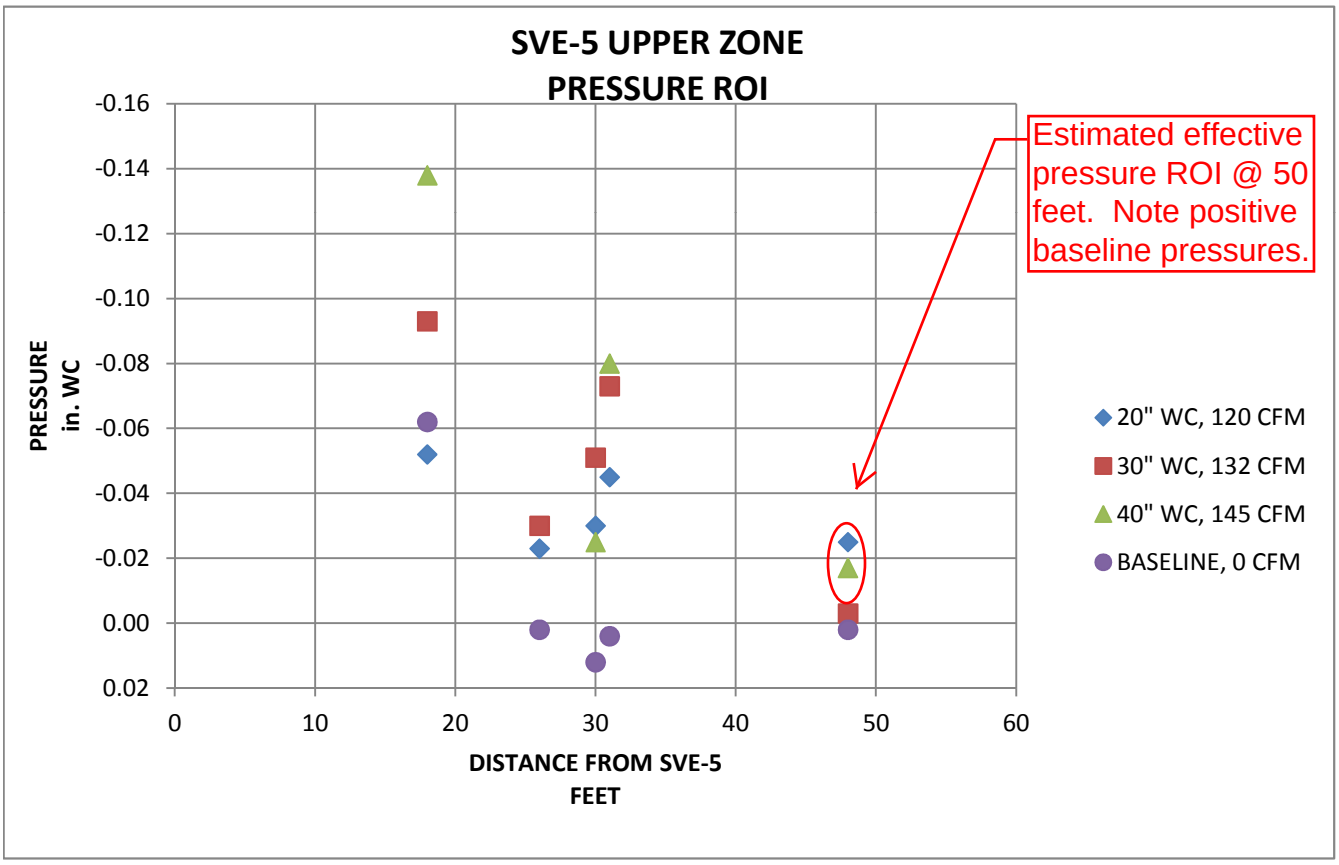


PRESSURE RADIUS OF INFLUENCE TESTING

SVE -5 UPPER ZONE

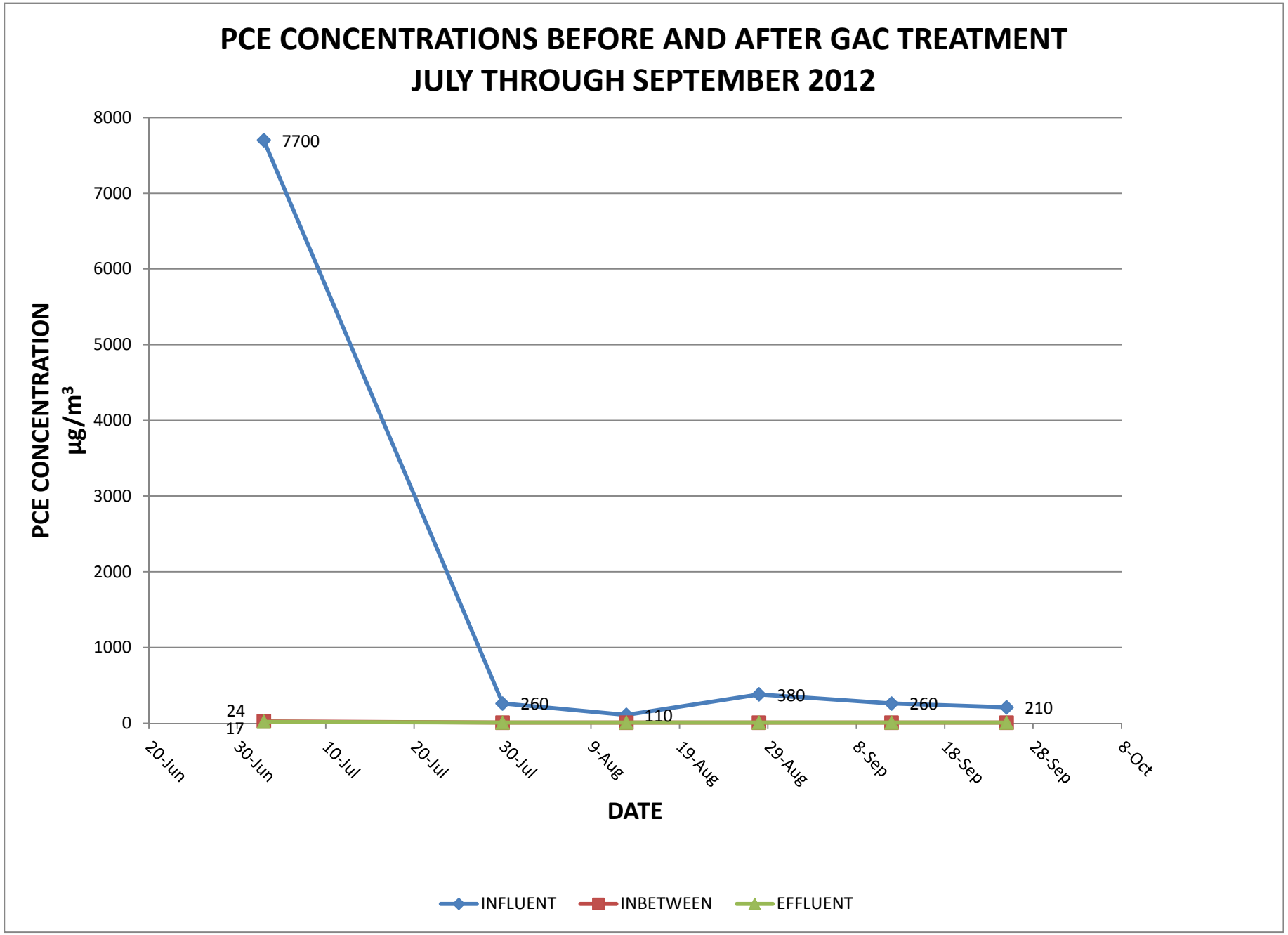
	Distance (feet)	Pressure Response (vacuum in. WC)				Location
SVE-5 @ Manifold (valve adjusted)	**0**	**0**	**20**	**30**	**40**	
SS-2	18	-0.062	-0.052	-0.093	-0.138	
SS-3	26	0.002	-0.023	-0.03	-0.055	
MW-?	30	0.012	-0.03	-0.051	-0.025	
SS-1	31	0.004	-0.045	-0.073	-0.08	
MW-13	48	0.002	-0.025	-0.003	-0.017	
	Flowrate (CFM)	0	112	136	148	

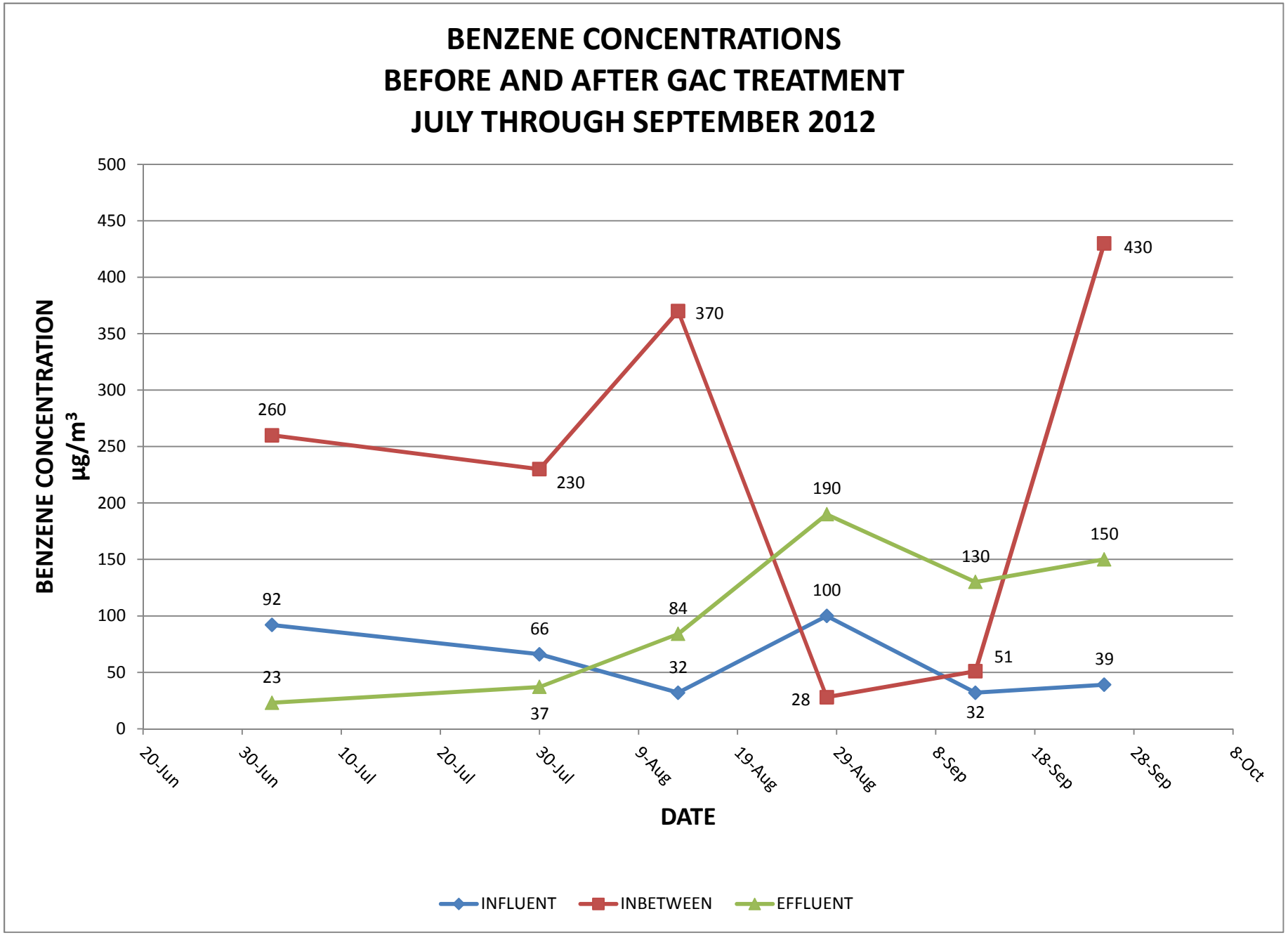
Notes:

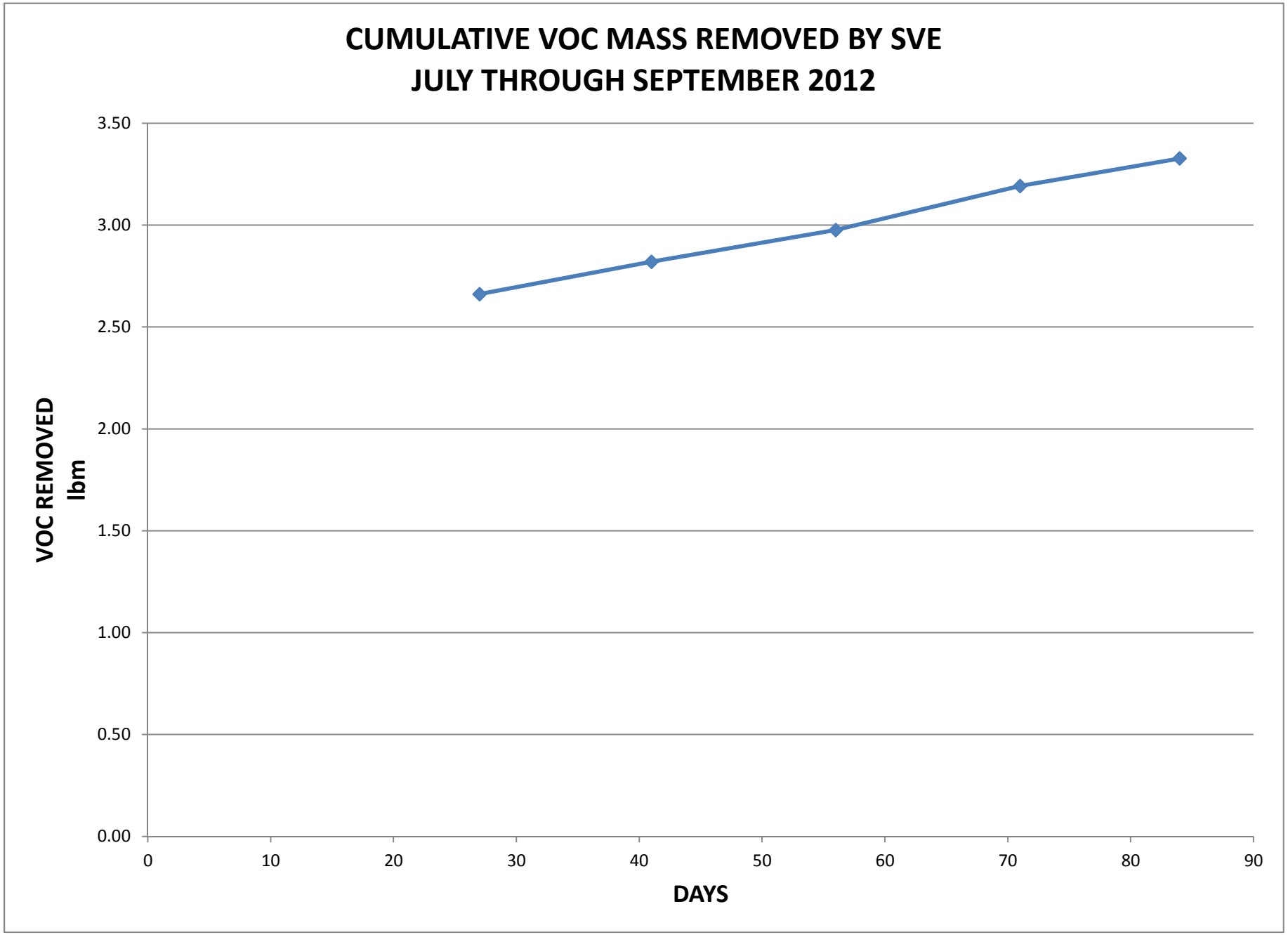


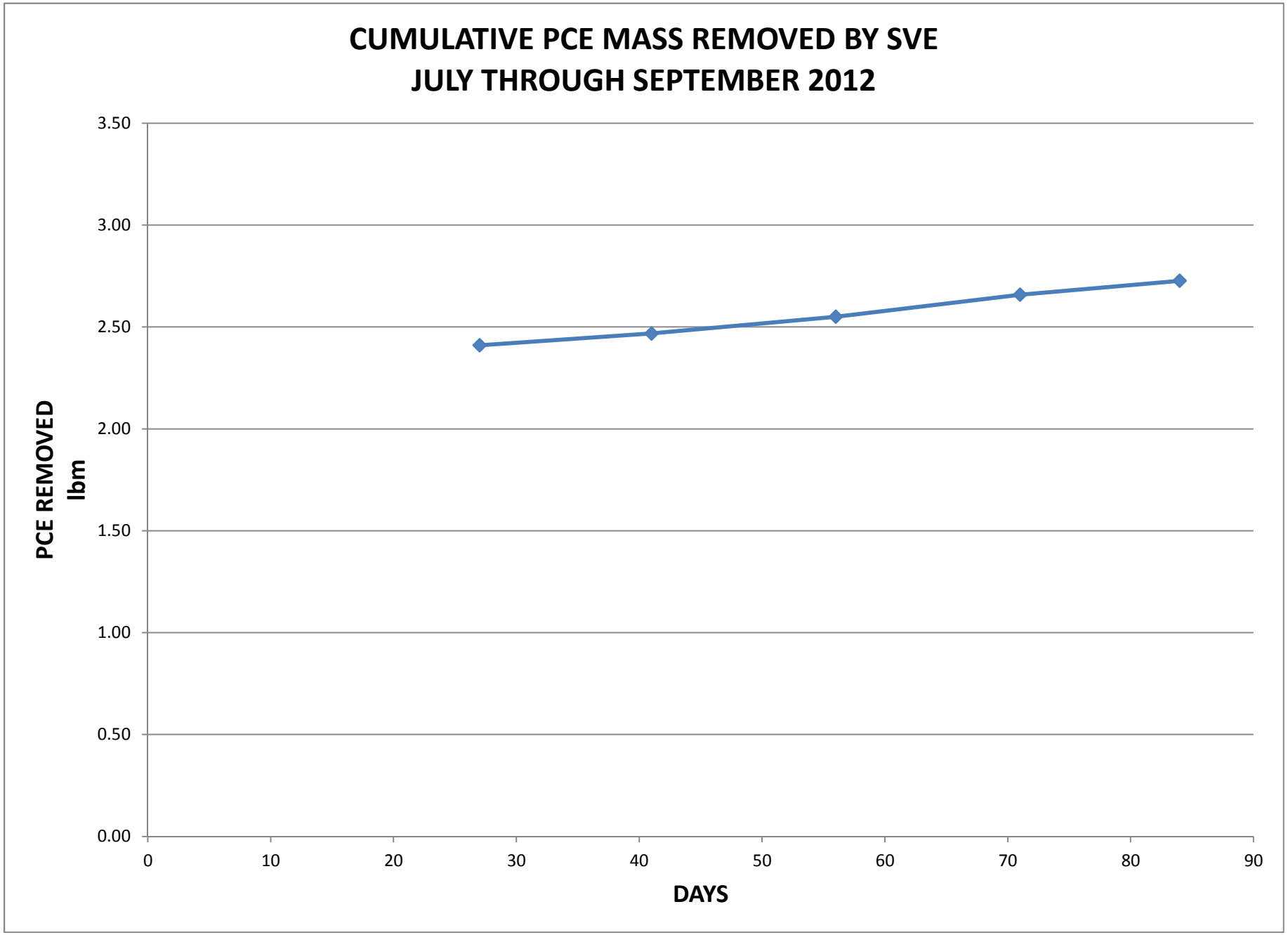
Appendix I

Graphs, SVE Influent Laboratory Analytical Reports, and Chain-of-Custody Documentation









Soil Vapor Extraction System Construction Report, Former Frank Wear Cleaners Site, Yakima, Washington

Mobile Geochemistry Inc.

23 July 2012

Mr. Ty Schreiner
Kennedy/Jenks Consultants - Washington
32001 32nd Ave. South, Suite 100
Federal Way, WA 98001

H&P Project: KJ071112-10
Client Project: 1196016.00 / Yakima, WA

Dear Mr. Ty Schreiner:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 11-Jul-12 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ071112-10	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Ty Schreiner	23-Jul-12 11:19

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Influent 1A	E207031-01	Vapor	03-Jul-12	11-Jul-12
Inbetween 1B	E207031-02	Vapor	03-Jul-12	11-Jul-12
Effluent 1C	E207031-03	Vapor	03-Jul-12	11-Jul-12

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ071112-10	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Ty Schreiner	23-Jul-12 11:19

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
Influent 1A (E207031-01) Vapor Sampled: 03-Jul-12 Received: 11-Jul-12									
Dichlorodifluoromethane (F12)	ND	25	ug/m3	5	EG21706	17-Jul-12	17-Jul-12	EPA TO-15	
Chloromethane	ND	10	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	35	"	"	"	"	"	"	
Vinyl chloride	ND	13	"	"	"	"	"	"	
Bromomethane	ND	79	"	"	"	"	"	"	
Chloroethane	ND	40	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	28	"	"	"	"	"	"	
Acetone	**180**	120	"	"	"	"	"	"	
1,1-Dichloroethene	ND	20	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	39	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	18	"	"	"	"	"	"	
Carbon disulfide	ND	32	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	40	"	"	"	"	"	"	
1,1-Dichloroethane	ND	21	"	"	"	"	"	"	
2-Butanone (MEK)	ND	150	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	20	"	"	"	"	"	"	
Chloroform	ND	25	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	28	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	21	"	"	"	"	"	"	
Benzene	**92**	16	"	"	"	"	"	"	
Carbon tetrachloride	ND	32	"	"	"	"	"	"	
Trichloroethene	ND	27	"	"	"	"	"	"	
1,2-Dichloropropane	ND	47	"	"	"	"	"	"	
Bromodichloromethane	ND	34	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	23	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	41	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	23	"	"	"	"	"	"	
Toluene	**49**	19	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	28	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	41	"	"	"	"	"	"	
Dibromochloromethane	ND	43	"	"	"	"	"	"	
Tetrachloroethene	**7700**	34	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	39	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	35	"	"	"	"	"	"	
Chlorobenzene	ND	23	"	"	"	"	"	"	
Ethylbenzene	ND	22	"	"	"	"	"	"	
m,p-Xylene	ND	44	"	"	"	"	"	"	
Styrene	ND	22	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ071112-10	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Ty Schreiner	23-Jul-12 11:19

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
Influent 1A (E207031-01) Vapor Sampled: 03-Jul-12 Received: 11-Jul-12									
o-Xylene	ND	22	ug/m3	5	EG21706	17-Jul-12	17-Jul-12	EPA TO-15	
Bromoform	ND	52	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	35	"	"	"	"	"	"	
4-Ethyltoluene	ND	25	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	25	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	25	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	61	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	61	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	61	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	38	"	"	"	"	"	"	
Hexachlorobutadiene	ND	54	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*109 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*94.6 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*		*77-127*	"	"	"	"	
Inbetween 1B (E207031-02) Vapor Sampled: 03-Jul-12 Received: 11-Jul-12									
Dichlorodifluoromethane (F12)	ND	5.0	ug/m3	1	EG21706	17-Jul-12	17-Jul-12	EPA TO-15	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	**190**	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	**34**	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	**260**	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ071112-10	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Ty Schreiner	23-Jul-12 11:19

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
Inbetween 1B (E207031-02) Vapor Sampled: 03-Jul-12 Received: 11-Jul-12									
Trichloroethene	ND	5.5	ug/m3	1	EG21706	17-Jul-12	17-Jul-12	EPA TO-15	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	**7.2**	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	**24**	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	
o-Xylene	ND	4.4	"	"	"	"	"	"	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*107 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*94.1 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.3 %*		*77-127*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ071112-10	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Ty Schreiner	23-Jul-12 11:19

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
Effluent 1C (E207031-03) Vapor Sampled: 03-Jul-12 Received: 11-Jul-12									
Dichlorodifluoromethane (F12)	ND	5.0	ug/m3	1	EG21706	17-Jul-12	17-Jul-12	EPA TO-15	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	**490**	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	**23**	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	**6.8**	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	**17**	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ071112-10	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Ty Schreiner	23-Jul-12 11:19

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
Effluent 1C (E207031-03) Vapor Sampled: 03-Jul-12 Received: 11-Jul-12									
o-Xylene	ND	4.4	ug/m3	1	EG21706	17-Jul-12	17-Jul-12	EPA TO-15	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*109 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*92.7 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.1 %*		*77-127*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ071112-10	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Ty Schreiner	23-Jul-12 11:19

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EG21706 - TO-15										
Blank (EG21706-BLK1)				Prepared & Analyzed: 17-Jul-12						
Dichlorodifluoromethane (F12)	ND	5.0	ug/m3							
Chloromethane	ND	2.1	"							
Dichlorotetrafluoroethane (F114)	ND	7.1	"							
Vinyl chloride	ND	2.6	"							
Bromomethane	ND	16	"							
Chloroethane	ND	8.0	"							
Trichlorofluoromethane (F11)	ND	5.6	"							
Acetone	ND	24	"							
1,1-Dichloroethene	ND	4.0	"							
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"							
Methylene chloride (Dichloromethane)	ND	3.5	"							
Carbon disulfide	ND	6.3	"							
trans-1,2-Dichloroethene	ND	8.0	"							
1,1-Dichloroethane	ND	4.1	"							
2-Butanone (MEK)	ND	30	"							
cis-1,2-Dichloroethene	ND	4.0	"							
Chloroform	ND	4.9	"							
1,1,1-Trichloroethane	ND	5.5	"							
1,2-Dichloroethane (EDC)	ND	4.1	"							
Benzene	ND	3.2	"							
Carbon tetrachloride	ND	6.4	"							
Trichloroethene	ND	5.5	"							
1,2-Dichloropropane	ND	9.4	"							
Bromodichloromethane	ND	6.8	"							
cis-1,3-Dichloropropene	ND	4.6	"							
4-Methyl-2-pentanone (MIBK)	ND	8.3	"							
trans-1,3-Dichloropropene	ND	4.6	"							
Toluene	ND	3.8	"							
1,1,2-Trichloroethane	ND	5.5	"							
2-Hexanone (MBK)	ND	8.3	"							
Dibromochloromethane	ND	8.6	"							
Tetrachloroethene	ND	6.9	"							
1,2-Dibromoethane (EDB)	ND	7.8	"							
1,1,1,2-Tetrachloroethane	ND	7.0	"							

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ071112-10	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Ty Schreiner	23-Jul-12 11:19

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EG21706 - TO-15										
Blank (EG21706-BLK1)				Prepared & Analyzed: 17-Jul-12						
Chlorobenzene	ND	4.7	ug/m3							
Ethylbenzene	ND	4.4	"							
m,p-Xylene	ND	8.8	"							
Styrene	ND	4.3	"							
o-Xylene	ND	4.4	"							
Bromoform	ND	10	"							
1,1,2,2-Tetrachloroethane	ND	7.0	"							
4-Ethyltoluene	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
1,3-Dichlorobenzene	ND	12	"							
1,4-Dichlorobenzene	ND	12	"							
1,2-Dichlorobenzene	ND	12	"							
1,2,4-Trichlorobenzene	ND	7.5	"							
Hexachlorobutadiene	ND	11	"							
Surrogate: 1,2-Dichloroethane-d4	*223*		*"*	*214*		*104*	*76-134*			
Surrogate: Toluene-d8	*190*		*"*	*207*		*91.7*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*364*		*"*	*364*		*99.9*	*77-127*			
LCS (EG21706-BS1)				Prepared & Analyzed: 17-Jul-12						
Dichlorodifluoromethane (F12)	130	5.0	ug/m3	101		125	65-135		35	
Vinyl chloride	56	2.6	"	52.0		108	65-135		35	
Chloroethane	64	8.0	"	53.6		120	65-135		35	
Trichlorofluoromethane (F11)	160	5.6	"	113		143	65-135		35	QL-1H
1,1-Dichloroethene	77	4.0	"	80.8		95.5	65-135		35	
1,1,2-Trichlorotrifluoroethane (F113)	170	7.7	"	155		107	65-135		35	
Methylene chloride (Dichloromethane)	61	3.5	"	70.8		86.6	65-135		35	
trans-1,2-Dichloroethene	67	8.0	"	80.8		83.1	65-135		35	
1,1-Dichloroethane	75	4.1	"	82.4		90.8	65-135		35	
cis-1,2-Dichloroethene	68	4.0	"	80.0		84.8	65-135		35	
Chloroform	110	4.9	"	99.2		109	65-135		35	
1,1,1-Trichloroethane	130	5.5	"	111		114	65-135		35	
1,2-Dichloroethane (EDC)	91	4.1	"	82.4		111	65-135		35	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ071112-10	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Ty Schreiner	23-Jul-12 11:19

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EG21706 - TO-15										
LCS (EG21706-BS1)				Prepared & Analyzed: 17-Jul-12						
Benzene	51	3.2	ug/m3	64.8		79.1	65-135		35	
Carbon tetrachloride	170	6.4	"	128		135	65-135		35	
Trichloroethene	120	5.5	"	110		107	65-135		35	
Toluene	67	3.8	"	76.8		87.6	65-135		35	
1,1,2-Trichloroethane	100	5.5	"	111		90.0	65-135		35	
Tetrachloroethene	150	6.9	"	138		108	65-135		35	
1,1,1,2-Tetrachloroethane	180	7.0	"	140		132	65-135		35	
Ethylbenzene	87	4.4	"	88.4		98.9	65-135		35	
m,p-Xylene	190	8.8	"	177		106	65-135		35	
o-Xylene	96	4.4	"	88.4		109	65-135		35	
1,1,2,2-Tetrachloroethane	150	7.0	"	140		105	65-135		35	
Surrogate: 1,2-Dichloroethane-d4	*239*		*"*	*214*		*112*	*76-134*			
Surrogate: Toluene-d8	*197*		*"*	*207*		*95.2*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*396*		*"*	*364*		*109*	*77-127*			
LCS Dup (EG21706-BSD1)				Prepared & Analyzed: 17-Jul-12						
Dichlorodifluoromethane (F12)	130	5.0	ug/m3	101		131	65-135	4.73	35	
Vinyl chloride	59	2.6	"	52.0		114	65-135	4.67	35	
Chloroethane	66	8.0	"	53.6		124	65-135	2.94	35	
Trichlorofluoromethane (F11)	170	5.6	"	113		147	65-135	2.44	35	QL-1H
1,1-Dichloroethene	98	4.0	"	80.8		121	65-135	23.9	35	
1,1,2-Trichlorotrifluoroethane (F113)	170	7.7	"	155		112	65-135	4.65	35	
Methylene chloride (Dichloromethane)	69	3.5	"	70.8		97.7	65-135	12.1	35	
trans-1,2-Dichloroethene	71	8.0	"	80.8		88.0	65-135	5.76	35	
1,1-Dichloroethane	78	4.1	"	82.4		95.2	65-135	4.71	35	
cis-1,2-Dichloroethene	72	4.0	"	80.0		90.5	65-135	6.54	35	
Chloroform	110	4.9	"	99.2		108	65-135	1.15	35	
1,1,1-Trichloroethane	130	5.5	"	111		116	65-135	1.16	35	
1,2-Dichloroethane (EDC)	93	4.1	"	82.4		112	65-135	1.25	35	
Benzene	53	3.2	"	64.8		81.8	65-135	3.35	35	
Carbon tetrachloride	170	6.4	"	128		134	65-135	0.297	35	
Trichloroethene	110	5.5	"	110		104	65-135	2.17	35	
Toluene	67	3.8	"	76.8		87.8	65-135	0.283	35	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ071112-10	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Ty Schreiner	23-Jul-12 11:19

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EG21706 - TO-15										
LCS Dup (EG21706-BSD1)				Prepared & Analyzed: 17-Jul-12						
1,1,2-Trichloroethane	99	5.5	ug/m3	111		88.9	65-135	1.16	35	
Tetrachloroethene	150	6.9	"	138		109	65-135	0.413	35	
1,1,1,2-Tetrachloroethane	180	7.0	"	140		126	65-135	4.17	35	
Ethylbenzene	87	4.4	"	88.4		97.9	65-135	1.01	35	
m,p-Xylene	190	8.8	"	177		106	65-135	0.212	35	
o-Xylene	95	4.4	"	88.4		108	65-135	0.643	35	
1,1,2,2-Tetrachloroethane	140	7.0	"	140		102	65-135	3.75	35	
Surrogate: 1,2-Dichloroethane-d4	*240*		"	*214*		*112*	*76-134*			
Surrogate: Toluene-d8	*194*		"	*207*		*93.7*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*391*		"	*364*		*107*	*77-127*			

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ071112-10	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Ty Schreiner	23-Jul-12 11:19

Notes and Definitions

QL-1H	The LCS and/or LCSD recoveries fell above the established control specifications for this analyte. Any result for this compound is qualified and should be considered biased high.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ071112-10	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Ty Schreiner	23-Jul-12 11:19

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS
Certificate# 2742, 2745, & 2741 approved for LUFT
Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods:

1,2,4-Trichlorobenzene by EPA TO-15 & TO-14A
Hexachlorobutadiene by EPA TO-15 & TO-14A
1,2,4-Trimethylbenzene by EPA TO -14A
1,2-Dichlorobenzene by EPA TO-15 & TO-14A
1,3,5-Trimethylbenzene by EPA TO -14A
1,4-Dichlorobenzene by EPA TO-15 & TO-14A
Benzene by EPA TO-15 & TO-14A
Chlorobenzene by EPA TO-15 & TO-14A
Ethyl benzene by EPA TO-15 & TO-14A
Styrene by EPA TO-15 & TO-14A
Toluene by EPA TO-15 & TO-14A
Total Xylenes by EPA TO-15 & TO-14A
1,1,1-Trichloroethane by EPA TO-15 & TO-14A
1,1,2,2-Tetrachloroethane by EPA TO-15 & TO-14A
1,1,2-Trichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethene by EPA TO-15 & TO-14A
1,2-Dichloroethane by EPA TO-15 & TO-14A
1,2-Dichloropropane by EPA TO-15 & TO-14A
Benzyl Chloride by EPA TO-15 & TO-14A
Bromoform by EPA TO-15
Bromomethane by EPA TO-15 & TO-14A
Carbon tetrachloride by EPA TO-15 & TO-14A
Chloroethane by EPA TO-15
Chloroform by EPA TO-15 & TO-14A
Chloromethane by EPA TO-15 & TO-14A
cis-1,2-Dichloroethene by EPA TO-15
cis-1,2-Dichloropropene by EPA TO-15 & TO-14A
Methylene chloride by EPA TO -15 & TO-14A
Tetrachloroethane by EPA TO-15 & TO-14A
trans-1,2-Dichloroethene by EPA TO-15
trans-1,2-Dichloropropene by EPA TO-15 & TO-14A
Trichloroethene by EPA TO-15 & TO-14A
Vinyl chloride by EPA TO -15 & TO-14A
2-Butanone by EPA TO-15
4-Methyl-2-Pentanone by EPA TO-15
Hexane by EPA TO-15
Methyl tert-butyl ether by EPA TO-15
Vinyl acetate by EPA TO-15
Dibromochloromethane by EPA TO-15
Dichlorodifluoromethane by EPA TO-15 & TO-14A
Trichlorofluoromethane by EPA TO-15 & TO-14A
Naphthalene by EPA TO-15 & TO-14A
m&p Xylenes by EPA TO-15
o-Xylene by EPA TO-15
1,3-Butadiene by EPA TO-15
1,1,2-Trichlorotrifluoroethane by EPA TO-15 & TO-14A
Carbon disulfide by EPA TO-15
1,4-Dioxane by EPA TO-15
Cyclohexane by EPA TO-15
tert-Butyl Alcohol by EPA TO-15
1,3-Dichlorobenzene by EPA TO-15 & TO-14A
Heptane by EPA TO-15
Bromodichloromethane by EPA TO-15 & TO-14A

Chain of Custody Record

Mobile Geochemistry Inc.
☒ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Date: 7-3-12
H&P Project # KJ071112-10
Outside Lab:

Client: Kennedy Jenks Consultants
Collector: Jarod Fisher
Page: 1 of 1
Address: 32001 32nd AVE South, ste 100 Federal Way, WA 98001
Client Project # 119601.6.00
Location: Yakima WA
Project Contact: Ty Schreiner 253 835 6428
Email: Ty Schreiner@KennedyJenks.com**
Phone: 253 835 6400
Fax: —
Turn around time: Standard

Geotracker EDF: Yes ☐ No ☒
Global ID:
Excel EDD: Yes ☒ No ☐

Sample Receipt
Intact: ☑ Yes ☐ No
Seal Intact: ☑ Yes ☐ No ☐ N/A
Cold: ☐ Yes ☐ No ☑ N/A
Temperature: RT

Special Instructions:
UPS TRACK# 1Z 93T T61 87 4620 1656

** CC: JOSHHOPP@KENNEDYJENKS.COM ON FINAL REPORT (SR)

*SUMMA TIMES ARE ALL 17xx, BUT WILL BE CORRECTED TO 15xx TO MATCH COC PER JARED FISHER, 7/11/12 (SR)
7/16/12 → KJ REVISED ORDER TO BE FOR TO-15 INSTEAD OF 8260SV - (SR)

Lab Work Order # E207031

Sample Name	Field Point Name	Purge Vol	* Time	Date	Sample Type	Container Type	Total # of containers	8260B Full List	8260B ☐ BTEX/OXY ☐ TPH gas	8015M TPH ☐ g ☐ d ☐ ext	418.1 TRPH SEE NOTE! (8)	VOC's: Full List ☒ 8260B ☐ TO-15	VOC's: Short List/DTSC ☐ 8260B ☐ TO-15	VOC's: SAM, 8260B ☐ SAM A ☐ SAM B	Naphthalene ☐ 8260B ☐ TO-15	Oxygenates ☐ 8260B ☐ TO-15	TPHv gas ☐ 8260B ☐ TO-15	Ketones ☐ 8260B ☐ TO-15	Other ____ ☐ 8260B ☐ TO-15	Leak Check Compound ☐ 1,1 DFA ☐ OTHER	Methane	Fixed Gases ☐ CO2 ☐ O2 ☐ N2	CAN #	VAC #
								SOIL/GW				SOIL VAPOR/AIR ANALYSIS												
Influent 1A	NA	⊖	1506	7-3-12	AIR	SUMMA	1					X											244	-3.0
Inbetween 1B	NA	⊖	1510	7/3/12	AIR	SUMMA	1					X											307	-3.2
Effluent 1C	NA	⊖	1513	7/3/12	AIR	SUMMA	1					X											079	-3.6

Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
	Kennedy Jenks		H&P	7/11/12	0955
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ Disposal ☐ Return to client ☐ Pickup

Mobile Geochemistry Inc.

13 August 2012

Mr. Josh Hopp
Kennedy/Jenks Consultants - Washington
32001 32nd Ave. South, Suite 100
Federal Way, WA 98001

H&P Project: KJ080112-13
Client Project: 1196016.00 / Yakima, WA

Dear Mr. Josh Hopp:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 01-Aug-12 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ080112-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	13-Aug-12 14:50

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FW-Influent-001	E208009-01	Vapor	30-Jul-12	01-Aug-12
FW-Inbtwn-070	E208009-02	Vapor	30-Jul-12	01-Aug-12
FW-effluent	E208009-03	Vapor	30-Jul-12	01-Aug-12

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ080112-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	13-Aug-12 14:50

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Influent-001 (E208009-01) Vapor Sampled: 30-Jul-12 Received: 01-Aug-12									
Dichlorodifluoromethane (F12)	**6.6**	5.0	ug/m3	1	EH20502	05-Aug-12	06-Aug-12	EPA TO-15	
Chloromethane	**6.3**	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	**280**	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	**7.5**	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	**9.6**	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	**66**	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	**66**	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	**260**	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	**8.7**	4.4	"	"	"	"	"	"	
m,p-Xylene	**35**	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ080112-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	13-Aug-12 14:50

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Influent-001 (E208009-01) Vapor Sampled: 30-Jul-12 Received: 01-Aug-12									
o-Xylene	**11**	4.4	ug/m3	1	EH20502	05-Aug-12	06-Aug-12	EPA TO-15	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**12**	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*110 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*103 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*		*77-127*	"	"	"	"	
FW-Inbtwn-070 (E208009-02) Vapor Sampled: 30-Jul-12 Received: 01-Aug-12									
Dichlorodifluoromethane (F12)	**14**	5.0	ug/m3	1	EH20502	05-Aug-12	06-Aug-12	EPA TO-15	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	**940**	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	**3.6**	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	**230**	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ080112-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	13-Aug-12 14:50

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Inbtwn-070 (E208009-02) Vapor Sampled: 30-Jul-12 Received: 01-Aug-12									
Trichloroethene	ND	5.5	ug/m3	1	EH20502	05-Aug-12	06-Aug-12	EPA TO-15	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	**8.4**	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	ND	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	
o-Xylene	ND	4.4	"	"	"	"	"	"	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*111 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.6 %*		*77-127*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ080112-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	13-Aug-12 14:50

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-effluent (E208009-03) Vapor Sampled: 30-Jul-12 Received: 01-Aug-12									
Dichlorodifluoromethane (F12)	**5.6**	5.0	ug/m3	1	EH20502	05-Aug-12	06-Aug-12	EPA TO-15	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	**1300**	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	**37**	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	**17**	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	ND	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ080112-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	13-Aug-12 14:50

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-effluent (E208009-03) Vapor Sampled: 30-Jul-12 Received: 01-Aug-12									
o-Xylene	ND	4.4	ug/m3	1	EH20502	05-Aug-12	06-Aug-12	EPA TO-15	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*110 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*106 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*96.1 %*		*77-127*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ080112-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	13-Aug-12 14:50

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH20502 - TO-15										
Blank (EH20502-BLK1)				Prepared & Analyzed: 05-Aug-12						
Dichlorodifluoromethane (F12)	ND	5.0	ug/m3							
Chloromethane	ND	2.1	"							
Dichlorotetrafluoroethane (F114)	ND	7.1	"							
Vinyl chloride	ND	2.6	"							
Bromomethane	ND	16	"							
Chloroethane	ND	8.0	"							
Trichlorofluoromethane (F11)	ND	5.6	"							
Acetone	ND	24	"							
1,1-Dichloroethene	ND	4.0	"							
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"							
Methylene chloride (Dichloromethane)	ND	3.5	"							
Carbon disulfide	ND	6.3	"							
trans-1,2-Dichloroethene	ND	8.0	"							
1,1-Dichloroethane	ND	4.1	"							
2-Butanone (MEK)	ND	30	"							
cis-1,2-Dichloroethene	ND	4.0	"							
Chloroform	ND	4.9	"							
1,1,1-Trichloroethane	ND	5.5	"							
1,2-Dichloroethane (EDC)	ND	4.1	"							
Benzene	ND	3.2	"							
Carbon tetrachloride	ND	6.4	"							
Trichloroethene	ND	5.5	"							
1,2-Dichloropropane	ND	9.4	"							
Bromodichloromethane	ND	6.8	"							
cis-1,3-Dichloropropene	ND	4.6	"							
4-Methyl-2-pentanone (MIBK)	ND	8.3	"							
trans-1,3-Dichloropropene	ND	4.6	"							
Toluene	ND	3.8	"							
1,1,2-Trichloroethane	ND	5.5	"							
2-Hexanone (MBK)	ND	8.3	"							
Dibromochloromethane	ND	8.6	"							
Tetrachloroethene	ND	6.9	"							
1,2-Dibromoethane (EDB)	ND	7.8	"							
1,1,1,2-Tetrachloroethane	ND	7.0	"							

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ080112-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	13-Aug-12 14:50

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH20502 - TO-15										
Blank (EH20502-BLK1)				Prepared & Analyzed: 05-Aug-12						
Chlorobenzene	ND	4.7	ug/m3							
Ethylbenzene	ND	4.4	"							
m,p-Xylene	ND	8.8	"							
Styrene	ND	4.3	"							
o-Xylene	ND	4.4	"							
Bromoform	ND	10	"							
1,1,2,2-Tetrachloroethane	ND	7.0	"							
4-Ethyltoluene	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
1,3-Dichlorobenzene	ND	12	"							
1,4-Dichlorobenzene	ND	12	"							
1,2-Dichlorobenzene	ND	12	"							
1,2,4-Trichlorobenzene	ND	7.5	"							
Hexachlorobutadiene	ND	11	"							
Surrogate: 1,2-Dichloroethane-d4	*232*		*"*	*214*		*108*	*76-134*			
Surrogate: Toluene-d8	*209*		*"*	*207*		*101*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*371*		*"*	*364*		*102*	*77-127*			
LCS (EH20502-BS1)				Prepared: 05-Aug-12 Analyzed: 06-Aug-12						
Dichlorodifluoromethane (F12)	120	5.0	ug/m3	101		118	65-135		35	
Vinyl chloride	72	2.6	"	52.0		138	65-135		35	QL-1H
Chloroethane	90	8.0	"	53.6		168	65-135		35	QL-1H
Trichlorofluoromethane (F11)	140	5.6	"	113		124	65-135		35	
1,1-Dichloroethene	86	4.0	"	80.8		106	65-135		35	
1,1,2-Trichlorotrifluoroethane (F113)	160	7.7	"	155		101	65-135		35	
Methylene chloride (Dichloromethane)	70	3.5	"	70.8		99.2	65-135		35	
trans-1,2-Dichloroethene	79	8.0	"	80.8		97.7	65-135		35	
1,1-Dichloroethane	81	4.1	"	82.4		98.5	65-135		35	
cis-1,2-Dichloroethene	80	4.0	"	80.0		100	65-135		35	
Chloroform	100	4.9	"	99.2		105	65-135		35	
1,1,1-Trichloroethane	120	5.5	"	111		105	65-135		35	
1,2-Dichloroethane (EDC)	88	4.1	"	82.4		106	65-135		35	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ080112-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	13-Aug-12 14:50

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH20502 - TO-15										
LCS (EH20502-BS1)				Prepared: 05-Aug-12 Analyzed: 06-Aug-12						
Benzene	68	3.2	ug/m3	64.8		104	65-135		35	
Carbon tetrachloride	140	6.4	"	128		108	65-135		35	
Trichloroethene	120	5.5	"	110		107	65-135		35	
Toluene	76	3.8	"	76.8		99.1	65-135		35	
1,1,2-Trichloroethane	100	5.5	"	111		91.9	65-135		35	
Tetrachloroethene	130	6.9	"	138		93.3	65-135		35	
1,1,1,2-Tetrachloroethane	140	7.0	"	140		96.7	65-135		35	
Ethylbenzene	94	4.4	"	88.4		106	65-135		35	
m,p-Xylene	190	8.8	"	177		108	65-135		35	
o-Xylene	96	4.4	"	88.4		109	65-135		35	
1,1,2,2-Tetrachloroethane	140	7.0	"	140		101	65-135		35	
Surrogate: 1,2-Dichloroethane-d4	*230*		*"*	*214*		*107*	*76-134*			
Surrogate: Toluene-d8	*216*		*"*	*207*		*104*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*359*		*"*	*364*		*98.5*	*77-127*			

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ080112-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	13-Aug-12 14:50

Notes and Definitions

QL-1H	The LCS and/or LCSD recoveries fell above the established control specifications for this analyte. Any result for this compound is qualified and should be considered biased high.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ080112-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	13-Aug-12 14:50

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS
Certificate# 2742, 2745, & 2741 approved for LUFT
Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods:

1,2,4-Trichlorobenzene by EPA TO-15 & TO-14A
Hexachlorobutadiene by EPA TO-15 & TO-14A
1,2,4-Trimethylbenzene by EPA TO -14A
1,2-Dichlorobenzene by EPA TO-15 & TO-14A
1,3,5-Trimethylbenzene by EPA TO -14A
1,4-Dichlorobenzene by EPA TO-15 & TO-14A
Benzene by EPA TO-15 & TO-14A
Chlorobenzene by EPA TO-15 & TO-14A
Ethyl benzene by EPA TO-15 & TO-14A
Styrene by EPA TO-15 & TO-14A
Toluene by EPA TO-15 & TO-14A
Total Xylenes by EPA TO-15 & TO-14A
1,1,1-Trichloroethane by EPA TO-15 & TO-14A
1,1,2,2-Tetrachloroethane by EPA TO-15 & TO-14A
1,1,2-Trichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethene by EPA TO-15 & TO-14A
1,2-Dichloroethane by EPA TO-15 & TO-14A
1,2-Dichloropropane by EPA TO-15 & TO-14A
Benzyl Chloride by EPA TO-15 & TO-14A
Bromoform by EPA TO-15
Bromomethane by EPA TO-15 & TO-14A
Carbon tetrachloride by EPA TO-15 & TO-14A
Chloroethane by EPA TO-15
Chloroform by EPA TO-15 & TO-14A
Chloromethane by EPA TO-15 & TO-14A
cis-1,2-Dichloroethene by EPA TO-15
cis-1,2-Dichloropropene by EPA TO-15 & TO-14A
Methylene chloride by EPA TO -15 & TO-14A
Tetrachloroethane by EPA TO-15 & TO-14A
trans-1,2-Dichloroethene by EPA TO-15
trans-1,2-Dichloropropene by EPA TO-15 & TO-14A
Trichloroethene by EPA TO-15 & TO-14A
Vinyl chloride by EPA TO -15 & TO-14A
2-Butanone by EPA TO-15
4-Methyl-2-Pentanone by EPA TO-15
Hexane by EPA TO-15
Methyl tert-butyl ether by EPA TO-15
Vinyl acetate by EPA TO-15
Dibromochloromethane by EPA TO-15
Dichlorodifluoromethane by EPA TO-15 & TO-14A
Trichlorofluoromethane by EPA TO-15 & TO-14A
Naphthalene by EPA TO-15 & TO-14A
m&p Xylenes by EPA TO-15
o-Xylene by EPA TO-15
1,3-Butadiene by EPA TO-15
1,1,2-Trichlorotrifluoroethane by EPA TO-15 & TO-14A
Carbon disulfide by EPA TO-15
1,4-Dioxane by EPA TO-15
Cyclohexane by EPA TO-15
tert-Butyl Alcohol by EPA TO-15
1,3-Dichlorobenzene by EPA TO-15 & TO-14A
Heptane by EPA TO-15
Bromodichloromethane by EPA TO-15 & TO-14A

Chain of Custody Record

H&P Mobile Geochemistry Inc.
☑ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Date: July 30, 2012
WA H&P Project # KJ07612-mc
Outside Lab: KJ080112-13

Client: Kennedy Jenks Consultants
Address: 32001 32nd Ave South, Ste 100 Federal Way, WA 98001
Email: Ty Schreiner@KennedyJenks.com **
Collector: Jason Shira (509) 454-7834
Client Project # 1196016.00
Location: Yakima WA
Phone: 253.835.6400 Fax: —
Page: 1 of 1
Project Contact: Josh Happ
Turn around time: Stnd

Geotracker EDF: Yes ☐ No ☒
Global ID:
Excel EDD: Yes ☒ No ☐

Sample Receipt
Intact: ☑ Yes ☐ No
Seal Intact: ☐ Yes ☐ No ☑ N/A
Cold: ☐ Yes ☐ No ☑ N/A
Temperature: RT

Special Instructions: UPS # 1Z93T T61 87 4882 5676
** email JoshHopp@Kennedyjenks.com

Lab Work Order # E208009

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	Total # of containers	8260B Full List	8260B ☐ BTEX/OXY ☐ TPH gas	8015M TPH ☐ g ☐ d ☐ ext	418.1 TRPH	VOC's: Full List ☐ 8260B ☒ TO-15	VOC's: Short List/DTSC ☐ 8260B ☐ TO-15	VOC's: SAM, 8260B ☐ SAM A ☐ SAM B	Naphthalene ☐ 8260B ☐ TO-15	Oxygenates ☐ 8260B ☐ TO-15	TPHv gas ☐ 8260B ☐ TO-15	Ketones ☐ 8260B ☐ TO-15	Other ☐ 8260B ☐ TO-15	Leak Check Compound ☐ 1,1 DFA ☐ OTHER	Methane	Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2	Can #	Vacuum
								SOIL/GW				SOIL VAPOR/AIR ANALYSIS												
FW - influent - 001		NA	15:15	7/30/12	gas	Summa	1					1											1	-2.2
FW - inbtwn - 070			15:25				1																70	-4.0
FW - effluent			15:30				1																28	-1.8

Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
	Ecology	Janis Villarreal	H&P	8/1/12	1500
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ Disposal ☐ Return to client ☐ Pickup

Mobile Geochemistry Inc.

23 August 2012

Mr. Josh Hopp
Kennedy/Jenks Consultants - Washington
32001 32nd Ave. South, Suite 100
Federal Way, WA 98001

H&P Project: KJ081612-14
Client Project: 1196016.00 Task 8 / Yakima, WA

Dear Mr. Josh Hopp:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 16-Aug-12 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FW-Influent-323	E208062-01	Vapor	13-Aug-12	16-Aug-12
FW-Inbtwn-219	E208062-02	Vapor	13-Aug-12	16-Aug-12
FW-Effluent-217	E208062-03	Vapor	13-Aug-12	16-Aug-12
BMS-SS-1-081312	E208062-04	Vapor	13-Aug-12	16-Aug-12
BMS-SS-4-081312	E208062-05	Vapor	13-Aug-12	16-Aug-12

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Soil Gas and Vapor Analysis

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BMS-SS-1-081312 (E208062-04) Vapor	**Sampled: 13-Aug-12**	**Received: 16-Aug-12**							
Helium (LCC)	**0.8**	0.1	%	1	EH21703	17-Aug-12	17-Aug-12	ASTM D1945M	
BMS-SS-4-081312 (E208062-05) Vapor	**Sampled: 13-Aug-12**	**Received: 16-Aug-12**							
Helium (LCC)	**1.8**	0.1	%	1	EH21703	17-Aug-12	17-Aug-12	ASTM D1945M	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Influent-323 (E208062-01) Vapor Sampled: 13-Aug-12 Received: 16-Aug-12									
Dichlorodifluoromethane (F12)	ND	5.0	ug/m3	1	EH22003	20-Aug-12	20-Aug-12	EPA TO-15	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	**66**	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	**5.9**	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	**32**	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	**29**	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	**110**	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Influent-323 (E208062-01) Vapor Sampled: 13-Aug-12 Received: 16-Aug-12									
o-Xylene	ND	4.4	ug/m3	1	EH22003	20-Aug-12	20-Aug-12	EPA TO-15	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*102 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*102 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*		*77-127*	"	"	"	"	
FW-Inbtwn-219 (E208062-02) Vapor Sampled: 13-Aug-12 Received: 16-Aug-12									
Dichlorodifluoromethane (F12)	**12**	5.0	ug/m3	1	EH22003	20-Aug-12	20-Aug-12	EPA TO-15	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	**1200**	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	**33**	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	**370**	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Inbtwn-219 (E208062-02) Vapor Sampled: 13-Aug-12 Received: 16-Aug-12									
Trichloroethene	ND	5.5	ug/m3	1	EH22003	20-Aug-12	20-Aug-12	EPA TO-15	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	**4.4**	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	ND	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	
o-Xylene	ND	4.4	"	"	"	"	"	"	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*96.0 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*100 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.9 %*		*77-127*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Effluent-217 (E208062-03) Vapor Sampled: 13-Aug-12 Received: 16-Aug-12									
Dichlorodifluoromethane (F12)	**8.8**	5.0	ug/m3	1	EH22003	20-Aug-12	20-Aug-12	EPA TO-15	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	**350**	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	**84**	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	ND	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	ND	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Effluent-217 (E208062-03) Vapor Sampled: 13-Aug-12 Received: 16-Aug-12									
o-Xylene	ND	4.4	ug/m3	1	EH22003	20-Aug-12	20-Aug-12	EPA TO-15	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*98.3 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*103 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*109 %*		*77-127*	"	"	"	"	
BMS-SS-1-081312 (E208062-04) Vapor Sampled: 13-Aug-12 Received: 16-Aug-12									
Dichlorodifluoromethane (F12)	ND	2.0	ug/m3	2	EH22003	20-Aug-12	20-Aug-12	EPA TO-15	
Chloromethane	ND	0.41	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	1.4	"	"	"	"	"	"	
Vinyl chloride	ND	0.26	"	"	"	"	"	"	
Bromomethane	ND	0.79	"	"	"	"	"	"	
Chloroethane	ND	0.54	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	**1.4**	1.1	"	"	"	"	"	"	
Acetone	**5.4**	2.4	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.80	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	3.1	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	**0.97**	0.71	"	"	"	"	"	"	
Carbon disulfide	ND	0.63	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.82	"	"	"	"	"	"	
2-Butanone (MEK)	**2.7**	1.2	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
Chloroform	ND	0.49	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.1	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.82	"	"	"	"	"	"	
Benzene	**0.47**	0.32	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.64	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BMS-SS-1-081312 (E208062-04) Vapor Sampled: 13-Aug-12 Received: 16-Aug-12									
Trichloroethene	ND	1.1	ug/m3	2	EH22003	20-Aug-12	20-Aug-12	EPA TO-15	
1,2-Dichloropropane	ND	0.94	"	"	"	"	"	"	
Bromodichloromethane	ND	1.4	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.92	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	1.7	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.92	"	"	"	"	"	"	
Toluene	**2.7**	1.5	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.1	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	1.7	"	"	"	"	"	"	
Dibromochloromethane	ND	1.7	"	"	"	"	"	"	
Tetrachloroethene	**450**	41	"	60	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1.6	"	2	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.94	"	"	"	"	"	"	
Ethylbenzene	ND	0.88	"	"	"	"	"	"	
m,p-Xylene	**2.8**	0.88	"	"	"	"	"	"	
Styrene	**0.99**	0.86	"	"	"	"	"	"	
o-Xylene	**1.1**	0.88	"	"	"	"	"	"	
Bromoform	ND	2.1	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.4	"	"	"	"	"	"	
4-Ethyltoluene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**3.3**	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	4.3	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*100 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*102 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*111 %*		*77-127*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BMS-SS-4-081312 (E208062-05) Vapor	**Sampled: 13-Aug-12**	**Received: 16-Aug-12**							
Dichlorodifluoromethane (F12)	ND	2.0	ug/m3	2	EH22003	20-Aug-12	20-Aug-12	EPA TO-15	
Chloromethane	ND	0.41	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	1.4	"	"	"	"	"	"	
Vinyl chloride	ND	0.26	"	"	"	"	"	"	
Bromomethane	ND	0.79	"	"	"	"	"	"	
Chloroethane	ND	0.54	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	1.1	"	"	"	"	"	"	
Acetone	**11**	2.4	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.80	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	3.1	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	**6200**	35	"	100	"	"	"	"	
Carbon disulfide	ND	0.63	"	2	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.82	"	"	"	"	"	"	
2-Butanone (MEK)	**1.8**	1.2	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
Chloroform	**1.4**	0.49	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.1	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.82	"	"	"	"	"	"	
Benzene	**0.60**	0.32	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.64	"	"	"	"	"	"	
Trichloroethene	ND	1.1	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.94	"	"	"	"	"	"	
Bromodichloromethane	ND	1.4	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.92	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	1.7	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.92	"	"	"	"	"	"	
Toluene	**5.7**	1.5	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.1	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	1.7	"	"	"	"	"	"	
Dibromochloromethane	ND	1.7	"	"	"	"	"	"	
Tetrachloroethene	**110**	1.4	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1.6	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.94	"	"	"	"	"	"	
Ethylbenzene	**1.3**	0.88	"	"	"	"	"	"	
m,p-Xylene	**5.8**	0.88	"	"	"	"	"	"	
Styrene	ND	0.86	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BMS-SS-4-081312 (E208062-05) Vapor	**Sampled: 13-Aug-12**	**Received: 16-Aug-12**							
o-Xylene	**1.8**	0.88	ug/m3	2	EH22003	20-Aug-12	20-Aug-12	EPA TO-15	
Bromoform	ND	2.1	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.4	"	"	"	"	"	"	
4-Ethyltoluene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**3.0**	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	4.3	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*97.8 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*96.2 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*		*77-127*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Soil Gas and Vapor Analysis - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH21703 - GC										
Blank (EH21703-BLK1)				Prepared & Analyzed: 17-Aug-12						
Helium (LCC)	ND	0.1	%							

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH22003 - TO-15										
Blank (EH22003-BLK1)				Prepared & Analyzed: 20-Aug-12						
Dichlorodifluoromethane (F12)	ND	1.0	ug/m3							
Chloromethane	ND	0.21	"							
Dichlorotetrafluoroethane (F114)	ND	0.71	"							
Vinyl chloride	ND	0.13	"							
Bromomethane	ND	0.39	"							
Chloroethane	ND	0.27	"							
Trichlorofluoromethane (F11)	ND	0.56	"							
Acetone	ND	1.2	"							
1,1-Dichloroethene	ND	0.40	"							
1,1,2-Trichlorotrifluoroethane (F113)	ND	1.5	"							
Methylene chloride (Dichloromethane)	ND	0.35	"							
Carbon disulfide	ND	0.32	"							
trans-1,2-Dichloroethene	ND	0.40	"							
1,1-Dichloroethane	ND	0.41	"							
2-Butanone (MEK)	ND	0.60	"							
cis-1,2-Dichloroethene	ND	0.40	"							
Chloroform	ND	0.25	"							
1,1,1-Trichloroethane	ND	0.55	"							
1,2-Dichloroethane (EDC)	ND	0.41	"							
Benzene	ND	0.16	"							
Carbon tetrachloride	ND	0.32	"							
Trichloroethene	ND	0.55	"							
1,2-Dichloropropane	ND	0.47	"							
Bromodichloromethane	ND	0.68	"							
cis-1,3-Dichloropropene	ND	0.46	"							
4-Methyl-2-pentanone (MIBK)	ND	0.83	"							
trans-1,3-Dichloropropene	ND	0.46	"							
Toluene	ND	0.76	"							
1,1,2-Trichloroethane	ND	0.55	"							
2-Hexanone (MBK)	ND	0.83	"							
Dibromochloromethane	ND	0.86	"							
Tetrachloroethene	ND	0.69	"							
1,2-Dibromoethane (EDB)	ND	0.78	"							
1,1,1,2-Tetrachloroethane	ND	0.70	"							

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH22003 - TO-15										
Blank (EH22003-BLK1)				Prepared & Analyzed: 20-Aug-12						
Chlorobenzene	ND	0.47	ug/m3							
Ethylbenzene	ND	0.44	"							
m,p-Xylene	ND	0.44	"							
Styrene	ND	0.43	"							
o-Xylene	ND	0.44	"							
Bromoform	ND	1.0	"							
1,1,2,2-Tetrachloroethane	ND	0.70	"							
4-Ethyltoluene	ND	0.50	"							
1,3,5-Trimethylbenzene	ND	0.50	"							
1,2,4-Trimethylbenzene	ND	0.50	"							
1,3-Dichlorobenzene	ND	0.61	"							
1,4-Dichlorobenzene	ND	0.61	"							
1,2-Dichlorobenzene	ND	0.61	"							
1,2,4-Trichlorobenzene	ND	0.75	"							
Hexachlorobutadiene	ND	2.1	"							
Surrogate: 1,2-Dichloroethane-d4	*215*		*"*	*214*		*100*	*76-134*			
Surrogate: Toluene-d8	*212*		*"*	*207*		*103*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*380*		*"*	*364*		*104*	*77-127*			
LCS (EH22003-BS1)				Prepared & Analyzed: 20-Aug-12						
Dichlorodifluoromethane (F12)	9.1	1.0	ug/m3	10.1		90.7	65-135		35	
Vinyl chloride	5.6	0.13	"	5.20		108	65-135		35	
Chloroethane	5.1	0.27	"	5.36		94.8	65-135		35	
Trichlorofluoromethane (F11)	12	0.56	"	11.3		106	65-135		35	
1,1-Dichloroethene	8.3	0.40	"	8.08		103	65-135		35	
1,1,2-Trichlorotrifluoroethane (F113)	17	1.5	"	15.5		112	65-135		35	
Methylene chloride (Dichloromethane)	6.7	0.35	"	7.08		94.6	65-135		35	
trans-1,2-Dichloroethene	8.3	0.40	"	8.08		103	65-135		35	
1,1-Dichloroethane	8.7	0.41	"	8.24		106	65-135		35	
cis-1,2-Dichloroethene	7.4	0.40	"	8.00		92.0	65-135		35	
Chloroform	9.8	0.25	"	9.92		99.1	65-135		35	
1,1,1-Trichloroethane	11	0.55	"	11.1		97.8	65-135		35	
1,2-Dichloroethane (EDC)	8.1	0.41	"	8.24		98.0	65-135		35	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH22003 - TO-15										
LCS (EH22003-BS1)				Prepared & Analyzed: 20-Aug-12						
Benzene	6.3	0.16	ug/m3	6.48		97.1	65-135		35	
Carbon tetrachloride	13	0.32	"	12.8		104	65-135		35	
Trichloroethene	11	0.55	"	11.0		96.4	65-135		35	
Toluene	7.1	0.76	"	7.68		92.6	65-135		35	
1,1,2-Trichloroethane	10	0.55	"	11.1		92.2	65-135		35	
Tetrachloroethene	13	0.69	"	13.8		90.9	65-135		35	
1,1,1,2-Tetrachloroethane	13	0.70	"	14.0		92.4	65-135		35	
Ethylbenzene	8.8	0.44	"	8.84		100	65-135		35	
m,p-Xylene	19	0.44	"	17.7		106	65-135		35	
o-Xylene	9.4	0.44	"	8.84		107	65-135		35	
1,1,2,2-Tetrachloroethane	14	0.70	"	14.0		102	65-135		35	
Surrogate: 1,2-Dichloroethane-d4	*223*		*"*	*214*		*104*	*76-134*			
Surrogate: Toluene-d8	*199*		*"*	*207*		*96.2*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*424*		*"*	*364*		*116*	*77-127*			
LCS Dup (EH22003-BSD1)				Prepared & Analyzed: 20-Aug-12						
Dichlorodifluoromethane (F12)	8.7	1.0	ug/m3	10.1		86.3	65-135	4.95	35	
Vinyl chloride	5.8	0.13	"	5.20		112	65-135	3.49	35	
Chloroethane	5.6	0.27	"	5.36		104	65-135	9.43	35	
Trichlorofluoromethane (F11)	12	0.56	"	11.3		102	65-135	3.16	35	
1,1-Dichloroethene	8.0	0.40	"	8.08		99.1	65-135	3.36	35	
1,1,2-Trichlorotrifluoroethane (F113)	17	1.5	"	15.5		108	65-135	3.75	35	
Methylene chloride (Dichloromethane)	6.4	0.35	"	7.08		90.7	65-135	4.14	35	
trans-1,2-Dichloroethene	8.1	0.40	"	8.08		101	65-135	1.96	35	
1,1-Dichloroethane	8.4	0.41	"	8.24		102	65-135	3.54	35	
cis-1,2-Dichloroethene	7.2	0.40	"	8.00		89.5	65-135	2.72	35	
Chloroform	9.8	0.25	"	9.92		98.6	65-135	0.554	35	
1,1,1-Trichloroethane	11	0.55	"	11.1		97.0	65-135	0.815	35	
1,2-Dichloroethane (EDC)	7.9	0.41	"	8.24		95.9	65-135	2.21	35	
Benzene	6.0	0.16	"	6.48		92.6	65-135	4.69	35	
Carbon tetrachloride	12	0.32	"	12.8		97.5	65-135	6.39	35	
Trichloroethene	11	0.55	"	11.0		98.1	65-135	1.74	35	
Toluene	7.3	0.76	"	7.68		95.6	65-135	3.22	35	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH22003 - TO-15										
LCS Dup (EH22003-BSD1)				Prepared & Analyzed: 20-Aug-12						
1,1,2-Trichloroethane	10	0.55	ug/m3	11.1		92.7	65-135	0.537	35	
Tetrachloroethene	13	0.69	"	13.8		91.7	65-135	0.872	35	
1,1,1,2-Tetrachloroethane	13	0.70	"	14.0		94.6	65-135	2.34	35	
Ethylbenzene	9.0	0.44	"	8.84		102	65-135	2.02	35	
m,p-Xylene	19	0.44	"	17.7		106	65-135	0.774	35	
o-Xylene	9.4	0.44	"	8.84		107	65-135	0.140	35	
1,1,2,2-Tetrachloroethane	15	0.70	"	14.0		104	65-135	1.99	35	
Surrogate: 1,2-Dichloroethane-d4	*215*		"	*214*		*101*	*76-134*			
Surrogate: Toluene-d8	*202*		"	*207*		*97.6*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*406*		"	*364*		*111*	*77-127*			

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS
Certificate# 2742, 2745, & 2741 approved for LUFT
Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods:

1,2,4-Trichlorobenzene by EPA TO-15 & TO-14A
Hexachlorobutadiene by EPA TO-15 & TO-14A
1,2,4-Trimethylbenzene by EPA TO -14A
1,2-Dichlorobenzene by EPA TO-15 & TO-14A
1,3,5-Trimethylbenzene by EPA TO -14A
1,4-Dichlorobenzene by EPA TO-15 & TO-14A
Benzene by EPA TO-15 & TO-14A
Chlorobenzene by EPA TO-15 & TO-14A
Ethyl benzene by EPA TO-15 & TO-14A
Styrene by EPA TO-15 & TO-14A
Toluene by EPA TO-15 & TO-14A
Total Xylenes by EPA TO-15 & TO-14A
1,1,1-Trichloroethane by EPA TO-15 & TO-14A
1,1,2,2-Tetrachloroethane by EPA TO-15 & TO-14A
1,1,2-Trichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethene by EPA TO-15 & TO-14A
1,2-Dichloroethane by EPA TO-15 & TO-14A
1,2-Dichloropropane by EPA TO-15 & TO-14A
Benzyl Chloride by EPA TO-15 & TO-14A
Bromoform by EPA TO-15
Bromomethane by EPA TO-15 & TO-14A
Carbon tetrachloride by EPA TO-15 & TO-14A
Chloroethane by EPA TO-15
Chloroform by EPA TO-15 & TO-14A
Chloromethane by EPA TO-15 & TO-14A
cis-1,2-Dichloroethene by EPA TO-15
cis-1,2-Dichloropropene by EPA TO-15 & TO-14A
Methylene chloride by EPA TO -15 & TO-14A
Tetrachloroethane by EPA TO-15 & TO-14A
trans-1,2-Dichloroethene by EPA TO-15
trans-1,2-Dichloropropene by EPA TO-15 & TO-14A
Trichloroethene by EPA TO-15 & TO-14A
Vinyl chloride by EPA TO -15 & TO-14A
2-Butanone by EPA TO-15
4-Methyl-2-Pentanone by EPA TO-15
Hexane by EPA TO-15
Methyl tert-butyl ether by EPA TO-15
Vinyl acetate by EPA TO-15
Dibromochloromethane by EPA TO-15
Dichlorodifluoromethane by EPA TO-15 & TO-14A
Trichlorofluoromethane by EPA TO-15 & TO-14A
Naphthalene by EPA TO-15 & TO-14A
m&p Xylenes by EPA TO-15
o-Xylene by EPA TO-15
1,3-Butadiene by EPA TO-15
1,1,2-Trichlorotrifluoroethane by EPA TO-15 & TO-14A
Carbon disulfide by EPA TO-15
1,4-Dioxane by EPA TO-15
Cyclohexane by EPA TO-15
tert-Butyl Alcohol by EPA TO-15
1,3-Dichlorobenzene by EPA TO-15 & TO-14A
Heptane by EPA TO-15
Bromodichloromethane by EPA TO-15 & TO-14A

Chain of Custody Record

Mobile Geochemistry Inc.

☒ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Date: 8-13-12
WA H&P Project # KJ08l612-14
Outside Lab:

Client: Kennedy/Jenks Consultants
Address: 32001 32nd Ave S, Suite 100 Federal Way, WA 98001
Email: joshhopp@kennedyjenks.com / tyschreiner@kennedyjenks.com
Collector: Jason Shira - Ecology
Client Project # 1196016.00 Task 8
Location: Yakima, WA
Phone: 253-835-6408
Fax:
Page: 1 of 2
Project Contact: Josh Hopp / Ty Schreiner
Turn around time: Standard

Geotracker EDF: Yes ☐ No ☒
Global ID:
Excel EDD: Yes ☒ No ☐

Sample Receipt
Intact: ☑ Yes ☐ No
Seal Intact: ☑ Yes ☐ No ☐ N/A
Cold: ☐ Yes ☐ No ☑ N/A
Temperature: RT

Special Instructions:
UPS TRACK# 1Z 90T T61 87 4668 4644

Lab Work Order # E208062

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	Total # of containers	8260B Full List	8260B ☐ BTEX/OXY ☐ TPH gas	8015M TPH ☐ g ☐ d ☐ ext	418.1 TRPH	VOC's: Full List ☐ 8260B ☒ TO-15	VOC's: Short List/DTSC ☐ 8260B ☐ TO-15	VOC's: SAM, 8260B ☐ SAM A ☐ SAM B	Naphthalene ☐ 8260B ☐ TO-15	Oxygenates ☐ 8260B ☐ TO-15	TPHv gas ☐ 8260B ☐ TO-15	Ketones ☐ 8260B ☐ TO-15	Other ____ ☐ 8260B ☐ TO-15	Leak Check Compound ☐ 1,1 DFA ☐ OTHER	Methane	Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2	CAN#	VA<#
								SOIL/GW				SOIL VAPOR/AIR ANALYSIS												
FW-Influent-323		—	1509	8-13-12	Vapor	400mL summa	1					X											327-28	
FW-Inbtwn-219		—	1513	↓	↓	↓	1					X											216-4.1	
FW-Effluent-217		—	1519	↓	↓	↓	1					X											217-4.3	

Relinquished by: (Signature)	(company) Kennedy/Jenks	Received by: (Signature)	(company)	Date: 8/14/12 Time: 0930
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company) H&P	Date: 8/16/12 Time: 1100
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date: Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ Disposal ☐ Return to client ☐ Pickup

Chain of Custody Record

H&P Mobile Geochemistry Inc.
☒ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Date: 8-13-12
WA H&P Project # KJO8/612-14
Outside Lab:

Client: Kennedy/Jenks Consultants
Address: 32001 32nd Ave S, Suite 100 Federal Way, WA 98001
Email: Josh.Hopp@KennedyJenks.com / Ty.Schreiner@KennedyJenks.com
Collector: Josh Hopp
Client Project # 11960.00 Task 9
Location: Yakima, WA
Phone: 253-835-6408
Fax:
Page: 2 of 2
Project Contact: Josh Hopp / Ty Schreiner
Turn around time: Standard

Geotracker EDF: Yes ☐ No ☒
Global ID:
Excel EDD: Yes ☒ No ☐

Sample Receipt
Intact: ☑ Yes ☐ No
Seal Intact: ☑ Yes ☐ No ☐ N/A
Cold: ☐ Yes ☐ No ☑ N/A
Temperature: RT

Special Instructions:

Lab Work Order # E208062

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	Total # of containers	8260B Full List	8260B ☐ BTEX/OXY ☐ TPH gas	8015M TPH ☐ g ☐ d ☐ ext	418.1 TRPH	VOC's: Full List ☐ 8260B ☒ TO-15	VOC's: Short List/DTSC ☐ 8260B ☐ TO-15	VOC's: SAM, 8260B ☐ SAM A ☐ SAM B	Naphthalene ☐ 8260B ☐ TO-15	Oxygenates ☐ 8260B ☐ TO-15	TPHv gas ☐ 8260B ☐ TO-15	Ketones ☐ 8260B ☐ TO-15	Other ____ ☐ 8260B ☐ TO-15	Leak Check Compound ☐ 1,1 DFA ☒ OTHER #2	Methane	Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2	CAN#	VA-C#
								SOIL/GW				SOIL VAPOR/AIR ANALYSIS												
BMS-SS-2-081312		250mL	1308	8-13-12	~~Soil~~ Grab	6L Summa	1					X								X			289-5.0	
BMS-SS-4-081312		1000mL	1200	↓	↓	↓	1					X								X			329-5.6	

Relinquished by: (Signature) JCH	(company) Kennedy/Jenks	Received by: (Signature)	(company)	Date: 8/14/12	Time: 0930
Relinquished by: (Signature)	(company)	Received by: (Signature) SMartin	(company) HP	Date: 8/16/12	Time: 1100
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ Disposal ☐ Return to client ☐ Pickup

Mobile Geochemistry Inc.

10 September 2012

Mr. Josh Hopp
Kennedy/Jenks Consultants - Washington
32001 32nd Ave. South, Suite 100
Federal Way, WA 98001

H&P Project: KJ083012-10
Client Project: Frank Wear Day Care

Dear Mr. Josh Hopp:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 30-Aug-12 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ083012-10	
32001 32nd Ave. South, Suite 100	Project Number: Frank Wear Day Care	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	10-Sep-12 12:21

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FW-Influent-067	E208099-01	Vapor	28-Aug-12	30-Aug-12
FW-Inbtwn-219	E208099-02	Vapor	28-Aug-12	30-Aug-12
FW-Effluent-355	E208099-03	Vapor	28-Aug-12	30-Aug-12

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ083012-10	
32001 32nd Ave. South, Suite 100	Project Number: Frank Wear Day Care	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	10-Sep-12 12:21

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Influent-067 (E208099-01) Vapor	**Sampled: 28-Aug-12**	**Received: 30-Aug-12**							
Dichlorodifluoromethane (F12)	ND	5.0	ug/m3	1	EH23007	30-Aug-12	30-Aug-12	EPA TO-15	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	**140**	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	**25**	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	**100**	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	**35**	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	**380**	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ083012-10	
32001 32nd Ave. South, Suite 100	Project Number: Frank Wear Day Care	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	10-Sep-12 12:21

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Influent-067 (E208099-01) Vapor Sampled: 28-Aug-12 Received: 30-Aug-12									
o-Xylene	ND	4.4	ug/m3	1	EH23007	30-Aug-12	30-Aug-12	EPA TO-15	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*93.5 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*93.8 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*107 %*		*77-127*	"	"	"	"	
FW-Inbtwn-219 (E208099-02) Vapor Sampled: 28-Aug-12 Received: 30-Aug-12									
Dichlorodifluoromethane (F12)	**5.1**	5.0	ug/m3	1	EH23007	30-Aug-12	30-Aug-12	EPA TO-15	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	**120**	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	**28**	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ083012-10	
32001 32nd Ave. South, Suite 100	Project Number: Frank Wear Day Care	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	10-Sep-12 12:21

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Inbtwn-219 (E208099-02) Vapor Sampled: 28-Aug-12 Received: 30-Aug-12									
Trichloroethene	ND	5.5	ug/m3	1	EH23007	30-Aug-12	30-Aug-12	EPA TO-15	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	ND	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	ND	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	
o-Xylene	ND	4.4	"	"	"	"	"	"	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*109 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*99.5 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*104 %*		*77-127*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ083012-10	
32001 32nd Ave. South, Suite 100	Project Number: Frank Wear Day Care	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	10-Sep-12 12:21

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Effluent-355 (E208099-03) Vapor	**Sampled: 28-Aug-12**	**Received: 30-Aug-12**							
Dichlorodifluoromethane (F12)	**21**	5.0	ug/m3	1	EH23007	30-Aug-12	30-Aug-12	EPA TO-15	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	**640**	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	**190**	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	**56**	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	ND	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	**9.2**	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ083012-10	
32001 32nd Ave. South, Suite 100	Project Number: Frank Wear Day Care	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	10-Sep-12 12:21

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Effluent-355 (E208099-03) Vapor Sampled: 28-Aug-12 Received: 30-Aug-12									
o-Xylene	ND	4.4	ug/m3	1	EH23007	30-Aug-12	30-Aug-12	EPA TO-15	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*114 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*100 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*		*77-127*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ083012-10	
32001 32nd Ave. South, Suite 100	Project Number: Frank Wear Day Care	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	10-Sep-12 12:21

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH23007 - TO-15										
Blank (EH23007-BLK1)				Prepared & Analyzed: 30-Aug-12						
Dichlorodifluoromethane (F12)	ND	5.0	ug/m3							
Chloromethane	ND	2.1	"							
Dichlorotetrafluoroethane (F114)	ND	7.1	"							
Vinyl chloride	ND	2.6	"							
Bromomethane	ND	16	"							
Chloroethane	ND	8.0	"							
Trichlorofluoromethane (F11)	ND	5.6	"							
Acetone	ND	24	"							
1,1-Dichloroethene	ND	4.0	"							
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"							
Methylene chloride (Dichloromethane)	ND	3.5	"							
Carbon disulfide	ND	6.3	"							
trans-1,2-Dichloroethene	ND	8.0	"							
1,1-Dichloroethane	ND	4.1	"							
2-Butanone (MEK)	ND	30	"							
cis-1,2-Dichloroethene	ND	4.0	"							
Chloroform	ND	4.9	"							
1,1,1-Trichloroethane	ND	5.5	"							
1,2-Dichloroethane (EDC)	ND	4.1	"							
Benzene	ND	3.2	"							
Carbon tetrachloride	ND	6.4	"							
Trichloroethene	ND	5.5	"							
1,2-Dichloropropane	ND	9.4	"							
Bromodichloromethane	ND	6.8	"							
cis-1,3-Dichloropropene	ND	4.6	"							
4-Methyl-2-pentanone (MIBK)	ND	8.3	"							
trans-1,3-Dichloropropene	ND	4.6	"							
Toluene	ND	3.8	"							
1,1,2-Trichloroethane	ND	5.5	"							
2-Hexanone (MBK)	ND	8.3	"							
Dibromochloromethane	ND	8.6	"							
Tetrachloroethene	ND	6.9	"							
1,2-Dibromoethane (EDB)	ND	7.8	"							
1,1,1,2-Tetrachloroethane	ND	7.0	"							

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ083012-10	
32001 32nd Ave. South, Suite 100	Project Number: Frank Wear Day Care	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	10-Sep-12 12:21

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH23007 - TO-15										
Blank (EH23007-BLK1)				Prepared & Analyzed: 30-Aug-12						
Chlorobenzene	ND	4.7	ug/m3							
Ethylbenzene	ND	4.4	"							
m,p-Xylene	ND	8.8	"							
Styrene	ND	4.3	"							
o-Xylene	ND	4.4	"							
Bromoform	ND	10	"							
1,1,2,2-Tetrachloroethane	ND	7.0	"							
4-Ethyltoluene	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
1,3-Dichlorobenzene	ND	12	"							
1,4-Dichlorobenzene	ND	12	"							
1,2-Dichlorobenzene	ND	12	"							
1,2,4-Trichlorobenzene	ND	7.5	"							
Hexachlorobutadiene	ND	11	"							
Surrogate: 1,2-Dichloroethane-d4	*218*		*"*	*214*		*102*	*76-134*			
Surrogate: Toluene-d8	*188*		*"*	*207*		*90.8*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*395*		*"*	*364*		*108*	*77-127*			
LCS (EH23007-BS1)				Prepared & Analyzed: 30-Aug-12						
Dichlorodifluoromethane (F12)	94	5.0	ug/m3	101		93.6	65-135			
Vinyl chloride	38	2.6	"	52.0		73.7	65-135			
Chloroethane	42	8.0	"	53.6		77.9	65-135			
Trichlorofluoromethane (F11)	110	5.6	"	113		97.9	65-135			
1,1-Dichloroethene	69	4.0	"	80.8		84.8	65-135			
1,1,2-Trichlorotrifluoroethane (F113)	140	7.7	"	155		88.3	65-135			
Methylene chloride (Dichloromethane)	56	3.5	"	70.8		79.5	65-135			
trans-1,2-Dichloroethene	65	8.0	"	80.8		80.0	65-135			
1,1-Dichloroethane	66	4.1	"	82.4		80.2	65-135			
cis-1,2-Dichloroethene	67	4.0	"	80.0		83.5	65-135			
Chloroform	90	4.9	"	99.2		90.8	65-135			
1,1,1-Trichloroethane	98	5.5	"	111		87.9	65-135			
1,2-Dichloroethane (EDC)	72	4.1	"	82.4		87.9	65-135			

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ083012-10	
32001 32nd Ave. South, Suite 100	Project Number: Frank Wear Day Care	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	10-Sep-12 12:21

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH23007 - TO-15										
LCS (EH23007-BS1)				Prepared & Analyzed: 30-Aug-12						
Benzene	57	3.2	ug/m3	64.8		88.2	65-135			
Carbon tetrachloride	110	6.4	"	128		86.5	65-135			
Trichloroethene	98	5.5	"	110		89.7	65-135			
Toluene	75	3.8	"	76.8		98.0	65-135			
1,1,2-Trichloroethane	95	5.5	"	111		85.3	65-135			
Tetrachloroethene	120	6.9	"	138		87.1	65-135			
1,1,1,2-Tetrachloroethane	120	7.0	"	140		84.7	65-135			
Ethylbenzene	88	4.4	"	88.4		99.7	65-135			
m,p-Xylene	170	8.8	"	177		96.7	65-135			
o-Xylene	94	4.4	"	88.4		107	65-135			
1,1,2,2-Tetrachloroethane	130	7.0	"	140		94.2	65-135			
Surrogate: 1,2-Dichloroethane-d4	*229*		*"*	*214*		*107*	*76-134*			
Surrogate: Toluene-d8	*208*		*"*	*207*		*100*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*397*		*"*	*364*		*109*	*77-127*			
LCS Dup (EH23007-BSD1)				Prepared & Analyzed: 30-Aug-12						
Dichlorodifluoromethane (F12)	100	5.0	ug/m3	101		102	65-135	8.17	35	
Vinyl chloride	48	2.6	"	52.0		92.3	65-135	22.4	35	
Chloroethane	53	8.0	"	53.6		98.2	65-135	23.1	35	
Trichlorofluoromethane (F11)	120	5.6	"	113		104	65-135	6.07	35	
1,1-Dichloroethene	75	4.0	"	80.8		93.2	65-135	9.34	35	
1,1,2-Trichlorotrifluoroethane (F113)	150	7.7	"	155		97.6	65-135	10.0	35	
Methylene chloride (Dichloromethane)	64	3.5	"	70.8		90.1	65-135	12.4	35	
trans-1,2-Dichloroethene	72	8.0	"	80.8		89.7	65-135	11.5	35	
1,1-Dichloroethane	74	4.1	"	82.4		89.8	65-135	11.4	35	
cis-1,2-Dichloroethene	68	4.0	"	80.0		85.1	65-135	1.91	35	
Chloroform	96	4.9	"	99.2		96.4	65-135	6.01	35	
1,1,1-Trichloroethane	110	5.5	"	111		94.5	65-135	7.23	35	
1,2-Dichloroethane (EDC)	81	4.1	"	82.4		98.4	65-135	11.3	35	
Benzene	61	3.2	"	64.8		94.2	65-135	6.62	35	
Carbon tetrachloride	120	6.4	"	128		92.0	65-135	6.15	35	
Trichloroethene	97	5.5	"	110		88.6	65-135	1.23	35	
Toluene	76	3.8	"	76.8		99.4	65-135	1.46	35	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ083012-10	
32001 32nd Ave. South, Suite 100	Project Number: Frank Wear Day Care	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	10-Sep-12 12:21

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH23007 - TO-15										
LCS Dup (EH23007-BSD1)				Prepared & Analyzed: 30-Aug-12						
1,1,2-Trichloroethane	96	5.5	ug/m3	111		86.8	65-135	1.73	35	
Tetrachloroethene	120	6.9	"	138		86.8	65-135	0.343	35	
1,1,1,2-Tetrachloroethane	120	7.0	"	140		83.9	65-135	0.945	35	
Ethylbenzene	89	4.4	"	88.4		100	65-135	0.398	35	
m,p-Xylene	170	8.8	"	177		95.1	65-135	1.61	35	
o-Xylene	93	4.4	"	88.4		105	65-135	1.45	35	
1,1,2,2-Tetrachloroethane	130	7.0	"	140		92.2	65-135	2.19	35	
Surrogate: 1,2-Dichloroethane-d4	*256*		*"*	*214*		*119*	*76-134*			
Surrogate: Toluene-d8	*211*		*"*	*207*		*102*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*403*		*"*	*364*		*111*	*77-127*			

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ083012-10	
32001 32nd Ave. South, Suite 100	Project Number: Frank Wear Day Care	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	10-Sep-12 12:21

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS
Certificate# 2742, 2745, & 2741 approved for LUFT
Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods:

1,2,4-Trichlorobenzene by EPA TO-15 & TO-14A
Hexachlorobutadiene by EPA TO-15 & TO-14A
1,2,4-Trimethylbenzene by EPA TO -14A
1,2-Dichlorobenzene by EPA TO-15 & TO-14A
1,3,5-Trimethylbenzene by EPA TO -14A
1,4-Dichlorobenzene by EPA TO-15 & TO-14A
Benzene by EPA TO-15 & TO-14A
Chlorobenzene by EPA TO-15 & TO-14A
Ethyl benzene by EPA TO-15 & TO-14A
Styrene by EPA TO-15 & TO-14A
Toluene by EPA TO-15 & TO-14A
Total Xylenes by EPA TO-15 & TO-14A
1,1,1-Trichloroethane by EPA TO-15 & TO-14A
1,1,2,2-Tetrachloroethane by EPA TO-15 & TO-14A
1,1,2-Trichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethene by EPA TO-15 & TO-14A
1,2-Dichloroethane by EPA TO-15 & TO-14A
1,2-Dichloropropane by EPA TO-15 & TO-14A
Benzyl Chloride by EPA TO-15 & TO-14A
Bromoform by EPA TO-15
Bromomethane by EPA TO-15 & TO-14A
Carbon tetrachloride by EPA TO-15 & TO-14A
Chloroethane by EPA TO-15
Chloroform by EPA TO-15 & TO-14A
Chloromethane by EPA TO-15 & TO-14A
cis-1,2-Dichloroethene by EPA TO-15
cis-1,2-Dichloropropene by EPA TO-15 & TO-14A
Methylene chloride by EPA TO -15 & TO-14A
Tetrachloroethane by EPA TO-15 & TO-14A
trans-1,2-Dichloroethene by EPA TO-15
trans-1,2-Dichloropropene by EPA TO-15 & TO-14A
Trichloroethene by EPA TO-15 & TO-14A
Vinyl chloride by EPA TO -15 & TO-14A
2-Butanone by EPA TO-15
4-Methyl-2-Pentanone by EPA TO-15
Hexane by EPA TO-15
Methyl tert-butyl ether by EPA TO-15
Vinyl acetate by EPA TO-15
Dibromochloromethane by EPA TO-15
Dichlorodifluoromethane by EPA TO-15 & TO-14A
Trichlorofluoromethane by EPA TO-15 & TO-14A
Naphthalene by EPA TO-15 & TO-14A
m&p Xylenes by EPA TO-15
o-Xylene by EPA TO-15
1,3-Butadiene by EPA TO-15
1,1,2-Trichlorotrifluoroethane by EPA TO-15 & TO-14A
Carbon disulfide by EPA TO-15
1,4-Dioxane by EPA TO-15
Cyclohexane by EPA TO-15
tert-Butyl Alcohol by EPA TO-15
1,3-Dichlorobenzene by EPA TO-15 & TO-14A
Heptane by EPA TO-15
Bromodichloromethane by EPA TO-15 & TO-14A

This certification applies to samples analyzed in summa canisters.

Chain of Custody Record

H&P Mobile Geochemistry Inc.

☑ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Date: Aug 28, 2012
H&P Project # UJ082212-mc
(2a) ~~Outside Lab:~~ KJ083012-10

Client: Kennedy Jenks
Address: 32001 32nd Ave South, Suite 100, Federal Way, WA 98001
Email: joshhopp@kennedyjenks.com
Collector: Jason Shira
Client Project #
Location: Frank Wilcox Day Care Yakima WA
Phone: (253) 835-6408 Fax:
Page: 1 of 1
Project Contact: Josh Hopp
Turn around time: Stnd.

Geotracker EDF: Yes ☐ No ☐
Global ID:
Excel EDD: Yes ☐ No ☐

Sample Receipt
Intact: ☑ Yes ☐ No
Seal Intact: ☑ Yes ☐ No ☐ N/A
Cold: ☐ Yes ☐ No ☑ N/A
Temperature: RT

Special Instructions:
UPS TRACK# 1Z 93T TG1 87 4788 5069

Lab Work Order # EZ08099

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	Total # of containers	8260B Full List	8260B ☐ BTEX/OXY ☐ TPH gas	8015M TPH ☐ g ☐ d ☐ ext	418.1 TRPH	VOC's: Full List ☐ 8260B ☑ TO-15	VOC's: Short List/DTSC ☐ 8260B ☐ TO-15	VOC's: SAM, 8260B ☐ SAM A ☐ SAM B	Naphthalene ☐ 8260B ☐ TO-15	Oxygenates ☐ 8260B ☐ TO-15	TPHv gas ☐ 8260B ☐ TO-15	Ketones ☐ 8260B ☐ TO-15	Other ____ ☐ 8260B ☐ TO-15	Leak Check Compound ☐ 1,1 DFA ☐ OTHER	Methane	Fixed Gases ☐ CO2 ☐ O2 ☐ N2	CAN #	VAC #
								SOIL/GW				SOIL VAPOR/AIR ANALYSIS												
FW-Influent-067	influent	-	15:15	8/28	V	Summa	1					|											067	-3.1
FW-Inbtwn-219	inbetween	|	15:25	|	|	|	1																219	-3.2
FW-Effluent-355	effluent		15:30				1																	355	-1.5

Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
	Ecology		HP	8/30/12	0955
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ Disposal ☐ Return to client ☐ Pickup

Mobile Geochemistry Inc.

28 September 2012

Mr. Josh Hopp
Kennedy/Jenks Consultants - Washington
32001 32nd Ave. South, Suite 100
Federal Way, WA 98001

H&P Project: KJ091812-12
Client Project: 1196016.00/Task8/00 / Yakima, WA

Dear Mr. Josh Hopp:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 18-Sep-12 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-12	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task8/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:00

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FW-Influent-101	E209067-01	Vapor	12-Sep-12	18-Sep-12
FW-Inbtwn-105	E209067-02	Vapor	12-Sep-12	18-Sep-12
FW-Effluent-102	E209067-03	Vapor	12-Sep-12	18-Sep-12

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-12	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task8/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Influent-101 (E209067-01) Vapor Sampled: 12-Sep-12 Received: 18-Sep-12									
Dichlorodifluoromethane (F12)	ND	5.0	ug/m3	1	EI22103	20-Sep-12	20-Sep-12	EPA TO-15	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	**100**	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	**45**	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	**19**	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	**32**	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	**120**	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	**260**	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	**6.6**	4.4	"	"	"	"	"	"	
m,p-Xylene	**17**	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-12	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task8/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Influent-101 (E209067-01) Vapor Sampled: 12-Sep-12 Received: 18-Sep-12									
o-Xylene	**6.9**	4.4	ug/m3	1	EI22103	20-Sep-12	20-Sep-12	EPA TO-15	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: Toluene-d8		*109 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*		*77-127*	"	"	"	"	
FW-Inbtwn-105 (E209067-02) Vapor Sampled: 12-Sep-12 Received: 18-Sep-12									
Dichlorodifluoromethane (F12)	ND	5.0	ug/m3	1	EI22103	20-Sep-12	20-Sep-12	EPA TO-15	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	**88**	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	**51**	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-12	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task8/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Inbtwn-105 (E209067-02) Vapor Sampled: 12-Sep-12 Received: 18-Sep-12									
1,2-Dichloropropane	ND	9.4	ug/m3	1	EI22103	20-Sep-12	20-Sep-12	EPA TO-15	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	**5.0**	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	ND	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	
o-Xylene	ND	4.4	"	"	"	"	"	"	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: Toluene-d8		*108 %*	*78-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*107 %*	*77-127*		"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-12	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task8/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Effluent-102 (E209067-03) Vapor Sampled: 12-Sep-12 Received: 18-Sep-12									
Dichlorodifluoromethane (F12)	**20**	5.0	ug/m3	1	EI22103	20-Sep-12	20-Sep-12	EPA TO-15	QL-1H
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	**580**	24	"	"	"	"	"	"	E
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	**9.3**	3.5	"	"	"	"	"	"	
Carbon disulfide	**6.5**	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	**130**	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	**130**	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	**11**	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	**280**	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	ND	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	**19**	4.4	"	"	"	"	"	"	
m,p-Xylene	**45**	8.8	"	"	"	"	"	"	
Styrene	**4.9**	4.3	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-12	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task8/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Effluent-102 (E209067-03) Vapor Sampled: 12-Sep-12 Received: 18-Sep-12									
o-Xylene	**18**	4.4	ug/m3	1	EI22103	20-Sep-12	20-Sep-12	EPA TO-15	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**6.1**	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: Toluene-d8		*110 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*		*77-127*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-12	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task8/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:00

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI22103 - TO-15										
Blank (EI22103-BLK1)				Prepared & Analyzed: 20-Sep-12						
Dichlorodifluoromethane (F12)	ND	5.0	ug/m3							
Chloromethane	ND	2.1	"							
Dichlorotetrafluoroethane (F114)	ND	7.1	"							
Vinyl chloride	ND	2.6	"							
Bromomethane	ND	16	"							
Chloroethane	ND	8.0	"							
Trichlorofluoromethane (F11)	ND	5.6	"							
Acetone	ND	24	"							
1,1-Dichloroethene	ND	4.0	"							
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"							
Methylene chloride (Dichloromethane)	ND	3.5	"							
Carbon disulfide	ND	6.3	"							
trans-1,2-Dichloroethene	ND	8.0	"							
1,1-Dichloroethane	ND	4.1	"							
2-Butanone (MEK)	ND	30	"							
cis-1,2-Dichloroethene	ND	4.0	"							
Chloroform	ND	4.9	"							
1,1,1-Trichloroethane	ND	5.5	"							
1,2-Dichloroethane (EDC)	ND	4.1	"							
Benzene	ND	3.2	"							
Carbon tetrachloride	ND	6.4	"							
Trichloroethene	ND	5.5	"							
1,2-Dichloropropane	ND	9.4	"							
Bromodichloromethane	ND	6.8	"							
cis-1,3-Dichloropropene	ND	4.6	"							
4-Methyl-2-pentanone (MIBK)	ND	8.3	"							
trans-1,3-Dichloropropene	ND	4.6	"							
Toluene	ND	3.8	"							
1,1,2-Trichloroethane	ND	5.5	"							
2-Hexanone (MBK)	ND	8.3	"							
Dibromochloromethane	ND	8.6	"							
Tetrachloroethene	ND	6.9	"							
1,2-Dibromoethane (EDB)	ND	7.8	"							
1,1,1,2-Tetrachloroethane	ND	7.0	"							

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-12	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task8/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:00

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI22103 - TO-15										
Blank (EI22103-BLK1)				Prepared & Analyzed: 20-Sep-12						
Chlorobenzene	ND	4.7	ug/m3							
Ethylbenzene	ND	4.4	"							
m,p-Xylene	ND	8.8	"							
Styrene	ND	4.3	"							
o-Xylene	ND	4.4	"							
Bromoform	ND	10	"							
1,1,2,2-Tetrachloroethane	ND	7.0	"							
4-Ethyltoluene	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
1,3-Dichlorobenzene	ND	12	"							
1,4-Dichlorobenzene	ND	12	"							
1,2-Dichlorobenzene	ND	12	"							
1,2,4-Trichlorobenzene	ND	7.5	"							
Hexachlorobutadiene	ND	11	"							
Surrogate: Toluene-d8	*209*		*"*	*192*		*109*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*380*		*"*	*364*		*104*	*77-127*			
LCS (EI22103-BS1)				Prepared & Analyzed: 20-Sep-12						
Dichlorodifluoromethane (F12)	130	5.0	ug/m3	101		132	65-135		35	
Vinyl chloride	57	2.6	"	52.0		110	65-135		35	
Chloroethane	61	8.0	"	53.6		115	65-135		35	
Trichlorofluoromethane (F11)	160	5.6	"	113		138	65-135		35	QL-1H
1,1-Dichloroethene	97	4.0	"	80.8		120	65-135		35	
1,1,2-Trichlorotrifluoroethane (F113)	190	7.7	"	155		122	65-135		35	
Methylene chloride (Dichloromethane)	79	3.5	"	70.8		111	65-135		35	
trans-1,2-Dichloroethene	91	8.0	"	80.8		113	65-135		35	
1,1-Dichloroethane	94	4.1	"	82.4		114	65-135		35	
cis-1,2-Dichloroethene	84	4.0	"	80.0		105	65-135		35	
Chloroform	120	4.9	"	99.2		122	65-135		35	
1,1,1-Trichloroethane	140	5.5	"	111		123	65-135		35	
1,2-Dichloroethane (EDC)	110	4.1	"	82.4		131	65-135		35	
Benzene	60	3.2	"	64.8		93.3	65-135		35	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-12	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task8/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:00

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI22103 - TO-15										
LCS (EI22103-BS1)				Prepared & Analyzed: 20-Sep-12						
Carbon tetrachloride	160	6.4	ug/m3	128		124	65-135		35	
Trichloroethene	120	5.5	"	110		112	65-135		35	
Toluene	77	3.8	"	76.8		101	65-135		35	
1,1,2-Trichloroethane	120	5.5	"	111		105	65-135		35	
Tetrachloroethene	150	6.9	"	138		109	65-135		35	
1,1,1,2-Tetrachloroethane	150	7.0	"	140		104	65-135		35	
Ethylbenzene	86	4.4	"	88.4		97.0	65-135		35	
m,p-Xylene	180	8.8	"	177		102	65-135		35	
o-Xylene	91	4.4	"	88.4		103	65-135		35	
1,1,2,2-Tetrachloroethane	140	7.0	"	140		102	65-135		35	
Surrogate: Toluene-d8	*212*		*"*	*192*		*110*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*400*		*"*	*364*		*110*	*77-127*			
LCS Dup (EI22103-BSD1)				Prepared & Analyzed: 20-Sep-12						
Dichlorodifluoromethane (F12)	140	5.0	ug/m3	101		140	65-135	5.72	35	QL-1H
Vinyl chloride	60	2.6	"	52.0		115	65-135	3.94	35	
Chloroethane	63	8.0	"	53.6		117	65-135	2.11	35	
Trichlorofluoromethane (F11)	160	5.6	"	113		139	65-135	0.503	35	QL-1H
1,1-Dichloroethene	98	4.0	"	80.8		121	65-135	1.41	35	
1,1,2-Trichlorotrifluoroethane (F113)	190	7.7	"	155		121	65-135	0.490	35	
Methylene chloride (Dichloromethane)	77	3.5	"	70.8		108	65-135	2.82	35	
trans-1,2-Dichloroethene	90	8.0	"	80.8		111	65-135	1.60	35	
1,1-Dichloroethane	94	4.1	"	82.4		114	65-135	0.131	35	
cis-1,2-Dichloroethene	84	4.0	"	80.0		105	65-135	0.0959	35	
Chloroform	120	4.9	"	99.2		121	65-135	0.777	35	
1,1,1-Trichloroethane	140	5.5	"	111		123	65-135	0.726	35	
1,2-Dichloroethane (EDC)	110	4.1	"	82.4		133	65-135	1.02	35	
Benzene	61	3.2	"	64.8		94.5	65-135	1.33	35	
Carbon tetrachloride	160	6.4	"	128		126	65-135	2.08	35	
Trichloroethene	120	5.5	"	110		112	65-135	0.400	35	
Toluene	77	3.8	"	76.8		101	65-135	0.0494	35	
1,1,2-Trichloroethane	120	5.5	"	111		104	65-135	1.19	35	
Tetrachloroethene	150	6.9	"	138		108	65-135	1.33	35	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-12	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task8/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:00

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI22103 - TO-15										
LCS Dup (EI22103-BSD1)				Prepared & Analyzed: 20-Sep-12						
1,1,1,2-Tetrachloroethane	150	7.0	ug/m3	140		106	65-135	1.42	35	
Ethylbenzene	85	4.4	"	88.4		96.6	65-135	0.462	35	
m,p-Xylene	180	8.8	"	177		103	65-135	0.973	35	
o-Xylene	92	4.4	"	88.4		104	65-135	0.909	35	
1,1,2,2-Tetrachloroethane	150	7.0	"	140		105	65-135	1.97	35	
Surrogate: Toluene-d8	*211*		*"*	*192*		*110*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*401*		*"*	*364*		*110*	*77-127*			

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-12	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task8/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:00

Notes and Definitions

QL-1H	The LCS and/or LCSD recoveries fell above the established control specifications for this analyte. Any result for this compound is qualified and should be considered biased high.
QL-1H	The LCS and/or LCSD recoveries fell above the established control specifications for this analyte. Any result for this compound is qualified and should be considered biased high.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-12	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task8/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:00

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS
Certificate# 2742, 2745, & 2741 approved for LUFT
Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods:

1,2,4-Trichlorobenzene by EPA TO-15 & TO-14A
Hexachlorobutadiene by EPA TO-15 & TO-14A
1,2,4-Trimethylbenzene by EPA TO -14A
1,2-Dichlorobenzene by EPA TO-15 & TO-14A
1,3,5-Trimethylbenzene by EPA TO -14A
1,4-Dichlorobenzene by EPA TO-15 & TO-14A
Benzene by EPA TO-15 & TO-14A
Chlorobenzene by EPA TO-15 & TO-14A
Ethyl benzene by EPA TO-15 & TO-14A
Styrene by EPA TO-15 & TO-14A
Toluene by EPA TO-15 & TO-14A
Total Xylenes by EPA TO-15 & TO-14A
1,1,1-Trichloroethane by EPA TO-15 & TO-14A
1,1,2,2-Tetrachloroethane by EPA TO-15 & TO-14A
1,1,2-Trichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethene by EPA TO-15 & TO-14A
1,2-Dichloroethane by EPA TO-15 & TO-14A
1,2-Dichloropropane by EPA TO-15 & TO-14A
Benzyl Chloride by EPA TO-15 & TO-14A
Bromoform by EPA TO-15
Bromomethane by EPA TO-15 & TO-14A
Carbon tetrachloride by EPA TO-15 & TO-14A
Chloroethane by EPA TO-15
Chloroform by EPA TO-15 & TO-14A
Chloromethane by EPA TO-15 & TO-14A
cis-1,2-Dichloroethene by EPA TO-15
cis-1,2-Dichloropropene by EPA TO-15 & TO-14A
Methylene chloride by EPA TO -15 & TO-14A
Tetrachloroethane by EPA TO-15 & TO-14A
trans-1,2-Dichloroethene by EPA TO-15
trans-1,2-Dichloropropene by EPA TO-15 & TO-14A
Trichloroethene by EPA TO-15 & TO-14A
Vinyl chloride by EPA TO -15 & TO-14A
2-Butanone by EPA TO-15
4-Methyl-2-Pentanone by EPA TO-15
Hexane by EPA TO-15
Methyl tert-butyl ether by EPA TO-15
Vinyl acetate by EPA TO-15
Dibromochloromethane by EPA TO-15
Dichlorodifluoromethane by EPA TO-15 & TO-14A
Trichlorofluoromethane by EPA TO-15 & TO-14A
Naphthalene by EPA TO-15 & TO-14A
m&p Xylenes by EPA TO-15
o-Xylene by EPA TO-15
1,3-Butadiene by EPA TO-15
1,1,2-Trichlorotrifluoroethane by EPA TO-15 & TO-14A
Carbon disulfide by EPA TO-15
1,4-Dioxane by EPA TO-15
Cyclohexane by EPA TO-15
tert-Butyl Alcohol by EPA TO-15
1,3-Dichlorobenzene by EPA TO-15 & TO-14A
Heptane by EPA TO-15
Bromodichloromethane by EPA TO-15 & TO-14A

Chain of Custody Record

H&P Mobile Geochemistry Inc.
☒ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Date: 9-12-12
H&P Project # KJ091212-12
Outside Lab:

Client: Kennedy/Jenks Consultants
Address: 32001 32nd Ave S, Suite 100, Federal Way, WA 98001
Email: joshhopp@kennedyjenks.com
Collector: Jason Shira
Client Project # 1196016.00 / Task 8 / 00
Location: Yakima, WA
Phone: 253-835-6400 Fax:
Page: 1 of 1
Project Contact: Josh Hopp
Turn around time: Standard

Geotracker EDF: Yes ☐ No ☒
Global ID:
Excel EDD: Yes ☒ No ☐

Sample Receipt
Intact: ☑ Yes ☐ No
Seal Intact: ☑ Yes ☐ No ☐ N/A
Cold: ☐ Yes ☐ No ☑ N/A
Temperature: RT

Special Instructions:
UPS Track# 1Z 93T T61 87 4793 3346

Lab Work Order # E209067

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	Total # of containers	8260B Full List	8260B ☐ BTEX/OXY ☐ TPH gas	8015M TPH ☐ g ☐ d ☐ ext	418.1 TRPH	VOC's: Full List ☐ 8260B ☑ TO-15	VOC's: Short List/DTSC ☐ 8260B ☐ TO-15	VOC's: SAM, 8260B ☐ SAM A ☐ SAM B	Naphthalene ☐ 8260B ☐ TO-15	Oxygenates ☐ 8260B ☐ TO-15	TPHv gas ☐ 8260B ☐ TO-15	Ketones ☐ 8260B ☐ TO-15	Other ____ ☐ 8260B ☐ TO-15	Leak Check Compound ☐ 1,1 DFA ☐ OTHER	Methane	Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2	CAN#	VAC#
								SOIL/GW				SOIL VAPOR/AIR ANALYSIS												
FW-Influent-101			0920	9/12/12	Vapor	Summa	1					1											101-1.6	
FW-Inbtwn-105			0930	↓	↓	↓	↓					↓											105-2.0	
FW-Effluent-102			0935	↓	↓	↓	↓					↓											102-1.3	

Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
JHC Hopp	Kennedy/Jenks			9-13-12	1500
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
			Hopp	9-18-12	1025
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ Disposal ☐ Return to client ☐ Pickup

Mobile Geochemistry Inc.

04 October 2012

Mr. Josh Hopp
Kennedy/Jenks Consultants - Washington
32001 32nd Ave. South, Suite 100
Federal Way, WA 98001

H&P Project: KJ092712-12
Client Project: KJ091812 / Yakima

Dear Mr. Josh Hopp:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 27-Sep-12 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ092712-12	
32001 32nd Ave. South, Suite 100	Project Number: KJ091812 / Yakima	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	04-Oct-12 12:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FW-influent-074	E209100-01	Vapor	25-Sep-12	27-Sep-12
FW-inbtwn-241	E209100-02	Vapor	25-Sep-12	27-Sep-12
FW-effluent-245	E209100-03	Vapor	25-Sep-12	27-Sep-12

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ092712-12	
32001 32nd Ave. South, Suite 100	Project Number: KJ091812 / Yakima	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	04-Oct-12 12:47

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-influent-074 (E209100-01) Vapor	**Sampled: 25-Sep-12**	**Received: 27-Sep-12**							
Dichlorodifluoromethane (F12)	ND	5.0	ug/m3	1	EI22804	27-Sep-12	27-Sep-12	EPA TO-15	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	**37**	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	**20**	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	**39**	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	**16**	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	**210**	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ092712-12	
32001 32nd Ave. South, Suite 100	Project Number: KJ091812 / Yakima	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	04-Oct-12 12:47

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-influent-074 (E209100-01) Vapor Sampled: 25-Sep-12 Received: 27-Sep-12									
o-Xylene	ND	4.4	ug/m3	1	EI22804	27-Sep-12	27-Sep-12	EPA TO-15	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: Toluene-d8		*83.7 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*		*77-127*	"	"	"	"	
FW-inbtwn-241 (E209100-02) Vapor Sampled: 25-Sep-12 Received: 27-Sep-12									
Dichlorodifluoromethane (F12)	**12**	5.0	ug/m3	1	EI22804	27-Sep-12	27-Sep-12	EPA TO-15	QL-1H
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	**1000**	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	**3.8**	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	**31**	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	**430**	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ092712-12	
32001 32nd Ave. South, Suite 100	Project Number: KJ091812 / Yakima	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	04-Oct-12 12:47

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-inbtwn-241 (E209100-02) Vapor Sampled: 25-Sep-12 Received: 27-Sep-12									
1,2-Dichloropropane	ND	9.4	ug/m3	1	EI22804	27-Sep-12	27-Sep-12	EPA TO-15	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	**26**	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	ND	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	**15**	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	
o-Xylene	**6.3**	4.4	"	"	"	"	"	"	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: Toluene-d8		*103 %*	*78-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*77-127*		"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ092712-12	
32001 32nd Ave. South, Suite 100	Project Number: KJ091812 / Yakima	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	04-Oct-12 12:47

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-effluent-245 (E209100-03) Vapor	**Sampled: 25-Sep-12**	**Received: 27-Sep-12**							
Dichlorodifluoromethane (F12)	**21**	5.0	ug/m3	1	EI22804	27-Sep-12	27-Sep-12	EPA TO-15	QL-1H
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	**550**	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	**150**	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	**17**	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	ND	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	**52**	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ092712-12	
32001 32nd Ave. South, Suite 100	Project Number: KJ091812 / Yakima	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	04-Oct-12 12:47

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-effluent-245 (E209100-03) Vapor	**Sampled: 25-Sep-12**	**Received: 27-Sep-12**							
o-Xylene	**18**	4.4	ug/m3	1	EI22804	27-Sep-12	27-Sep-12	EPA TO-15	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**6.1**	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: Toluene-d8		*104 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*107 %*		*77-127*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ092712-12	
32001 32nd Ave. South, Suite 100	Project Number: KJ091812 / Yakima	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	04-Oct-12 12:47

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI22804 - TO-15										
Blank (EI22804-BLK1)				Prepared & Analyzed: 27-Sep-12						
Dichlorodifluoromethane (F12)	ND	5.0	ug/m3							
Chloromethane	ND	2.1	"							
Dichlorotetrafluoroethane (F114)	ND	7.1	"							
Vinyl chloride	ND	2.6	"							
Bromomethane	ND	16	"							
Chloroethane	ND	8.0	"							
Trichlorofluoromethane (F11)	ND	5.6	"							
Acetone	ND	24	"							
1,1-Dichloroethene	ND	4.0	"							
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"							
Methylene chloride (Dichloromethane)	ND	3.5	"							
Carbon disulfide	ND	6.3	"							
trans-1,2-Dichloroethene	ND	8.0	"							
1,1-Dichloroethane	ND	4.1	"							
2-Butanone (MEK)	ND	30	"							
cis-1,2-Dichloroethene	ND	4.0	"							
Chloroform	ND	4.9	"							
1,1,1-Trichloroethane	ND	5.5	"							
1,2-Dichloroethane (EDC)	ND	4.1	"							
Benzene	ND	3.2	"							
Carbon tetrachloride	ND	6.4	"							
Trichloroethene	ND	5.5	"							
1,2-Dichloropropane	ND	9.4	"							
Bromodichloromethane	ND	6.8	"							
cis-1,3-Dichloropropene	ND	4.6	"							
4-Methyl-2-pentanone (MIBK)	ND	8.3	"							
trans-1,3-Dichloropropene	ND	4.6	"							
Toluene	ND	3.8	"							
1,1,2-Trichloroethane	ND	5.5	"							
2-Hexanone (MBK)	ND	8.3	"							
Dibromochloromethane	ND	8.6	"							
Tetrachloroethene	ND	6.9	"							
1,2-Dibromoethane (EDB)	ND	7.8	"							
1,1,1,2-Tetrachloroethane	ND	7.0	"							

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ092712-12	
32001 32nd Ave. South, Suite 100	Project Number: KJ091812 / Yakima	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	04-Oct-12 12:47

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI22804 - TO-15										
Blank (EI22804-BLK1)				Prepared & Analyzed: 27-Sep-12						
Chlorobenzene	ND	4.7	ug/m3							
Ethylbenzene	ND	4.4	"							
m,p-Xylene	ND	8.8	"							
Styrene	ND	4.3	"							
o-Xylene	ND	4.4	"							
Bromoform	ND	10	"							
1,1,2,2-Tetrachloroethane	ND	7.0	"							
4-Ethyltoluene	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
1,3-Dichlorobenzene	ND	12	"							
1,4-Dichlorobenzene	ND	12	"							
1,2-Dichlorobenzene	ND	12	"							
1,2,4-Trichlorobenzene	ND	7.5	"							
Hexachlorobutadiene	ND	11	"							
Surrogate: Toluene-d8	*213*		*"*	*207*		*103*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*384*		*"*	*364*		*105*	*77-127*			
LCS (EI22804-BS1)				Prepared & Analyzed: 27-Sep-12						
Dichlorodifluoromethane (F12)	110	5.0	ug/m3	101		110	65-135		35	
Vinyl chloride	46	2.6	"	52.0		88.0	65-135		35	
Chloroethane	48	8.0	"	53.6		89.8	65-135		35	
Trichlorofluoromethane (F11)	130	5.6	"	113		115	65-135		35	
1,1-Dichloroethene	81	4.0	"	80.8		101	65-135		35	
1,1,2-Trichlorotrifluoroethane (F113)	160	7.7	"	155		102	65-135		35	
Methylene chloride (Dichloromethane)	64	3.5	"	70.8		89.9	65-135		35	
trans-1,2-Dichloroethene	76	8.0	"	80.8		93.9	65-135		35	
1,1-Dichloroethane	77	4.1	"	82.4		93.0	65-135		35	
cis-1,2-Dichloroethene	80	4.0	"	80.0		100	65-135		35	
Chloroform	110	4.9	"	99.2		109	65-135		35	
1,1,1-Trichloroethane	110	5.5	"	111		101	65-135		35	
1,2-Dichloroethane (EDC)	91	4.1	"	82.4		111	65-135		35	
Benzene	47	3.2	"	64.8		71.8	65-135		35	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ092712-12	
32001 32nd Ave. South, Suite 100	Project Number: KJ091812 / Yakima	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	04-Oct-12 12:47

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI22804 - TO-15										
LCS (EI22804-BS1)				Prepared & Analyzed: 27-Sep-12						
Carbon tetrachloride	130	6.4	ug/m3	128		103	65-135		35	
Trichloroethene	120	5.5	"	110		112	65-135		35	
Toluene	76	3.8	"	76.8		99.0	65-135		35	
1,1,2-Trichloroethane	120	5.5	"	111		105	65-135		35	
Tetrachloroethene	150	6.9	"	138		108	65-135		35	
1,1,1,2-Tetrachloroethane	150	7.0	"	140		104	65-135		35	
Ethylbenzene	85	4.4	"	88.4		96.2	65-135		35	
m,p-Xylene	180	8.8	"	177		100	65-135		35	
o-Xylene	90	4.4	"	88.4		102	65-135		35	
1,1,2,2-Tetrachloroethane	140	7.0	"	140		102	65-135		35	
Surrogate: Toluene-d8	*211*		*"*	*207*		*102*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*402*		*"*	*364*		*110*	*77-127*			
LCS Dup (EI22804-BSD1)				Prepared & Analyzed: 27-Sep-12						
Dichlorodifluoromethane (F12)	140	5.0	ug/m3	101		143	65-135	26.1	35	QL-1H
Vinyl chloride	57	2.6	"	52.0		109	65-135	21.4	35	
Chloroethane	60	8.0	"	53.6		113	65-135	22.4	35	
Trichlorofluoromethane (F11)	160	5.6	"	113		140	65-135	19.7	35	QL-1H
1,1-Dichloroethene	96	4.0	"	80.8		119	65-135	16.9	35	
1,1,2-Trichlorotrifluoroethane (F113)	190	7.7	"	155		123	65-135	18.5	35	
Methylene chloride (Dichloromethane)	76	3.5	"	70.8		108	65-135	17.9	35	
trans-1,2-Dichloroethene	92	8.0	"	80.8		114	65-135	19.0	35	
1,1-Dichloroethane	91	4.1	"	82.4		110	65-135	16.6	35	
cis-1,2-Dichloroethene	82	4.0	"	80.0		103	65-135	2.67	35	
Chloroform	120	4.9	"	99.2		120	65-135	9.42	35	
1,1,1-Trichloroethane	140	5.5	"	111		125	65-135	20.7	35	
1,2-Dichloroethane (EDC)	110	4.1	"	82.4		130	65-135	15.7	35	
Benzene	57	3.2	"	64.8		87.5	65-135	19.7	35	
Carbon tetrachloride	170	6.4	"	128		130	65-135	23.3	35	
Trichloroethene	120	5.5	"	110		112	65-135	0.177	35	
Toluene	75	3.8	"	76.8		98.1	65-135	0.908	35	
1,1,2-Trichloroethane	110	5.5	"	111		102	65-135	2.44	35	
Tetrachloroethene	150	6.9	"	138		105	65-135	2.10	35	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ092712-12	
32001 32nd Ave. South, Suite 100	Project Number: KJ091812 / Yakima	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	04-Oct-12 12:47

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI22804 - TO-15										
LCS Dup (EI22804-BSD1)				Prepared & Analyzed: 27-Sep-12						
1,1,1,2-Tetrachloroethane	150	7.0	ug/m3	140		108	65-135	3.48	35	
Ethylbenzene	87	4.4	"	88.4		98.8	65-135	2.70	35	
m,p-Xylene	180	8.8	"	177		102	65-135	1.70	35	
o-Xylene	91	4.4	"	88.4		103	65-135	0.921	35	
1,1,2,2-Tetrachloroethane	140	7.0	"	140		101	65-135	0.734	35	
Surrogate: Toluene-d8	*211*		*"*	*207*		*102*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*410*		*"*	*364*		*113*	*77-127*			

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ092712-12	
32001 32nd Ave. South, Suite 100	Project Number: KJ091812 / Yakima	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	04-Oct-12 12:47

Notes and Definitions

QL-1H	The LCS and/or LCSD recoveries fell above the established control specifications for this analyte. Any result for this compound is qualified and should be considered biased high.
QL-1H	The LCS and/or LCSD recoveries fell above the established control specifications for this analyte. Any result for this compound is qualified and should be considered biased high.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ092712-12	
32001 32nd Ave. South, Suite 100	Project Number: KJ091812 / Yakima	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	04-Oct-12 12:47

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS
Certificate# 2742, 2745, & 2741 approved for LUFT
Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods:

1,2,4-Trichlorobenzene by EPA TO-15 & TO-14A
Hexachlorobutadiene by EPA TO-15 & TO-14A
1,2,4-Trimethylbenzene by EPA TO -14A
1,2-Dichlorobenzene by EPA TO-15 & TO-14A
1,3,5-Trimethylbenzene by EPA TO -14A
1,4-Dichlorobenzene by EPA TO-15 & TO-14A
Benzene by EPA TO-15 & TO-14A
Chlorobenzene by EPA TO-15 & TO-14A
Ethyl benzene by EPA TO-15 & TO-14A
Styrene by EPA TO-15 & TO-14A
Toluene by EPA TO-15 & TO-14A
Total Xylenes by EPA TO-15 & TO-14A
1,1,1-Trichloroethane by EPA TO-15 & TO-14A
1,1,2,2-Tetrachloroethane by EPA TO-15 & TO-14A
1,1,2-Trichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethene by EPA TO-15 & TO-14A
1,2-Dichloroethane by EPA TO-15 & TO-14A
1,2-Dichloropropane by EPA TO-15 & TO-14A
Benzyl Chloride by EPA TO-15 & TO-14A
Bromoform by EPA TO-15
Bromomethane by EPA TO-15 & TO-14A
Carbon tetrachloride by EPA TO-15 & TO-14A
Chloroethane by EPA TO-15
Chloroform by EPA TO-15 & TO-14A
Chloromethane by EPA TO-15 & TO-14A
cis-1,2-Dichloroethene by EPA TO-15
cis-1,2-Dichloropropene by EPA TO-15 & TO-14A
Methylene chloride by EPA TO -15 & TO-14A
Tetrachloroethane by EPA TO-15 & TO-14A
trans-1,2-Dichloroethene by EPA TO-15
trans-1,2-Dichloropropene by EPA TO-15 & TO-14A
Trichloroethene by EPA TO-15 & TO-14A
Vinyl chloride by EPA TO -15 & TO-14A
2-Butanone by EPA TO-15
4-Methyl-2-Pentanone by EPA TO-15
Hexane by EPA TO-15
Methyl tert-butyl ether by EPA TO-15
Vinyl acetate by EPA TO-15
Dibromochloromethane by EPA TO-15
Dichlorodifluoromethane by EPA TO-15 & TO-14A
Trichlorofluoromethane by EPA TO-15 & TO-14A
Naphthalene by EPA TO-15 & TO-14A
m&p Xylenes by EPA TO-15
o-Xylene by EPA TO-15
1,3-Butadiene by EPA TO-15
1,1,2-Trichlorotrifluoroethane by EPA TO-15 & TO-14A
Carbon disulfide by EPA TO-15
1,4-Dioxane by EPA TO-15
Cyclohexane by EPA TO-15
tert-Butyl Alcohol by EPA TO-15
1,3-Dichlorobenzene by EPA TO-15 & TO-14A
Heptane by EPA TO-15
Bromodichloromethane by EPA TO-15 & TO-14A

Chain of Custody Record

H&P Mobile Geochemistry Inc.

☒ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Date: 9/25/12
WA H&P Project # KJ092712-12
Outside Lab:

Client: Kennedy Jenks Consultants
Address: 32001 32nd Ave South Suite 100, Federal Way, WA 98001
Email: JoshHopp@KennedyJenks.com
Collector: Jason Shira
Client Project # KJ091812 -
Location: Yakima
Phone: (253) 835-6408 Fax:
Page: 1 of 1
Project Contact: Josh Hopp
Turn around time: Stnd

Geotracker EDF: Yes ☐ No ☐
Global ID:
Excel EDD: Yes ☒ No ☐

Sample Receipt
Intact: ☑ Yes ☐ No
Seal Intact: ☑ Yes ☐ No ☐ N/A
Cold: ☐ Yes ☐ No ☑ N/A
Temperature: RT

Special Instructions:
UPS TRACK# 1Z 93T T61 87 4852 4027

Lab Work Order # E209100

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	Total # of containers	8260B Full List	8260B ☐ BTEX/OXY ☐ TPH gas	8015M TPH ☐ g ☐ d ☐ ext	418.1 TRPH	VOC's: Full List ☐ 8260B ☑ TO-15	VOC's: Short List/DTSC ☐ 8260B ☐ TO-15	VOC's: SAM, 8260B ☐ SAM A ☐ SAM B	Naphthalene ☐ 8260B ☐ TO-15	Oxygenates ☐ 8260B ☐ TO-15	TPHv gas ☐ 8260B ☐ TO-15	Ketones ☐ 8260B ☐ TO-15	Other ____ ☐ 8260B ☐ TO-15	Leak Check Compound ☐ 1,1 DFA ☐ OTHER	Methane	Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2	CAN#	VAC#
								SOIL/GW				SOIL VAPOR/AIR ANALYSIS												
FWI-influent-074	influent		13:00	9/25	air	400ml Summa	1																074	2.8
FWI-inbrown-241	inbrown		13:10	"	"	"	1																241	Ø
FWI-effluent-245	effluent		13:20	"	"	"	1																245	Ø

Relinquished by: (Signature)	(company) Ecology	Received by: (Signature)	(company) HHP	Date: 9/27/12	Time: 1015
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ Disposal ☐ Return to client ☐ Pickup

Appendix J

Follow-Up Indoor Air Sampling Laboratory Analytical Reports
and Chain-of-Custody Documentation, and Field Logs

Laboratory Analytical Reports and
Chain-of-Custody Documentation

eurofins | Air Toxics

7/24/2012

Ms. Sherri Peterson
Kennedy/Jenks Consultants
1191 2nd Ave.
Suite 630
Seattle WA 98101

Project Name: WDOE Yakima
Project #: 1196016.00 Task 9 Phase 00
Workorder #: 1207174

Dear Ms. Sherri Peterson

The following report includes the data for the above referenced project for sample(s) received on 7/11/2012 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

eurofins | Air Toxics

WORK ORDER #: 1207174

Work Order Summary

CLIENT:	Ms. Sherri Peterson Kennedy/Jenks Consultants 1191 2nd Ave. Suite 630 Seattle, WA 98101	**BILL TO:**	Ms. Sherri Peterson Kennedy/Jenks Consultants 1191 2nd Ave. Suite 630 Seattle, WA 98101
PHONE:	206-652-4905	**P.O. #**	
FAX:		**PROJECT #**	1196016.00 Task 9 Phase 00 WDOE Yakima
DATE RECEIVED:	07/11/2012	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	07/20/2012		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	BMS-M1-070612	Modified TO-15	8.6 "Hg	5 psi
01B	BMS-M1-070612	Modified TO-15	8.6 "Hg	5 psi
02A	BMS-M3-070612	Modified TO-15	7.8 "Hg	5 psi
02B	BMS-M3-070612	Modified TO-15	7.8 "Hg	5 psi
03A	AMB-UPWIND-070612	Modified TO-15	9.2 "Hg	5 psi
03B	AMB-UPWIND-070612	Modified TO-15	9.2 "Hg	5 psi
04A	Lab Blank	Modified TO-15	NA	NA
04B	Lab Blank	Modified TO-15	NA	NA
05A	CCV	Modified TO-15	NA	NA
05B	CCV	Modified TO-15	NA	NA
06A	LCS	Modified TO-15	NA	NA
06AA	LCSD	Modified TO-15	NA	NA
06B	LCS	Modified TO-15	NA	NA
06BB	LCSD	Modified TO-15	NA	NA

CERTIFIED BY:  DATE: 07/24/12

Technical Director

Certfication numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP -CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11 , Expiration date: 06/30/12.
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 Full Scan/SIM
Kennedy/Jenks Consultants
Workorder# 1207174

Three 6 Liter Summa Special (SIM Certified) samples were received on July 11, 2012. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to < 40% RSD	For Full Scan: 30% RSD with 4 compounds allowed out to < 40% RSD For SIM: Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	For Full Scan: </= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers For SIM: Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

eurofins | Air Toxics

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BMS-M1-070612

Lab ID#: 1207174-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Chloroform	0.19	0.59	0.92	2.9

Client Sample ID: BMS-M1-070612

Lab ID#: 1207174-01B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2-Dichloroethane	0.038	0.085	0.15	0.34
Trichloroethene	0.0056	0.013	0.030	0.071
Tetrachloroethene	0.038	0.042	0.26	0.29

Client Sample ID: BMS-M3-070612

Lab ID#: 1207174-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Chloroform	0.18	0.56	0.88	2.7

Client Sample ID: BMS-M3-070612

Lab ID#: 1207174-02B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2-Dichloroethane	0.036	0.082	0.15	0.33
Trichloroethene	0.0054	0.012	0.029	0.067
Tetrachloroethene	0.036	0.037	0.24	0.25

Client Sample ID: AMB-UPWIND-070612

Lab ID#: 1207174-03A

No Detections Were Found.

Client Sample ID: AMB-UPWIND-070612

Lab ID#: 1207174-03B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)

eurofins | Air Toxics

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: AMB-UPWIND-070612

Lab ID#: 1207174-03B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.0058	0.0088	0.031	0.048

eurofins | Air Toxics

Client Sample ID: BMS-M1-070612

Lab ID#: 1207174-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a071909**	**Date of Collection: 7/6/12 5:45:00 PM**	
Dil. Factor:	**1.88**	**Date of Analysis: 7/19/12 01:16 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Chloroform	0.19	0.59	0.92	2.9
trans-1,3-Dichloropropene	0.19	Not Detected	0.85	Not Detected
Chlorobenzene	0.19	Not Detected	0.86	Not Detected
1,2-Dichlorobenzene	0.19	Not Detected	1.1	Not Detected
1,1,1,2-Tetrachloroethane	0.94	Not Detected	6.4	Not Detected

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	117	70-130
Toluene-d8	116	70-130
4-Bromofluorobenzene	100	70-130

eurofins | Air Toxics

Client Sample ID: BMS-M1-070612

Lab ID#: 1207174-01B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a071909sim**	**Date of Collection: 7/6/12 5:45:00 PM**	
Dil. Factor:	**1.88**	**Date of Analysis: 7/19/12 01:16 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.038	Not Detected	0.15	Not Detected
1,1,1-Trichloroethane	0.038	Not Detected	0.20	Not Detected
1,2-Dichloroethane	0.038	0.085	0.15	0.34
Trichloroethene	0.0056	0.013	0.030	0.071
Tetrachloroethene	0.038	0.042	0.26	0.29

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	103	70-130

eurofins | Air Toxics

Client Sample ID: BMS-M3-070612

Lab ID#: 1207174-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a071910**	**Date of Collection: 7/6/12 5:45:00 PM**	
Dil. Factor:	**1.81**	**Date of Analysis: 7/19/12 02:05 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Chloroform	0.18	0.56	0.88	2.7
trans-1,3-Dichloropropene	0.18	Not Detected	0.82	Not Detected
Chlorobenzene	0.18	Not Detected	0.83	Not Detected
1,2-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,1,1,2-Tetrachloroethane	0.90	Not Detected	6.2	Not Detected

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	116	70-130
4-Bromofluorobenzene	100	70-130

eurofins | Air Toxics

Client Sample ID: BMS-M3-070612

Lab ID#: 1207174-02B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a071910sim**	**Date of Collection: 7/6/12 5:45:00 PM**	
Dil. Factor:	**1.81**	**Date of Analysis: 7/19/12 02:05 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.036	Not Detected	0.14	Not Detected
1,1,1-Trichloroethane	0.036	Not Detected	0.20	Not Detected
1,2-Dichloroethane	0.036	0.082	0.15	0.33
Trichloroethene	0.0054	0.012	0.029	0.067
Tetrachloroethene	0.036	0.037	0.24	0.25

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	103	70-130

eurofins | Air Toxics

Client Sample ID: AMB-UPWIND-070612

Lab ID#: 1207174-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a071911**	**Date of Collection: 7/6/12 5:49:00 PM**	
Dil. Factor:	**1.93**	**Date of Analysis: 7/19/12 02:42 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Chloroform	0.19	Not Detected	0.94	Not Detected
trans-1,3-Dichloropropene	0.19	Not Detected	0.88	Not Detected
Chlorobenzene	0.19	Not Detected	0.89	Not Detected
1,2-Dichlorobenzene	0.19	Not Detected	1.2	Not Detected
1,1,1,2-Tetrachloroethane	0.96	Not Detected	6.6	Not Detected

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	115	70-130
Toluene-d8	115	70-130
4-Bromofluorobenzene	102	70-130

eurofins | Air Toxics

Client Sample ID: AMB-UPWIND-070612

Lab ID#: 1207174-03B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a071911sim**	**Date of Collection: 7/6/12 5:49:00 PM**	
Dil. Factor:	**1.93**	**Date of Analysis: 7/19/12 02:42 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.039	Not Detected	0.15	Not Detected
1,1,1-Trichloroethane	0.039	Not Detected	0.21	Not Detected
1,2-Dichloroethane	0.039	Not Detected	0.16	Not Detected
Trichloroethene	0.0058	0.0088	0.031	0.048
Tetrachloroethene	0.039	Not Detected	0.26	Not Detected

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	103	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1207174-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a071908a**	**Date of Collection: NA**	
Dil. Factor:	**1.49**	**Date of Analysis: 7/19/12 12:25 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Chloroform	0.15	Not Detected	0.73	Not Detected
trans-1,3-Dichloropropene	0.15	Not Detected	0.68	Not Detected
Chlorobenzene	0.15	Not Detected	0.68	Not Detected
1,2-Dichlorobenzene	0.15	Not Detected	0.90	Not Detected
1,1,1,2-Tetrachloroethane	0.74	Not Detected	5.1	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	89	70-130
4-Bromofluorobenzene	101	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1207174-04B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a071908asim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/19/12 12:25 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
1,1,1-Trichloroethane	0.020	Not Detected	0.11	Not Detected
1,2-Dichloroethane	0.020	Not Detected	0.081	Not Detected
Trichloroethene	0.0030	Not Detected	0.016	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	102	70-130

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1207174-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a071902**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/19/12 07:52 AM**	

Compound	**%Recovery**
Chloroform	96
trans-1,3-Dichloropropene	98
Chlorobenzene	93
1,2-Dichlorobenzene	97
1,1,1,2-Tetrachloroethane	94

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	117	70-130
4-Bromofluorobenzene	103	70-130

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1207174-05B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a071902sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/19/12 07:52 AM**	

Compound	%Recovery
cis-1,2-Dichloroethene	90
1,1,1-Trichloroethane	100
1,2-Dichloroethane	110
Trichloroethene	91
Tetrachloroethene	92

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	106	70-130

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1207174-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a071903**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/19/12 08:33 AM**	

Compound	**%Recovery**
Chloroform	94
trans-1,3-Dichloropropene	92
Chlorobenzene	89
1,2-Dichlorobenzene	96
1,1,1,2-Tetrachloroethane	Not Spiked

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	119	70-130
4-Bromofluorobenzene	106	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1207174-06AA

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a071904**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/19/12 09:16 AM**	

Compound	%Recovery
Chloroform	92
trans-1,3-Dichloropropene	92
Chlorobenzene	90
1,2-Dichlorobenzene	96
1,1,1,2-Tetrachloroethane	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	117	70-130
4-Bromofluorobenzene	105	70-130

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1207174-06B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a071903sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/19/12 08:33 AM**	

Compound	%Recovery
cis-1,2-Dichloroethene	88
1,1,1-Trichloroethane	98
1,2-Dichloroethane	106
Trichloroethene	88
Tetrachloroethene	85

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	105	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1207174-06BB

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**a071904sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/19/12 09:16 AM**	

Compound	%Recovery
cis-1,2-Dichloroethene	87
1,1,1-Trichloroethane	98
1,2-Dichloroethane	104
Trichloroethene	87
Tetrachloroethene	84

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	107	70-130

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager: Sheri Peterson

Collected by: (Print and Sign) Joshua Hopp JC Hopp

Company: Kennedy/Jenks Consultants Email: sheripeterson@kennedyjenks.com

Address: 1191 2nd Ave, Suite 630 City: Seattle State: WA Zip: 98101

Phone: 206-753-3409 Fax: 206-652-4927

Project Info:

P.O. #:

Project #: 1196016.00 Task 9 Phase 00

Project Name: WDOE Yakima

Turn Around Time:

☒ Normal

☐ Rush

specify

Lab Use Only

Pressurized by:

Date:

Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
01A	BMS-M1-070612	926	7/6/12	0615-1745	TO-15 VOC's	-29"	-8"		
02A	BMS-M3-070612	12009	↓	0615-1745	↓	-30"	-7"		
03A	AMB-UPWIND-070612	12689	↓	0617-1749	↓	-28.5"	-7.5"		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
JC Hopp	7/9/12 1500	TS Whitteby ATL	7/11/12 1205
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	UPS		N/A	Good	Yes No (None)	12071-1

Form 1293 rev.11

eurofins | Air Toxics

9/7/2012

Ms. Sherri Peterson
Kennedy/Jenks Consultants
1191 2nd Ave.
Suite 630
Seattle WA 98101

Project Name: WDOE Yakima
Project #: 1196016.00 Task 9 Phase 20
Workorder #: 1208359R1

Dear Ms. Sherri Peterson

The following report includes the data for the above referenced project for sample(s) received on 8/16/2012 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

eurofins | Air Toxics

WORK ORDER #: 1208359R1

Work Order Summary

CLIENT:	Ms. Sherri Peterson Kennedy/Jenks Consultants 1191 2nd Ave. Suite 630 Seattle, WA 98101	**BILL TO:**	Ms. Sherri Peterson Kennedy/Jenks Consultants 1191 2nd Ave. Suite 630 Seattle, WA 98101
PHONE:	206-652-4905	**P.O. #**	
FAX:		**PROJECT #**	1196016.00 Task 9 Phase 20 WDOE Yakima
DATE RECEIVED:	08/16/2012	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	09/02/2012		
DATE REISSUED:	09/06/2012		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	BMS-M1-081312	Modified TO-15	8.5 "Hg	5 psi
01B	BMS-M1-081312	Modified TO-15	8.5 "Hg	5 psi
02A	BMS-M3-081312	Modified TO-15	8.5 "Hg	5 psi
02AA	BMS-M3-081312 Lab Duplicate	Modified TO-15	8.5 "Hg	5 psi
02B	BMS-M3-081312	Modified TO-15	8.5 "Hg	5 psi
02BB	BMS-M3-081312 Lab Duplicate	Modified TO-15	8.5 "Hg	5 psi
03A	AMB-UPWIND-081312	Modified TO-15	10.0 "Hg	5 psi
03B	AMB-UPWIND-081312	Modified TO-15	10.0 "Hg	5 psi
04A	Lab Blank	Modified TO-15	NA	NA
04B	Lab Blank	Modified TO-15	NA	NA
05A	CCV	Modified TO-15	NA	NA
05B	CCV	Modified TO-15	NA	NA
06A	LCS	Modified TO-15	NA	NA
06AA	LCSD	Modified TO-15	NA	NA
06B	LCS	Modified TO-15	NA	NA
06BB	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 09/07/12

Technical Director

Certfication numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NY NELAP - 11291,
TX NELAP - T104704434-12-5, UT NELAP CA009332012-3, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2011, Expiration date: 10/17/2012.
Eurofins Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 Full Scan/SIM
Kennedy/Jenks Consultants
Workorder# 1208359R1

Three 6 Liter Summa Special (SIM Certified) samples were received on August 16, 2012. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to < 40% RSD	For Full Scan: 30% RSD with 4 compounds allowed out to < 40% RSD For SIM: Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	For Full Scan: </= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers For SIM: Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

The Chain of Custody (COC) information for sample AMB-UPMIND-081312 did not match the entry on the sample tag with regard to sample identification. The information on the sample tag was used to process and report the sample.

Analytical Notes

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

THE WORKORDER WAS REISSUED ON SEPTEMBER 6, 2012 TO REPORT ADDITIONAL COMPOUNDS FOR ALL OF THE SAMPLES AS REQUIRED BY THE PROJECT SPECIFICATIONS.

DUE TO THE LINEAR CALIBRATION RANGE OF THE INSTRUMENT, THE REPORTING LIMIT FOR BROMOMETHANE WAS RAISED FROM 0.10 PPBV TO 0.50 PPBV.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

eurofins | Air Toxics

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BMS-M1-081312

Lab ID#: 1208359R1-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.19	0.43	0.92	2.1
Chloromethane	0.19	0.58	0.39	1.2
Freon 11	0.19	0.22	1.0	1.2
Ethanol	0.94	590 E	1.8	1100 E
Acetone	0.94	13	2.2	30
2-Propanol	0.94	17	2.3	41
Chloroform	0.19	0.38	0.91	1.8
Heptane	0.19	0.20	0.77	0.84
Styrene	0.19	0.25	0.80	1.1

Client Sample ID: BMS-M1-081312

Lab ID#: 1208359R1-01B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.094	0.16	0.30	0.50
1,2-Dichloroethane	0.037	0.062	0.15	0.25
Trichloroethene	0.0056	0.015	0.030	0.083
Toluene	0.037	1.0	0.14	3.8
Ethyl Benzene	0.037	0.070	0.16	0.30
m,p-Xylene	0.075	0.18	0.32	0.78
o-Xylene	0.037	0.076	0.16	0.33

Client Sample ID: BMS-M3-081312

Lab ID#: 1208359R1-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.19	0.49	0.92	2.4
Chloromethane	0.19	0.52	0.39	1.1
Freon 11	0.19	0.26	1.0	1.5
Ethanol	0.94	440 E	1.8	840 E
Acetone	0.94	13	2.2	32
2-Propanol	0.94	17	2.3	41
Hexane	0.19	0.22	0.66	0.78

eurofins | Air Toxics

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BMS-M3-081312

Lab ID#: 1208359R1-02A

2-Butanone (Methyl Ethyl Ketone)	0.94	1.0	2.8	3.0
Chloroform	0.19	0.37	0.91	1.8
Heptane	0.19	0.24	0.77	0.98
Styrene	0.19	0.24	0.80	1.0

Client Sample ID: BMS-M3-081312 Lab Duplicate

Lab ID#: 1208359R1-02AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.19	0.50	0.92	2.5
Chloromethane	0.19	0.65	0.39	1.3
Freon 11	0.19	0.24	1.0	1.4
Ethanol	0.94	510 E	1.8	960 E
Acetone	0.94	13	2.2	31
2-Propanol	0.94	16	2.3	40
Carbon Disulfide	0.94	1.8	2.9	5.8
Chloroform	0.19	0.35	0.91	1.7
Heptane	0.19	0.20	0.77	0.84
Styrene	0.19	0.23	0.80	1.0

Client Sample ID: BMS-M3-081312

Lab ID#: 1208359R1-02B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.094	0.14	0.30	0.46
1,2-Dichloroethane	0.037	0.058	0.15	0.23
Trichloroethene	0.0056	0.014	0.030	0.077
Toluene	0.037	1.0	0.14	3.8
Ethyl Benzene	0.037	0.060	0.16	0.26
m,p-Xylene	0.075	0.17	0.32	0.75
o-Xylene	0.037	0.069	0.16	0.30

Client Sample ID: BMS-M3-081312 Lab Duplicate

Lab ID#: 1208359R1-02BB

eurofins | Air Toxics

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BMS-M3-081312 Lab Duplicate

Lab ID#: 1208359R1-02BB

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.094	0.17	0.30	0.53
1,2-Dichloroethane	0.037	0.067	0.15	0.27
Trichloroethene	0.0056	0.022	0.030	0.12
Toluene	0.037	1.0	0.14	3.9
Ethyl Benzene	0.037	0.062	0.16	0.27
m,p-Xylene	0.075	0.17	0.32	0.75
o-Xylene	0.037	0.067	0.16	0.29

Client Sample ID: AMB-UPWIND-081312

Lab ID#: 1208359R1-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.20	0.50	0.99	2.5
Chloromethane	0.20	0.51	0.42	1.0
Freon 11	0.20	0.24	1.1	1.3
Ethanol	1.0	6.1	1.9	12
Acetone	1.0	3.9	2.4	9.2

Client Sample ID: AMB-UPWIND-081312

Lab ID#: 1208359R1-03B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.10	0.12	0.32	0.40
Trichloroethene	0.0060	0.012	0.032	0.068
Toluene	0.040	0.30	0.15	1.1
Ethyl Benzene	0.040	0.047	0.17	0.20
m,p-Xylene	0.080	0.11	0.35	0.46
o-Xylene	0.040	0.040	0.17	0.17

eurofins | Air Toxics

Client Sample ID: BMS-M1-081312

Lab ID#: 1208359R1-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082016r1**	**Date of Collection:**	**8/13/12 5:52:00 PM**
Dil. Factor:	**1.87**	**Date of Analysis:**	**8/20/12 08:00 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.19	0.43	0.92	2.1
Freon 114	0.19	Not Detected	1.3	Not Detected
Chloromethane	0.19	0.58	0.39	1.2
1,3-Butadiene	0.19	Not Detected	0.41	Not Detected
Bromomethane	0.94	Not Detected	3.6	Not Detected
Chloroethane	0.94	Not Detected	2.5	Not Detected
Freon 11	0.19	0.22	1.0	1.2
Ethanol	0.94	590 E	1.8	1100 E
Freon 113	0.19	Not Detected	1.4	Not Detected
Acetone	0.94	13	2.2	30
2-Propanol	0.94	17	2.3	41
Carbon Disulfide	0.94	Not Detected	2.9	Not Detected
3-Chloropropene	0.94	Not Detected	2.9	Not Detected
Methylene Chloride	0.37	Not Detected	1.3	Not Detected
Hexane	0.19	Not Detected	0.66	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.94	Not Detected	2.8	Not Detected
Tetrahydrofuran	0.94	Not Detected	2.8	Not Detected
Chloroform	0.19	0.38	0.91	1.8
Cyclohexane	0.19	Not Detected	0.64	Not Detected
Carbon Tetrachloride	0.19	Not Detected	1.2	Not Detected
2,2,4-Trimethylpentane	0.94	Not Detected	4.4	Not Detected
Heptane	0.19	0.20	0.77	0.84
1,2-Dichloropropane	0.19	Not Detected	0.86	Not Detected
1,4-Dioxane	0.19	Not Detected	0.67	Not Detected
Bromodichloromethane	0.19	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.19	Not Detected	0.85	Not Detected
4-Methyl-2-pentanone	0.19	Not Detected	0.77	Not Detected
trans-1,3-Dichloropropene	0.19	Not Detected	0.85	Not Detected
2-Hexanone	0.94	Not Detected	3.8	Not Detected
Dibromochloromethane	0.19	Not Detected	1.6	Not Detected
1,2-Dibromoethane (EDB)	0.19	Not Detected	1.4	Not Detected
Chlorobenzene	0.19	Not Detected	0.86	Not Detected
Styrene	0.19	0.25	0.80	1.1
Bromoform	0.19	Not Detected	1.9	Not Detected
Cumene	0.19	Not Detected	0.92	Not Detected
Propylbenzene	0.19	Not Detected	0.92	Not Detected
4-Ethyltoluene	0.19	Not Detected	0.92	Not Detected
1,3,5-Trimethylbenzene	0.19	Not Detected	0.92	Not Detected
1,2,4-Trimethylbenzene	0.19	Not Detected	0.92	Not Detected
1,3-Dichlorobenzene	0.19	Not Detected	1.1	Not Detected
1,4-Dichlorobenzene	0.19	Not Detected	1.1	Not Detected
alpha-Chlorotoluene	0.19	Not Detected	0.97	Not Detected

eurofins | Air Toxics

Client Sample ID: BMS-M1-081312

Lab ID#: 1208359R1-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082016r1**	**Date of Collection: 8/13/12 5:52:00 PM**	
Dil. Factor:	**1.87**	**Date of Analysis: 8/20/12 08:00 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2-Dichlorobenzene	0.19	Not Detected	1.1	Not Detected
1,2,4-Trichlorobenzene	0.94	Not Detected	6.9	Not Detected
Hexachlorobutadiene	0.94	Not Detected	10	Not Detected
1,1,1,2-Tetrachloroethane	0.94	Not Detected	6.4	Not Detected

E = Exceeds instrument calibration range.

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	101	70-130

eurofins | Air Toxics

Client Sample ID: BMS-M1-081312

Lab ID#: 1208359R1-01B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082016r1sim**	**Date of Collection:**	**8/13/12 5:52:00 PM**
Dil. Factor:	**1.87**	**Date of Analysis:**	**8/20/12 08:00 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.019	Not Detected	0.048	Not Detected
1,1-Dichloroethene	0.019	Not Detected	0.074	Not Detected
1,1-Dichloroethane	0.037	Not Detected	0.15	Not Detected
cis-1,2-Dichloroethene	0.037	Not Detected	0.15	Not Detected
1,1,1-Trichloroethane	0.037	Not Detected	0.20	Not Detected
Benzene	0.094	0.16	0.30	0.50
1,2-Dichloroethane	0.037	0.062	0.15	0.25
Trichloroethene	0.0056	0.015	0.030	0.083
Toluene	0.037	1.0	0.14	3.8
1,1,2-Trichloroethane	0.037	Not Detected	0.20	Not Detected
Tetrachloroethene	0.037	Not Detected	0.25	Not Detected
Ethyl Benzene	0.037	0.070	0.16	0.30
m,p-Xylene	0.075	0.18	0.32	0.78
o-Xylene	0.037	0.076	0.16	0.33
1,1,2,2-Tetrachloroethane	0.037	Not Detected	0.26	Not Detected
trans-1,2-Dichloroethene	0.19	Not Detected	0.74	Not Detected
Methyl tert-butyl ether	0.19	Not Detected	0.67	Not Detected

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	106	70-130

eurofins | Air Toxics

Client Sample ID: BMS-M3-081312

Lab ID#: 1208359R1-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082017r1**	**Date of Collection:**	**8/13/12 5:52:00 PM**
Dil. Factor:	**1.87**	**Date of Analysis:**	**8/20/12 08:51 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.19	0.49	0.92	2.4
Freon 114	0.19	Not Detected	1.3	Not Detected
Chloromethane	0.19	0.52	0.39	1.1
1,3-Butadiene	0.19	Not Detected	0.41	Not Detected
Bromomethane	0.94	Not Detected	3.6	Not Detected
Chloroethane	0.94	Not Detected	2.5	Not Detected
Freon 11	0.19	0.26	1.0	1.5
Ethanol	0.94	440 E	1.8	840 E
Freon 113	0.19	Not Detected	1.4	Not Detected
Acetone	0.94	13	2.2	32
2-Propanol	0.94	17	2.3	41
Carbon Disulfide	0.94	Not Detected	2.9	Not Detected
3-Chloropropene	0.94	Not Detected	2.9	Not Detected
Methylene Chloride	0.37	Not Detected	1.3	Not Detected
Hexane	0.19	0.22	0.66	0.78
2-Butanone (Methyl Ethyl Ketone)	0.94	1.0	2.8	3.0
Tetrahydrofuran	0.94	Not Detected	2.8	Not Detected
Chloroform	0.19	0.37	0.91	1.8
Cyclohexane	0.19	Not Detected	0.64	Not Detected
Carbon Tetrachloride	0.19	Not Detected	1.2	Not Detected
2,2,4-Trimethylpentane	0.94	Not Detected	4.4	Not Detected
Heptane	0.19	0.24	0.77	0.98
1,2-Dichloropropane	0.19	Not Detected	0.86	Not Detected
1,4-Dioxane	0.19	Not Detected	0.67	Not Detected
Bromodichloromethane	0.19	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.19	Not Detected	0.85	Not Detected
4-Methyl-2-pentanone	0.19	Not Detected	0.77	Not Detected
trans-1,3-Dichloropropene	0.19	Not Detected	0.85	Not Detected
2-Hexanone	0.94	Not Detected	3.8	Not Detected
Dibromochloromethane	0.19	Not Detected	1.6	Not Detected
1,2-Dibromoethane (EDB)	0.19	Not Detected	1.4	Not Detected
Chlorobenzene	0.19	Not Detected	0.86	Not Detected
Styrene	0.19	0.24	0.80	1.0
Bromoform	0.19	Not Detected	1.9	Not Detected
Cumene	0.19	Not Detected	0.92	Not Detected
Propylbenzene	0.19	Not Detected	0.92	Not Detected
4-Ethyltoluene	0.19	Not Detected	0.92	Not Detected
1,3,5-Trimethylbenzene	0.19	Not Detected	0.92	Not Detected
1,2,4-Trimethylbenzene	0.19	Not Detected	0.92	Not Detected
1,3-Dichlorobenzene	0.19	Not Detected	1.1	Not Detected
1,4-Dichlorobenzene	0.19	Not Detected	1.1	Not Detected
alpha-Chlorotoluene	0.19	Not Detected	0.97	Not Detected

eurofins | Air Toxics

Client Sample ID: BMS-M3-081312

Lab ID#: 1208359R1-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082017r1**	**Date of Collection: 8/13/12 5:52:00 PM**	
Dil. Factor:	**1.87**	**Date of Analysis: 8/20/12 08:51 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2-Dichlorobenzene	0.19	Not Detected	1.1	Not Detected
1,2,4-Trichlorobenzene	0.94	Not Detected	6.9	Not Detected
Hexachlorobutadiene	0.94	Not Detected	10	Not Detected
1,1,1,2-Tetrachloroethane	0.94	Not Detected	6.4	Not Detected

E = Exceeds instrument calibration range.

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	101	70-130

eurofins | Air Toxics

Client Sample ID: BMS-M3-081312 Lab Duplicate

Lab ID#: 1208359R1-02AA

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082023r1**	**Date of Collection:**	**8/13/12 5:52:00 PM**
Dil. Factor:	**1.87**	**Date of Analysis:**	**8/21/12 06:42 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.19	0.50	0.92	2.5
Freon 114	0.19	Not Detected	1.3	Not Detected
Chloromethane	0.19	0.65	0.39	1.3
1,3-Butadiene	0.19	Not Detected	0.41	Not Detected
Bromomethane	0.94	Not Detected	3.6	Not Detected
Chloroethane	0.94	Not Detected	2.5	Not Detected
Freon 11	0.19	0.24	1.0	1.4
Ethanol	0.94	510 E	1.8	960 E
Freon 113	0.19	Not Detected	1.4	Not Detected
Acetone	0.94	13	2.2	31
2-Propanol	0.94	16	2.3	40
Carbon Disulfide	0.94	1.8	2.9	5.8
3-Chloropropene	0.94	Not Detected	2.9	Not Detected
Methylene Chloride	0.37	Not Detected	1.3	Not Detected
Hexane	0.19	Not Detected	0.66	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.94	Not Detected	2.8	Not Detected
Tetrahydrofuran	0.94	Not Detected	2.8	Not Detected
Chloroform	0.19	0.35	0.91	1.7
Cyclohexane	0.19	Not Detected	0.64	Not Detected
Carbon Tetrachloride	0.19	Not Detected	1.2	Not Detected
2,2,4-Trimethylpentane	0.94	Not Detected	4.4	Not Detected
Heptane	0.19	0.20	0.77	0.84
1,2-Dichloropropane	0.19	Not Detected	0.86	Not Detected
1,4-Dioxane	0.19	Not Detected	0.67	Not Detected
Bromodichloromethane	0.19	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.19	Not Detected	0.85	Not Detected
4-Methyl-2-pentanone	0.19	Not Detected	0.77	Not Detected
trans-1,3-Dichloropropene	0.19	Not Detected	0.85	Not Detected
2-Hexanone	0.94	Not Detected	3.8	Not Detected
Dibromochloromethane	0.19	Not Detected	1.6	Not Detected
1,2-Dibromoethane (EDB)	0.19	Not Detected	1.4	Not Detected
Chlorobenzene	0.19	Not Detected	0.86	Not Detected
Styrene	0.19	0.23	0.80	1.0
Bromoform	0.19	Not Detected	1.9	Not Detected
Cumene	0.19	Not Detected	0.92	Not Detected
Propylbenzene	0.19	Not Detected	0.92	Not Detected
4-Ethyltoluene	0.19	Not Detected	0.92	Not Detected
1,3,5-Trimethylbenzene	0.19	Not Detected	0.92	Not Detected
1,2,4-Trimethylbenzene	0.19	Not Detected	0.92	Not Detected
1,3-Dichlorobenzene	0.19	Not Detected	1.1	Not Detected
1,4-Dichlorobenzene	0.19	Not Detected	1.1	Not Detected
alpha-Chlorotoluene	0.19	Not Detected	0.97	Not Detected

eurofins | Air Toxics

Client Sample ID: BMS-M3-081312 Lab Duplicate

Lab ID#: 1208359R1-02AA

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082023r1**	**Date of Collection: 8/13/12 5:52:00 PM**	
Dil. Factor:	**1.87**	**Date of Analysis: 8/21/12 06:42 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2-Dichlorobenzene	0.19	Not Detected	1.1	Not Detected
1,2,4-Trichlorobenzene	0.94	Not Detected	6.9	Not Detected
Hexachlorobutadiene	0.94	Not Detected	10	Not Detected
1,1,1,2-Tetrachloroethane	0.94	Not Detected	6.4	Not Detected

E = Exceeds instrument calibration range.

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	91	70-130
4-Bromofluorobenzene	106	70-130

eurofins | Air Toxics

Client Sample ID: BMS-M3-081312

Lab ID#: 1208359R1-02B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082017r1sim**	**Date of Collection: 8/13/12 5:52:00 PM**	
Dil. Factor:	**1.87**	**Date of Analysis: 8/20/12 08:51 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.019	Not Detected	0.048	Not Detected
1,1-Dichloroethene	0.019	Not Detected	0.074	Not Detected
1,1-Dichloroethane	0.037	Not Detected	0.15	Not Detected
cis-1,2-Dichloroethene	0.037	Not Detected	0.15	Not Detected
1,1,1-Trichloroethane	0.037	Not Detected	0.20	Not Detected
Benzene	0.094	0.14	0.30	0.46
1,2-Dichloroethane	0.037	0.058	0.15	0.23
Trichloroethene	0.0056	0.014	0.030	0.077
Toluene	0.037	1.0	0.14	3.8
1,1,2-Trichloroethane	0.037	Not Detected	0.20	Not Detected
Tetrachloroethene	0.037	Not Detected	0.25	Not Detected
Ethyl Benzene	0.037	0.060	0.16	0.26
m,p-Xylene	0.075	0.17	0.32	0.75
o-Xylene	0.037	0.069	0.16	0.30
1,1,2,2-Tetrachloroethane	0.037	Not Detected	0.26	Not Detected
trans-1,2-Dichloroethene	0.19	Not Detected	0.74	Not Detected
Methyl tert-butyl ether	0.19	Not Detected	0.67	Not Detected

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	103	70-130

eurofins | Air Toxics

Client Sample ID: BMS-M3-081312 Lab Duplicate

Lab ID#: 1208359R1-02BB

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082023r1sim**	**Date of Collection:**	**8/13/12 5:52:00 PM**
Dil. Factor:	**1.87**	**Date of Analysis:**	**8/21/12 06:42 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.019	Not Detected	0.048	Not Detected
1,1-Dichloroethene	0.019	Not Detected	0.074	Not Detected
1,1-Dichloroethane	0.037	Not Detected	0.15	Not Detected
cis-1,2-Dichloroethene	0.037	Not Detected	0.15	Not Detected
1,1,1-Trichloroethane	0.037	Not Detected	0.20	Not Detected
Benzene	0.094	0.17	0.30	0.53
1,2-Dichloroethane	0.037	0.067	0.15	0.27
Trichloroethene	0.0056	0.022	0.030	0.12
Toluene	0.037	1.0	0.14	3.9
1,1,2-Trichloroethane	0.037	Not Detected	0.20	Not Detected
Tetrachloroethene	0.037	Not Detected	0.25	Not Detected
Ethyl Benzene	0.037	0.062	0.16	0.27
m,p-Xylene	0.075	0.17	0.32	0.75
o-Xylene	0.037	0.067	0.16	0.29
1,1,2,2-Tetrachloroethane	0.037	Not Detected	0.26	Not Detected
trans-1,2-Dichloroethene	0.19	Not Detected	0.74	Not Detected
Methyl tert-butyl ether	0.19	Not Detected	0.67	Not Detected

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	107	70-130

eurofins | Air Toxics

Client Sample ID: AMB-UPWIND-081312

Lab ID#: 1208359R1-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082018r1**	**Date of Collection:**	**8/13/12 5:55:00 PM**
Dil. Factor:	**2.01**	**Date of Analysis:**	**8/20/12 09:34 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.20	0.50	0.99	2.5
Freon 114	0.20	Not Detected	1.4	Not Detected
Chloromethane	0.20	0.51	0.42	1.0
1,3-Butadiene	0.20	Not Detected	0.44	Not Detected
Bromomethane	1.0	Not Detected	3.9	Not Detected
Chloroethane	1.0	Not Detected	2.6	Not Detected
Freon 11	0.20	0.24	1.1	1.3
Ethanol	1.0	6.1	1.9	12
Freon 113	0.20	Not Detected	1.5	Not Detected
Acetone	1.0	3.9	2.4	9.2
2-Propanol	1.0	Not Detected	2.5	Not Detected
Carbon Disulfide	1.0	Not Detected	3.1	Not Detected
3-Chloropropene	1.0	Not Detected	3.1	Not Detected
Methylene Chloride	0.40	Not Detected	1.4	Not Detected
Hexane	0.20	Not Detected	0.71	Not Detected
2-Butanone (Methyl Ethyl Ketone)	1.0	Not Detected	3.0	Not Detected
Tetrahydrofuran	1.0	Not Detected	3.0	Not Detected
Chloroform	0.20	Not Detected	0.98	Not Detected
Cyclohexane	0.20	Not Detected	0.69	Not Detected
Carbon Tetrachloride	0.20	Not Detected	1.3	Not Detected
2,2,4-Trimethylpentane	1.0	Not Detected	4.7	Not Detected
Heptane	0.20	Not Detected	0.82	Not Detected
1,2-Dichloropropane	0.20	Not Detected	0.93	Not Detected
1,4-Dioxane	0.20	Not Detected	0.72	Not Detected
Bromodichloromethane	0.20	Not Detected	1.3	Not Detected
cis-1,3-Dichloropropene	0.20	Not Detected	0.91	Not Detected
4-Methyl-2-pentanone	0.20	Not Detected	0.82	Not Detected
trans-1,3-Dichloropropene	0.20	Not Detected	0.91	Not Detected
2-Hexanone	1.0	Not Detected	4.1	Not Detected
Dibromochloromethane	0.20	Not Detected	1.7	Not Detected
1,2-Dibromoethane (EDB)	0.20	Not Detected	1.5	Not Detected
Chlorobenzene	0.20	Not Detected	0.92	Not Detected
Styrene	0.20	Not Detected	0.86	Not Detected
Bromoform	0.20	Not Detected	2.1	Not Detected
Cumene	0.20	Not Detected	0.99	Not Detected
Propylbenzene	0.20	Not Detected	0.99	Not Detected
4-Ethyltoluene	0.20	Not Detected	0.99	Not Detected
1,3,5-Trimethylbenzene	0.20	Not Detected	0.99	Not Detected
1,2,4-Trimethylbenzene	0.20	Not Detected	0.99	Not Detected
1,3-Dichlorobenzene	0.20	Not Detected	1.2	Not Detected
1,4-Dichlorobenzene	0.20	Not Detected	1.2	Not Detected
alpha-Chlorotoluene	0.20	Not Detected	1.0	Not Detected

eurofins | Air Toxics

Client Sample ID: AMB-UPWIND-081312

Lab ID#: 1208359R1-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082018r1**	**Date of Collection: 8/13/12 5:55:00 PM**	
Dil. Factor:	**2.01**	**Date of Analysis: 8/20/12 09:34 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2-Dichlorobenzene	0.20	Not Detected	1.2	Not Detected
1,2,4-Trichlorobenzene	1.0	Not Detected	7.4	Not Detected
Hexachlorobutadiene	1.0	Not Detected	11	Not Detected
1,1,1,2-Tetrachloroethane	1.0	Not Detected	6.9	Not Detected

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	96	70-130

eurofins | Air Toxics

Client Sample ID: AMB-UPWIND-081312

Lab ID#: 1208359R1-03B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082018r1sim**	**Date of Collection:**	**8/13/12 5:55:00 PM**
Dil. Factor:	**2.01**	**Date of Analysis:**	**8/20/12 09:34 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.020	Not Detected	0.051	Not Detected
1,1-Dichloroethene	0.020	Not Detected	0.080	Not Detected
1,1-Dichloroethane	0.040	Not Detected	0.16	Not Detected
cis-1,2-Dichloroethene	0.040	Not Detected	0.16	Not Detected
1,1,1-Trichloroethane	0.040	Not Detected	0.22	Not Detected
Benzene	0.10	0.12	0.32	0.40
1,2-Dichloroethane	0.040	Not Detected	0.16	Not Detected
Trichloroethene	0.0060	0.012	0.032	0.068
Toluene	0.040	0.30	0.15	1.1
1,1,2-Trichloroethane	0.040	Not Detected	0.22	Not Detected
Tetrachloroethene	0.040	Not Detected	0.27	Not Detected
Ethyl Benzene	0.040	0.047	0.17	0.20
m,p-Xylene	0.080	0.11	0.35	0.46
o-Xylene	0.040	0.040	0.17	0.17
1,1,2,2-Tetrachloroethane	0.040	Not Detected	0.28	Not Detected
trans-1,2-Dichloroethene	0.20	Not Detected	0.80	Not Detected
Methyl tert-butyl ether	0.20	Not Detected	0.72	Not Detected

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	98	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1208359R1-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082014c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/20/12 06:22 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.10	Not Detected	0.49	Not Detected
Freon 114	0.10	Not Detected	0.70	Not Detected
Chloromethane	0.10	Not Detected	0.21	Not Detected
1,3-Butadiene	0.10	Not Detected	0.22	Not Detected
Bromomethane	0.50	Not Detected	1.9	Not Detected
Chloroethane	0.50	Not Detected	1.3	Not Detected
Freon 11	0.10	Not Detected	0.56	Not Detected
Ethanol	0.50	Not Detected	0.94	Not Detected
Freon 113	0.10	Not Detected	0.77	Not Detected
Acetone	0.50	Not Detected	1.2	Not Detected
2-Propanol	0.50	Not Detected	1.2	Not Detected
Carbon Disulfide	0.50	Not Detected	1.6	Not Detected
3-Chloropropene	0.50	Not Detected	1.6	Not Detected
Methylene Chloride	0.20	Not Detected	0.69	Not Detected
Hexane	0.10	Not Detected	0.35	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	Not Detected	1.5	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.10	Not Detected	0.49	Not Detected
Cyclohexane	0.10	Not Detected	0.34	Not Detected
Carbon Tetrachloride	0.10	Not Detected	0.63	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Heptane	0.10	Not Detected	0.41	Not Detected
1,2-Dichloropropane	0.10	Not Detected	0.46	Not Detected
1,4-Dioxane	0.10	Not Detected	0.36	Not Detected
Bromodichloromethane	0.10	Not Detected	0.67	Not Detected
cis-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
4-Methyl-2-pentanone	0.10	Not Detected	0.41	Not Detected
trans-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
2-Hexanone	0.50	Not Detected	2.0	Not Detected
Dibromochloromethane	0.10	Not Detected	0.85	Not Detected
1,2-Dibromoethane (EDB)	0.10	Not Detected	0.77	Not Detected
Chlorobenzene	0.10	Not Detected	0.46	Not Detected
Styrene	0.10	Not Detected	0.42	Not Detected
Bromoform	0.10	Not Detected	1.0	Not Detected
Cumene	0.10	Not Detected	0.49	Not Detected
Propylbenzene	0.10	Not Detected	0.49	Not Detected
4-Ethyltoluene	0.10	Not Detected	0.49	Not Detected
1,3,5-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,2,4-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,3-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,4-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
alpha-Chlorotoluene	0.10	Not Detected	0.52	Not Detected

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1208359R1-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082014c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/20/12 06:22 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,2,4-Trichlorobenzene	0.50	Not Detected	3.7	Not Detected
Hexachlorobutadiene	0.50	Not Detected	5.3	Not Detected
1,1,1,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	94	70-130
4-Bromofluorobenzene	100	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1208359R1-04B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082014dsim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/20/12 06:22 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
1,1-Dichloroethene	0.010	Not Detected	0.040	Not Detected
1,1-Dichloroethane	0.020	Not Detected	0.081	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
1,1,1-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Benzene	0.050	Not Detected	0.16	Not Detected
1,2-Dichloroethane	0.020	Not Detected	0.081	Not Detected
Trichloroethene	0.0030	Not Detected	0.016	Not Detected
Toluene	0.020	Not Detected	0.075	Not Detected
1,1,2-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected
Ethyl Benzene	0.020	Not Detected	0.087	Not Detected
m,p-Xylene	0.040	Not Detected	0.17	Not Detected
o-Xylene	0.020	Not Detected	0.087	Not Detected
1,1,2,2-Tetrachloroethane	0.020	Not Detected	0.14	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	102	70-130

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1208359R1-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082004**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/20/12 10:27 AM**	

Compound	%Recovery
Freon 12	106
Freon 114	109
Chloromethane	94
1,3-Butadiene	106
Bromomethane	114
Chloroethane	111
Freon 11	105
Ethanol	96
Freon 113	100
Acetone	85
2-Propanol	106
Carbon Disulfide	94
3-Chloropropene	96
Methylene Chloride	84
Hexane	106
2-Butanone (Methyl Ethyl Ketone)	107
Tetrahydrofuran	102
Chloroform	100
Cyclohexane	103
Carbon Tetrachloride	80
2,2,4-Trimethylpentane	105
Heptane	118
1,2-Dichloropropane	106
1,4-Dioxane	110
Bromodichloromethane	112
cis-1,3-Dichloropropene	114
4-Methyl-2-pentanone	117
trans-1,3-Dichloropropene	119
2-Hexanone	123
Dibromochloromethane	118
1,2-Dibromoethane (EDB)	114
Chlorobenzene	105
Styrene	117
Bromoform	107
Cumene	117
Propylbenzene	110
4-Ethyltoluene	111
1,3,5-Trimethylbenzene	107
1,2,4-Trimethylbenzene	109
1,3-Dichlorobenzene	104
1,4-Dichlorobenzene	104
alpha-Chlorotoluene	116

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1208359R1-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082004**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/20/12 10:27 AM**	

Compound	%Recovery
1,2-Dichlorobenzene	103
1,2,4-Trichlorobenzene	99
Hexachlorobutadiene	105
1,1,1,2-Tetrachloroethane	64

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	99	70-130

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1208359R1-05B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082004sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/20/12 10:27 AM**	

Compound	%Recovery
Vinyl Chloride	102
1,1-Dichloroethene	94
1,1-Dichloroethane	98
cis-1,2-Dichloroethene	99
1,1,1-Trichloroethane	102
Benzene	87
1,2-Dichloroethane	113
Trichloroethene	98
Toluene	108
1,1,2-Trichloroethane	106
Tetrachloroethene	88
Ethyl Benzene	116
m,p-Xylene	121
o-Xylene	122
1,1,2,2-Tetrachloroethane	100
trans-1,2-Dichloroethene	99
Methyl tert-butyl ether	114

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	104	70-130

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1208359R1-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082005**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/20/12 11:13 AM**	

Compound	%Recovery
Freon 12	100
Freon 114	98
Chloromethane	89
1,3-Butadiene	100
Bromomethane	110
Chloroethane	102
Freon 11	100
Ethanol	88
Freon 113	100
Acetone	80
2-Propanol	105
Carbon Disulfide	113
3-Chloropropene	111
Methylene Chloride	86
Hexane	104
2-Butanone (Methyl Ethyl Ketone)	103
Tetrahydrofuran	97
Chloroform	99
Cyclohexane	102
Carbon Tetrachloride	98
2,2,4-Trimethylpentane	97
Heptane	106
1,2-Dichloropropane	100
1,4-Dioxane	103
Bromodichloromethane	105
cis-1,3-Dichloropropene	109
4-Methyl-2-pentanone	104
trans-1,3-Dichloropropene	112
2-Hexanone	116
Dibromochloromethane	113
1,2-Dibromoethane (EDB)	110
Chlorobenzene	98
Styrene	110
Bromoform	104
Cumene	110
Propylbenzene	104
4-Ethyltoluene	100
1,3,5-Trimethylbenzene	101
1,2,4-Trimethylbenzene	103
1,3-Dichlorobenzene	98
1,4-Dichlorobenzene	99
alpha-Chlorotoluene	104

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1208359R1-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082005**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/20/12 11:13 AM**	

Compound	**%Recovery**
1,2-Dichlorobenzene	95
1,2,4-Trichlorobenzene	95
Hexachlorobutadiene	97
1,1,1,2-Tetrachloroethane	Not Spiked

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	102	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1208359R1-06AA

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082006**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/20/12 11:58 AM**	

Compound	%Recovery
Freon 12	92
Freon 114	93
Chloromethane	83
1,3-Butadiene	95
Bromomethane	104
Chloroethane	96
Freon 11	96
Ethanol	85
Freon 113	95
Acetone	78
2-Propanol	103
Carbon Disulfide	111
3-Chloropropene	111
Methylene Chloride	81
Hexane	100
2-Butanone (Methyl Ethyl Ketone)	99
Tetrahydrofuran	96
Chloroform	95
Cyclohexane	100
Carbon Tetrachloride	95
2,2,4-Trimethylpentane	94
Heptane	104
1,2-Dichloropropane	101
1,4-Dioxane	104
Bromodichloromethane	104
cis-1,3-Dichloropropene	108
4-Methyl-2-pentanone	114
trans-1,3-Dichloropropene	111
2-Hexanone	114
Dibromochloromethane	109
1,2-Dibromoethane (EDB)	108
Chlorobenzene	96
Styrene	106
Bromoform	102
Cumene	109
Propylbenzene	100
4-Ethyltoluene	96
1,3,5-Trimethylbenzene	96
1,2,4-Trimethylbenzene	98
1,3-Dichlorobenzene	93
1,4-Dichlorobenzene	94
alpha-Chlorotoluene	101

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1208359R1-06AA

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082006**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/20/12 11:58 AM**	

Compound	%Recovery
1,2-Dichlorobenzene	94
1,2,4-Trichlorobenzene	89
Hexachlorobutadiene	96
1,1,1,2-Tetrachloroethane	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	106	70-130

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1208359R1-06B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082005sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/20/12 11:13 AM**	

Compound	%Recovery
Vinyl Chloride	94
1,1-Dichloroethene	95
1,1-Dichloroethane	94
cis-1,2-Dichloroethene	95
1,1,1-Trichloroethane	100
Benzene	83
1,2-Dichloroethane	108
Trichloroethene	95
Toluene	103
1,1,2-Trichloroethane	100
Tetrachloroethene	80
Ethyl Benzene	109
m,p-Xylene	117
o-Xylene	117
1,1,2,2-Tetrachloroethane	96
trans-1,2-Dichloroethene	106
Methyl tert-butyl ether	109

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	104	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1208359R1-06BB

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e082006sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 8/20/12 11:58 AM**	

Compound	%Recovery
Vinyl Chloride	91
1,1-Dichloroethene	93
1,1-Dichloroethane	91
cis-1,2-Dichloroethene	93
1,1,1-Trichloroethane	97
Benzene	81
1,2-Dichloroethane	104
Trichloroethene	93
Toluene	101
1,1,2-Trichloroethane	99
Tetrachloroethene	79
Ethyl Benzene	106
m,p-Xylene	112
o-Xylene	112
1,1,2,2-Tetrachloroethane	94
trans-1,2-Dichloroethene	104
Methyl tert-butyl ether	106

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	105	70-130

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager: Sherri Peterson
Collected by: (Print and Sign) Josh Hopp JHopp
Company: Kennedy/Jenks Consultants Email: sherri.peterson@kennedyjenks.com
Address: 1191 2nd Ave, Suite 630 City: Seattle State: WA Zip: 98101
Phone: 206-753-3409 Fax: 206-652-4927

Project Info:
P.O. #:
Project #: 1196086.00 Task 9 Phase 00
Project Name: WDOE Yakima

Turn Around Time:
☒ Normal
☐ Rush
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
01AB	BMS - M1 - 081312	11890	8/13/12	0608-1752	Full List VOC's by TO-15	-32	-9		
02AB	BMS - M3 - 081312	34006	8/13/12	0608-1752	↓	-31	-8.5		
03AB	AMB - VPMIND - 081312	05707	8/13/12	0612-1755	↓	-28	-8.5		

JHopp 8/13/12

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
JHopp	8/14/12 0930	[illegible] ATL	08/16/12 1030
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes: Ty.Schreiner@KennedyJenks.com & cc: Josh.Hopp@KennedyJenks.com on final report! - Thanks

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	UPS	1ZFL48802503761980	NA	good	Yes No (None)	1208355

Form 1293 rev.11

Mobile Geochemistry Inc.

23 August 2012

Mr. Josh Hopp
Kennedy/Jenks Consultants - Washington
32001 32nd Ave. South, Suite 100
Federal Way, WA 98001

H&P Project: KJ081612-14
Client Project: 1196016.00 Task 8 / Yakima, WA

Dear Mr. Josh Hopp:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 16-Aug-12 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FW-Influent-323	E208062-01	Vapor	13-Aug-12	16-Aug-12
FW-Inbtwn-219	E208062-02	Vapor	13-Aug-12	16-Aug-12
FW-Effluent-217	E208062-03	Vapor	13-Aug-12	16-Aug-12
BMS-SS-1-081312	E208062-04	Vapor	13-Aug-12	16-Aug-12
BMS-SS-4-081312	E208062-05	Vapor	13-Aug-12	16-Aug-12

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Soil Gas and Vapor Analysis

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BMS-SS-1-081312 (E208062-04) Vapor	**Sampled: 13-Aug-12**	**Received: 16-Aug-12**							
Helium (LCC)	**0.8**	0.1	%	1	EH21703	17-Aug-12	17-Aug-12	ASTM D1945M	
BMS-SS-4-081312 (E208062-05) Vapor	**Sampled: 13-Aug-12**	**Received: 16-Aug-12**							
Helium (LCC)	**1.8**	0.1	%	1	EH21703	17-Aug-12	17-Aug-12	ASTM D1945M	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Influent-323 (E208062-01) Vapor Sampled: 13-Aug-12 Received: 16-Aug-12									
Dichlorodifluoromethane (F12)	ND	5.0	ug/m3	1	EH22003	20-Aug-12	20-Aug-12	EPA TO-15	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	**66**	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	**5.9**	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	**32**	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	**29**	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	**110**	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Influent-323 (E208062-01) Vapor Sampled: 13-Aug-12 Received: 16-Aug-12									
o-Xylene	ND	4.4	ug/m3	1	EH22003	20-Aug-12	20-Aug-12	EPA TO-15	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*102 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*102 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*		*77-127*	"	"	"	"	
FW-Inbtwn-219 (E208062-02) Vapor Sampled: 13-Aug-12 Received: 16-Aug-12									
Dichlorodifluoromethane (F12)	**12**	5.0	ug/m3	1	EH22003	20-Aug-12	20-Aug-12	EPA TO-15	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	**1200**	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	**33**	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	**370**	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Inbtwn-219 (E208062-02) Vapor Sampled: 13-Aug-12 Received: 16-Aug-12									
Trichloroethene	ND	5.5	ug/m3	1	EH22003	20-Aug-12	20-Aug-12	EPA TO-15	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	**4.4**	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	ND	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	
o-Xylene	ND	4.4	"	"	"	"	"	"	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*96.0 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*100 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.9 %*		*77-127*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Effluent-217 (E208062-03) Vapor Sampled: 13-Aug-12 Received: 16-Aug-12									
Dichlorodifluoromethane (F12)	**8.8**	5.0	ug/m3	1	EH22003	20-Aug-12	20-Aug-12	EPA TO-15	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	**350**	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	**84**	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	ND	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	ND	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
FW-Effluent-217 (E208062-03) Vapor Sampled: 13-Aug-12 Received: 16-Aug-12									
o-Xylene	ND	4.4	ug/m3	1	EH22003	20-Aug-12	20-Aug-12	EPA TO-15	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*98.3 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*103 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*109 %*		*77-127*	"	"	"	"	
BMS-SS-1-081312 (E208062-04) Vapor Sampled: 13-Aug-12 Received: 16-Aug-12									
Dichlorodifluoromethane (F12)	ND	2.0	ug/m3	2	EH22003	20-Aug-12	20-Aug-12	EPA TO-15	
Chloromethane	ND	0.41	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	1.4	"	"	"	"	"	"	
Vinyl chloride	ND	0.26	"	"	"	"	"	"	
Bromomethane	ND	0.79	"	"	"	"	"	"	
Chloroethane	ND	0.54	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	**1.4**	1.1	"	"	"	"	"	"	
Acetone	**5.4**	2.4	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.80	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	3.1	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	**0.97**	0.71	"	"	"	"	"	"	
Carbon disulfide	ND	0.63	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.82	"	"	"	"	"	"	
2-Butanone (MEK)	**2.7**	1.2	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
Chloroform	ND	0.49	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.1	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.82	"	"	"	"	"	"	
Benzene	**0.47**	0.32	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.64	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BMS-SS-1-081312 (E208062-04) Vapor Sampled: 13-Aug-12 Received: 16-Aug-12									
Trichloroethene	ND	1.1	ug/m3	2	EH22003	20-Aug-12	20-Aug-12	EPA TO-15	
1,2-Dichloropropane	ND	0.94	"	"	"	"	"	"	
Bromodichloromethane	ND	1.4	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.92	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	1.7	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.92	"	"	"	"	"	"	
Toluene	**2.7**	1.5	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.1	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	1.7	"	"	"	"	"	"	
Dibromochloromethane	ND	1.7	"	"	"	"	"	"	
Tetrachloroethene	**450**	41	"	60	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1.6	"	2	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.94	"	"	"	"	"	"	
Ethylbenzene	ND	0.88	"	"	"	"	"	"	
m,p-Xylene	**2.8**	0.88	"	"	"	"	"	"	
Styrene	**0.99**	0.86	"	"	"	"	"	"	
o-Xylene	**1.1**	0.88	"	"	"	"	"	"	
Bromoform	ND	2.1	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.4	"	"	"	"	"	"	
4-Ethyltoluene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**3.3**	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	4.3	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*100 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*102 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*111 %*		*77-127*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BMS-SS-4-081312 (E208062-05) Vapor	**Sampled: 13-Aug-12**	**Received: 16-Aug-12**							
Dichlorodifluoromethane (F12)	ND	2.0	ug/m3	2	EH22003	20-Aug-12	20-Aug-12	EPA TO-15	
Chloromethane	ND	0.41	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	1.4	"	"	"	"	"	"	
Vinyl chloride	ND	0.26	"	"	"	"	"	"	
Bromomethane	ND	0.79	"	"	"	"	"	"	
Chloroethane	ND	0.54	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	1.1	"	"	"	"	"	"	
Acetone	**11**	2.4	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.80	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	3.1	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	**6200**	35	"	100	"	"	"	"	
Carbon disulfide	ND	0.63	"	2	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.82	"	"	"	"	"	"	
2-Butanone (MEK)	**1.8**	1.2	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
Chloroform	**1.4**	0.49	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.1	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.82	"	"	"	"	"	"	
Benzene	**0.60**	0.32	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.64	"	"	"	"	"	"	
Trichloroethene	ND	1.1	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.94	"	"	"	"	"	"	
Bromodichloromethane	ND	1.4	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.92	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	1.7	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.92	"	"	"	"	"	"	
Toluene	**5.7**	1.5	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.1	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	1.7	"	"	"	"	"	"	
Dibromochloromethane	ND	1.7	"	"	"	"	"	"	
Tetrachloroethene	**110**	1.4	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1.6	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.94	"	"	"	"	"	"	
Ethylbenzene	**1.3**	0.88	"	"	"	"	"	"	
m,p-Xylene	**5.8**	0.88	"	"	"	"	"	"	
Styrene	ND	0.86	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BMS-SS-4-081312 (E208062-05) Vapor	**Sampled: 13-Aug-12**	**Received: 16-Aug-12**							
o-Xylene	**1.8**	0.88	ug/m3	2	EH22003	20-Aug-12	20-Aug-12	EPA TO-15	
Bromoform	ND	2.1	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.4	"	"	"	"	"	"	
4-Ethyltoluene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**3.0**	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	4.3	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*97.8 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*96.2 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*		*77-127*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Soil Gas and Vapor Analysis - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH21703 - GC										
Blank (EH21703-BLK1)				Prepared & Analyzed: 17-Aug-12						
Helium (LCC)	ND	0.1	%							

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH22003 - TO-15										
Blank (EH22003-BLK1)				Prepared & Analyzed: 20-Aug-12						
Dichlorodifluoromethane (F12)	ND	1.0	ug/m3							
Chloromethane	ND	0.21	"							
Dichlorotetrafluoroethane (F114)	ND	0.71	"							
Vinyl chloride	ND	0.13	"							
Bromomethane	ND	0.39	"							
Chloroethane	ND	0.27	"							
Trichlorofluoromethane (F11)	ND	0.56	"							
Acetone	ND	1.2	"							
1,1-Dichloroethene	ND	0.40	"							
1,1,2-Trichlorotrifluoroethane (F113)	ND	1.5	"							
Methylene chloride (Dichloromethane)	ND	0.35	"							
Carbon disulfide	ND	0.32	"							
trans-1,2-Dichloroethene	ND	0.40	"							
1,1-Dichloroethane	ND	0.41	"							
2-Butanone (MEK)	ND	0.60	"							
cis-1,2-Dichloroethene	ND	0.40	"							
Chloroform	ND	0.25	"							
1,1,1-Trichloroethane	ND	0.55	"							
1,2-Dichloroethane (EDC)	ND	0.41	"							
Benzene	ND	0.16	"							
Carbon tetrachloride	ND	0.32	"							
Trichloroethene	ND	0.55	"							
1,2-Dichloropropane	ND	0.47	"							
Bromodichloromethane	ND	0.68	"							
cis-1,3-Dichloropropene	ND	0.46	"							
4-Methyl-2-pentanone (MIBK)	ND	0.83	"							
trans-1,3-Dichloropropene	ND	0.46	"							
Toluene	ND	0.76	"							
1,1,2-Trichloroethane	ND	0.55	"							
2-Hexanone (MBK)	ND	0.83	"							
Dibromochloromethane	ND	0.86	"							
Tetrachloroethene	ND	0.69	"							
1,2-Dibromoethane (EDB)	ND	0.78	"							
1,1,1,2-Tetrachloroethane	ND	0.70	"							

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH22003 - TO-15										
Blank (EH22003-BLK1)				Prepared & Analyzed: 20-Aug-12						
Chlorobenzene	ND	0.47	ug/m3							
Ethylbenzene	ND	0.44	"							
m,p-Xylene	ND	0.44	"							
Styrene	ND	0.43	"							
o-Xylene	ND	0.44	"							
Bromoform	ND	1.0	"							
1,1,2,2-Tetrachloroethane	ND	0.70	"							
4-Ethyltoluene	ND	0.50	"							
1,3,5-Trimethylbenzene	ND	0.50	"							
1,2,4-Trimethylbenzene	ND	0.50	"							
1,3-Dichlorobenzene	ND	0.61	"							
1,4-Dichlorobenzene	ND	0.61	"							
1,2-Dichlorobenzene	ND	0.61	"							
1,2,4-Trichlorobenzene	ND	0.75	"							
Hexachlorobutadiene	ND	2.1	"							
Surrogate: 1,2-Dichloroethane-d4	*215*		*"*	*214*		*100*	*76-134*			
Surrogate: Toluene-d8	*212*		*"*	*207*		*103*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*380*		*"*	*364*		*104*	*77-127*			
LCS (EH22003-BS1)				Prepared & Analyzed: 20-Aug-12						
Dichlorodifluoromethane (F12)	9.1	1.0	ug/m3	10.1		90.7	65-135		35	
Vinyl chloride	5.6	0.13	"	5.20		108	65-135		35	
Chloroethane	5.1	0.27	"	5.36		94.8	65-135		35	
Trichlorofluoromethane (F11)	12	0.56	"	11.3		106	65-135		35	
1,1-Dichloroethene	8.3	0.40	"	8.08		103	65-135		35	
1,1,2-Trichlorotrifluoroethane (F113)	17	1.5	"	15.5		112	65-135		35	
Methylene chloride (Dichloromethane)	6.7	0.35	"	7.08		94.6	65-135		35	
trans-1,2-Dichloroethene	8.3	0.40	"	8.08		103	65-135		35	
1,1-Dichloroethane	8.7	0.41	"	8.24		106	65-135		35	
cis-1,2-Dichloroethene	7.4	0.40	"	8.00		92.0	65-135		35	
Chloroform	9.8	0.25	"	9.92		99.1	65-135		35	
1,1,1-Trichloroethane	11	0.55	"	11.1		97.8	65-135		35	
1,2-Dichloroethane (EDC)	8.1	0.41	"	8.24		98.0	65-135		35	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH22003 - TO-15										
LCS (EH22003-BS1)				Prepared & Analyzed: 20-Aug-12						
Benzene	6.3	0.16	ug/m3	6.48		97.1	65-135		35	
Carbon tetrachloride	13	0.32	"	12.8		104	65-135		35	
Trichloroethene	11	0.55	"	11.0		96.4	65-135		35	
Toluene	7.1	0.76	"	7.68		92.6	65-135		35	
1,1,2-Trichloroethane	10	0.55	"	11.1		92.2	65-135		35	
Tetrachloroethene	13	0.69	"	13.8		90.9	65-135		35	
1,1,1,2-Tetrachloroethane	13	0.70	"	14.0		92.4	65-135		35	
Ethylbenzene	8.8	0.44	"	8.84		100	65-135		35	
m,p-Xylene	19	0.44	"	17.7		106	65-135		35	
o-Xylene	9.4	0.44	"	8.84		107	65-135		35	
1,1,2,2-Tetrachloroethane	14	0.70	"	14.0		102	65-135		35	
Surrogate: 1,2-Dichloroethane-d4	*223*		*"*	*214*		*104*	*76-134*			
Surrogate: Toluene-d8	*199*		*"*	*207*		*96.2*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*424*		*"*	*364*		*116*	*77-127*			
LCS Dup (EH22003-BSD1)				Prepared & Analyzed: 20-Aug-12						
Dichlorodifluoromethane (F12)	8.7	1.0	ug/m3	10.1		86.3	65-135	4.95	35	
Vinyl chloride	5.8	0.13	"	5.20		112	65-135	3.49	35	
Chloroethane	5.6	0.27	"	5.36		104	65-135	9.43	35	
Trichlorofluoromethane (F11)	12	0.56	"	11.3		102	65-135	3.16	35	
1,1-Dichloroethene	8.0	0.40	"	8.08		99.1	65-135	3.36	35	
1,1,2-Trichlorotrifluoroethane (F113)	17	1.5	"	15.5		108	65-135	3.75	35	
Methylene chloride (Dichloromethane)	6.4	0.35	"	7.08		90.7	65-135	4.14	35	
trans-1,2-Dichloroethene	8.1	0.40	"	8.08		101	65-135	1.96	35	
1,1-Dichloroethane	8.4	0.41	"	8.24		102	65-135	3.54	35	
cis-1,2-Dichloroethene	7.2	0.40	"	8.00		89.5	65-135	2.72	35	
Chloroform	9.8	0.25	"	9.92		98.6	65-135	0.554	35	
1,1,1-Trichloroethane	11	0.55	"	11.1		97.0	65-135	0.815	35	
1,2-Dichloroethane (EDC)	7.9	0.41	"	8.24		95.9	65-135	2.21	35	
Benzene	6.0	0.16	"	6.48		92.6	65-135	4.69	35	
Carbon tetrachloride	12	0.32	"	12.8		97.5	65-135	6.39	35	
Trichloroethene	11	0.55	"	11.0		98.1	65-135	1.74	35	
Toluene	7.3	0.76	"	7.68		95.6	65-135	3.22	35	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH22003 - TO-15										
LCS Dup (EH22003-BSD1)				Prepared & Analyzed: 20-Aug-12						
1,1,2-Trichloroethane	10	0.55	ug/m3	11.1		92.7	65-135	0.537	35	
Tetrachloroethene	13	0.69	"	13.8		91.7	65-135	0.872	35	
1,1,1,2-Tetrachloroethane	13	0.70	"	14.0		94.6	65-135	2.34	35	
Ethylbenzene	9.0	0.44	"	8.84		102	65-135	2.02	35	
m,p-Xylene	19	0.44	"	17.7		106	65-135	0.774	35	
o-Xylene	9.4	0.44	"	8.84		107	65-135	0.140	35	
1,1,2,2-Tetrachloroethane	15	0.70	"	14.0		104	65-135	1.99	35	
Surrogate: 1,2-Dichloroethane-d4	*215*		"	*214*		*101*	*76-134*			
Surrogate: Toluene-d8	*202*		"	*207*		*97.6*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*406*		"	*364*		*111*	*77-127*			

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ081612-14	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00 Task 8 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	23-Aug-12 15:00

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS
Certificate# 2742, 2745, & 2741 approved for LUFT
Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods:

1,2,4-Trichlorobenzene by EPA TO-15 & TO-14A
Hexachlorobutadiene by EPA TO-15 & TO-14A
1,2,4-Trimethylbenzene by EPA TO -14A
1,2-Dichlorobenzene by EPA TO-15 & TO-14A
1,3,5-Trimethylbenzene by EPA TO -14A
1,4-Dichlorobenzene by EPA TO-15 & TO-14A
Benzene by EPA TO-15 & TO-14A
Chlorobenzene by EPA TO-15 & TO-14A
Ethyl benzene by EPA TO-15 & TO-14A
Styrene by EPA TO-15 & TO-14A
Toluene by EPA TO-15 & TO-14A
Total Xylenes by EPA TO-15 & TO-14A
1,1,1-Trichloroethane by EPA TO-15 & TO-14A
1,1,2,2-Tetrachloroethane by EPA TO-15 & TO-14A
1,1,2-Trichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethene by EPA TO-15 & TO-14A
1,2-Dichloroethane by EPA TO-15 & TO-14A
1,2-Dichloropropane by EPA TO-15 & TO-14A
Benzyl Chloride by EPA TO-15 & TO-14A
Bromoform by EPA TO-15
Bromomethane by EPA TO-15 & TO-14A
Carbon tetrachloride by EPA TO-15 & TO-14A
Chloroethane by EPA TO-15
Chloroform by EPA TO-15 & TO-14A
Chloromethane by EPA TO-15 & TO-14A
cis-1,2-Dichloroethene by EPA TO-15
cis-1,2-Dichloropropene by EPA TO-15 & TO-14A
Methylene chloride by EPA TO -15 & TO-14A
Tetrachloroethane by EPA TO-15 & TO-14A
trans-1,2-Dichloroethene by EPA TO-15
trans-1,2-Dichloropropene by EPA TO-15 & TO-14A
Trichloroethene by EPA TO-15 & TO-14A
Vinyl chloride by EPA TO -15 & TO-14A
2-Butanone by EPA TO-15
4-Methyl-2-Pentanone by EPA TO-15
Hexane by EPA TO-15
Methyl tert-butyl ether by EPA TO-15
Vinyl acetate by EPA TO-15
Dibromochloromethane by EPA TO-15
Dichlorodifluoromethane by EPA TO-15 & TO-14A
Trichlorofluoromethane by EPA TO-15 & TO-14A
Naphthalene by EPA TO-15 & TO-14A
m&p Xylenes by EPA TO-15
o-Xylene by EPA TO-15
1,3-Butadiene by EPA TO-15
1,1,2-Trichlorotrifluoroethane by EPA TO-15 & TO-14A
Carbon disulfide by EPA TO-15
1,4-Dioxane by EPA TO-15
Cyclohexane by EPA TO-15
tert-Butyl Alcohol by EPA TO-15
1,3-Dichlorobenzene by EPA TO-15 & TO-14A
Heptane by EPA TO-15
Bromodichloromethane by EPA TO-15 & TO-14A

Chain of Custody Record

Mobile Geochemistry Inc.

☒ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Date: 8-13-12
WA H&P Project # KJ08l612-14
Outside Lab:

Client: Kennedy/Jenks Consultants
Address: 32001 32nd Ave S, Suite 100 Federal Way, WA 98001
Email: joshhopp@kennedyjenks.com / tyschreiner@kennedyjenks.com
Collector: Jason Shira - Ecology
Client Project # 1196016.00 Task 8
Location: Yakima, WA
Phone: 253-835-6408
Fax:
Page: 1 of 2
Project Contact: Josh Hopp / Ty Schreiner
Turn around time: Standard

Geotracker EDF: Yes ☐ No ☒
Global ID:
Excel EDD: Yes ☒ No ☐

Sample Receipt
Intact: ☑ Yes ☐ No
Seal Intact: ☑ Yes ☐ No ☐ N/A
Cold: ☐ Yes ☐ No ☑ N/A
Temperature: RT

Special Instructions:
UPS TRACK# 1Z 90T T61 87 4668 4644

Lab Work Order # E208062

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	Total # of containers	8260B Full List	8260B ☐ BTEX/OXY ☐ TPH gas	8015M TPH ☐ g ☐ d ☐ ext	418.1 TRPH	VOC's: Full List ☐ 8260B ☒ TO-15	VOC's: Short List/DTSC ☐ 8260B ☐ TO-15	VOC's: SAM, 8260B ☐ SAM A ☐ SAM B	Naphthalene ☐ 8260B ☐ TO-15	Oxygenates ☐ 8260B ☐ TO-15	TPHv gas ☐ 8260B ☐ TO-15	Ketones ☐ 8260B ☐ TO-15	Other ____ ☐ 8260B ☐ TO-15	Leak Check Compound ☐ 1,1 DFA ☐ OTHER	Methane	Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2	CAN#	VA<#
								SOIL/GW				SOIL VAPOR/AIR ANALYSIS												
FW-Influent-323		—	1509	8-13-12	Vapor	400mL summa	1					X											327-28	
FW-Inbtwn-219		—	1513	↓	↓	↓	1					X											216-4.1	
FW-Effluent-217		—	1519	↓	↓	↓	1					X											217-4.3	

Relinquished by: (Signature)	(company) Kennedy/Jenks	Received by: (Signature)	(company)	Date: 8/14/12 Time: 0930
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company) H&P	Date: 8/16/12 Time: 1100
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date: Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ Disposal ☐ Return to client ☐ Pickup

Chain of Custody Record

H&P Mobile Geochemistry Inc.
☒ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Date: 8-13-12
WA H&P Project # KJO8/612-14
Outside Lab:

Client: Kennedy/Jenks Consultants
Address: 32001 32nd Ave S, Suite 100 Federal Way, WA 98001
Email: Josh.Hopp@KennedyJenks.com / Ty.Schreiner@KennedyJenks.com
Collector: Josh Hopp
Client Project # 11960.00 Task 9
Location: Yakima, WA
Phone: 253-835-6408
Fax:
Page: 2 of 2
Project Contact: Josh Hopp / Ty Schreiner
Turn around time: Standard

Geotracker EDF: Yes ☐ No ☒
Global ID:
Excel EDD: Yes ☒ No ☐

Sample Receipt
Intact: ☑ Yes ☐ No
Seal Intact: ☑ Yes ☐ No ☐ N/A
Cold: ☐ Yes ☐ No ☑ N/A
Temperature: RT

Special Instructions:

Lab Work Order # E208062

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	Total # of containers	8260B Full List	8260B ☐ BTEX/OXY ☐ TPH gas	8015M TPH ☐ g ☐ d ☐ ext	418.1 TRPH	VOC's: Full List ☐ 8260B ☒ TO-15	VOC's: Short List/DTSC ☐ 8260B ☐ TO-15	VOC's: SAM, 8260B ☐ SAM A ☐ SAM B	Naphthalene ☐ 8260B ☐ TO-15	Oxygenates ☐ 8260B ☐ TO-15	TPHv gas ☐ 8260B ☐ TO-15	Ketones ☐ 8260B ☐ TO-15	Other ____ ☐ 8260B ☐ TO-15	Leak Check Compound ☐ 1,1 DFA ☒ OTHER #2	Methane	Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2	CAN#	VA-C#
								SOIL/GW				SOIL VAPOR/AIR ANALYSIS												
BMS-SS-2-081312		250mL	1308	8-13-12	~~Soil~~ Grab	6L Summa	1					X								X			289-5.0	
BMS-SS-4-081312		1000mL	1200	↓	↓	↓	1					X								X			329-5.6	

Relinquished by: (Signature) JCH	(company) Kennedy/Jenks	Received by: (Signature)	(company)	Date: 8/14/12	Time: 0930
Relinquished by: (Signature)	(company)	Received by: (Signature) SMartin	(company) HP	Date: 8/16/12	Time: 1100
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ Disposal ☐ Return to client ☐ Pickup

eurofins | Air Toxics

10/2/2012
Ms. Sherri Peterson
Kennedy/Jenks Consultants
1191 2nd Ave.
Suite 630
Seattle WA 98101

Project Name: WDOE Yakima
Project #: 1196016.00 Task 9 Phase 00
Workorder #: 1209312

Dear Ms. Sherri Peterson

The following report includes the data for the above referenced project for sample(s) received on 9/18/2012 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

eurofins | Air Toxics

WORK ORDER #: 1209312

Work Order Summary

CLIENT:	Ms. Sherri Peterson Kennedy/Jenks Consultants 1191 2nd Ave. Suite 630 Seattle, WA 98101	**BILL TO:**	Ms. Sherri Peterson Kennedy/Jenks Consultants 1191 2nd Ave. Suite 630 Seattle, WA 98101
PHONE:	206-652-4905	**P.O. #**	
FAX:		**PROJECT #**	1196016.00 Task 9 Phase 00 WDOE Yakima
DATE RECEIVED:	09/18/2012	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	10/02/2012		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	BMS-M1-091212	Modified TO-15	7.5 "Hg	5 psi
01B	BMS-M1-091212	Modified TO-15	7.5 "Hg	5 psi
02A	BMS-M3-091212	Modified TO-15	7.5 "Hg	5 psi
02B	BMS-M3-091212	Modified TO-15	7.5 "Hg	5 psi
03A	AMB-UPWIND-091212	Modified TO-15	8.0 "Hg	5 psi
03B	AMB-UPWIND-091212	Modified TO-15	8.0 "Hg	5 psi
04A	Lab Blank	Modified TO-15	NA	NA
04B	Lab Blank	Modified TO-15	NA	NA
05A	CCV	Modified TO-15	NA	NA
05B	CCV	Modified TO-15	NA	NA
06A	LCS	Modified TO-15	NA	NA
06AA	LCSD	Modified TO-15	NA	NA
06B	LCS	Modified TO-15	NA	NA
06BB	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 10/02/12

Technical Director

Certfication numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NY NELAP - 11291,
TX NELAP - T104704434-12-5, UT NELAP CA009332012-3, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2011, Expiration date: 10/17/2012.
Eurofins Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 Std Full Scan/SIM
Kennedy/Jenks Consultants
Workorder# 1209312

Three 6 Liter Summa Special (SIM Certified) samples were received on September 18, 2012. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liter of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to </= 40% RSD	For SIM only: Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to </= 40% RSD
Daily Calibration	+- 30% Difference	For Std. Full Scan: </= 30% Difference with two allowed out up to </=40%.; flag and narrate outliers For SIM: Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	For SIM only: Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

Ethanol was detected at concentrations less than 5 times the reporting limit in sample AMB-UPWIND-091212. Because the preceding sample contained concentrations of Ethanol exceeding the calibration range, the result for this compound in sample AMB-UPWIND-091212 may be biased high.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

eurofins | Air Toxics

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BMS-M1-091212

Lab ID#: 1209312-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.40	0.88	2.0
Chloromethane	0.18	0.40	0.37	0.83
Freon 11	0.18	0.19	1.0	1.1
Ethanol	0.90	82 E	1.7	160 E
Acetone	0.90	9.3	2.1	22
2-Propanol	0.90	7.4	2.2	18
Chloroform	0.18	0.24	0.87	1.2
Heptane	0.18	0.80	0.73	3.3

Client Sample ID: BMS-M1-091212

Lab ID#: 1209312-01B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.090	1.4	0.28	4.4
Trichloroethene	0.0054	0.011	0.029	0.058
Toluene	0.036	1.0	0.13	3.8
Ethyl Benzene	0.036	0.078	0.16	0.34
m,p-Xylene	0.072	0.27	0.31	1.2
o-Xylene	0.036	0.096	0.16	0.42

Client Sample ID: BMS-M3-091212

Lab ID#: 1209312-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.44	0.88	2.2
Chloromethane	0.18	0.52	0.37	1.1
Freon 11	0.18	0.23	1.0	1.3
Ethanol	0.90	92 E	1.7	170 E
Acetone	0.90	9.5	2.1	23
2-Propanol	0.90	14	2.2	35
Chloroform	0.18	0.22	0.87	1.1
Heptane	0.18	0.44	0.73	1.8

eurofins | Air Toxics

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BMS-M3-091212

Lab ID#: 1209312-02B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.090	0.32	0.28	1.0
Trichloroethene	0.0054	0.0060	0.029	0.032
Toluene	0.036	0.76	0.13	2.8
Ethyl Benzene	0.036	0.071	0.16	0.31
m,p-Xylene	0.072	0.23	0.31	1.0
o-Xylene	0.036	0.081	0.16	0.35

Client Sample ID: AMB-UPWIND-091212

Lab ID#: 1209312-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.45	0.90	2.2
Chloromethane	0.18	0.44	0.38	0.90
Freon 11	0.18	0.21	1.0	1.2
Ethanol	0.92	1.7	1.7	3.2
Acetone	0.92	3.1	2.2	7.4

Client Sample ID: AMB-UPWIND-091212

Lab ID#: 1209312-03B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.092	0.20	0.29	0.64
Toluene	0.037	0.42	0.14	1.6
Ethyl Benzene	0.037	0.043	0.16	0.19
m,p-Xylene	0.073	0.13	0.32	0.58
o-Xylene	0.037	0.051	0.16	0.22

eurofins | Air Toxics

Client Sample ID: BMS-M1-091212

Lab ID#: 1209312-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092113**	**Date of Collection:**	**9/12/12 5:55:00 PM**
Dil. Factor:	**1.79**	**Date of Analysis:**	**9/21/12 07:11 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.40	0.88	2.0
Freon 114	0.18	Not Detected	1.2	Not Detected
Chloromethane	0.18	0.40	0.37	0.83
1,3-Butadiene	0.18	Not Detected	0.40	Not Detected
Bromomethane	0.18	Not Detected	0.70	Not Detected
Chloroethane	0.90	Not Detected	2.4	Not Detected
Freon 11	0.18	0.19	1.0	1.1
Ethanol	0.90	82 E	1.7	160 E
Freon 113	0.18	Not Detected	1.4	Not Detected
Acetone	0.90	9.3	2.1	22
2-Propanol	0.90	7.4	2.2	18
Carbon Disulfide	0.90	Not Detected	2.8	Not Detected
3-Chloropropene	0.90	Not Detected	2.8	Not Detected
Methylene Chloride	0.36	Not Detected	1.2	Not Detected
Hexane	0.18	Not Detected	0.63	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.90	Not Detected	2.6	Not Detected
Tetrahydrofuran	0.90	Not Detected	2.6	Not Detected
Chloroform	0.18	0.24	0.87	1.2
Cyclohexane	0.18	Not Detected	0.62	Not Detected
Carbon Tetrachloride	0.18	Not Detected	1.1	Not Detected
2,2,4-Trimethylpentane	0.90	Not Detected	4.2	Not Detected
Heptane	0.18	0.80	0.73	3.3
1,2-Dichloropropane	0.18	Not Detected	0.83	Not Detected
1,4-Dioxane	0.18	Not Detected	0.64	Not Detected
Bromodichloromethane	0.18	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.18	Not Detected	0.81	Not Detected
4-Methyl-2-pentanone	0.18	Not Detected	0.73	Not Detected
trans-1,3-Dichloropropene	0.18	Not Detected	0.81	Not Detected
2-Hexanone	0.90	Not Detected	3.7	Not Detected
Dibromochloromethane	0.18	Not Detected	1.5	Not Detected
1,2-Dibromoethane (EDB)	0.18	Not Detected	1.4	Not Detected
Chlorobenzene	0.18	Not Detected	0.82	Not Detected
Styrene	0.18	Not Detected	0.76	Not Detected
Bromoform	0.18	Not Detected	1.8	Not Detected
Cumene	0.18	Not Detected	0.88	Not Detected
Propylbenzene	0.18	Not Detected	0.88	Not Detected
4-Ethyltoluene	0.18	Not Detected	0.88	Not Detected
1,3,5-Trimethylbenzene	0.18	Not Detected	0.88	Not Detected
1,2,4-Trimethylbenzene	0.18	Not Detected	0.88	Not Detected
1,3-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,4-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
alpha-Chlorotoluene	0.18	Not Detected	0.93	Not Detected

eurofins | Air Toxics

Client Sample ID: BMS-M1-091212

Lab ID#: 1209312-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092113**	**Date of Collection: 9/12/12 5:55:00 PM**	
Dil. Factor:	**1.79**	**Date of Analysis: 9/21/12 07:11 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,2,4-Trichlorobenzene	0.90	Not Detected	6.6	Not Detected
Hexachlorobutadiene	0.90	Not Detected	9.5	Not Detected
1,1,1,2-Tetrachloroethane	0.90	Not Detected	6.1	Not Detected

E = Exceeds instrument calibration range.

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	102	70-130

eurofins | Air Toxics

Client Sample ID: BMS-M1-091212

Lab ID#: 1209312-01B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092113sim**	**Date of Collection:**	**9/12/12 5:55:00 PM**
Dil. Factor:	**1.79**	**Date of Analysis:**	**9/21/12 07:11 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.018	Not Detected	0.046	Not Detected
1,1-Dichloroethene	0.018	Not Detected	0.071	Not Detected
1,1-Dichloroethane	0.036	Not Detected	0.14	Not Detected
cis-1,2-Dichloroethene	0.036	Not Detected	0.14	Not Detected
1,1,1-Trichloroethane	0.036	Not Detected	0.20	Not Detected
Benzene	0.090	1.4	0.28	4.4
1,2-Dichloroethane	0.036	Not Detected	0.14	Not Detected
Trichloroethene	0.0054	0.011	0.029	0.058
Toluene	0.036	1.0	0.13	3.8
1,1,2-Trichloroethane	0.036	Not Detected	0.20	Not Detected
Tetrachloroethene	0.036	Not Detected	0.24	Not Detected
Ethyl Benzene	0.036	0.078	0.16	0.34
m,p-Xylene	0.072	0.27	0.31	1.2
o-Xylene	0.036	0.096	0.16	0.42
1,1,2,2-Tetrachloroethane	0.036	Not Detected	0.24	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.71	Not Detected
Methyl tert-butyl ether	0.18	Not Detected	0.64	Not Detected

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	104	70-130

eurofins | Air Toxics

Client Sample ID: BMS-M3-091212

Lab ID#: 1209312-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092115**	**Date of Collection:**	**9/12/12 5:57:00 PM**
Dil. Factor:	**1.79**	**Date of Analysis:**	**9/21/12 09:19 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.44	0.88	2.2
Freon 114	0.18	Not Detected	1.2	Not Detected
Chloromethane	0.18	0.52	0.37	1.1
1,3-Butadiene	0.18	Not Detected	0.40	Not Detected
Bromomethane	0.18	Not Detected	0.70	Not Detected
Chloroethane	0.90	Not Detected	2.4	Not Detected
Freon 11	0.18	0.23	1.0	1.3
Ethanol	0.90	92 E	1.7	170 E
Freon 113	0.18	Not Detected	1.4	Not Detected
Acetone	0.90	9.5	2.1	23
2-Propanol	0.90	14	2.2	35
Carbon Disulfide	0.90	Not Detected	2.8	Not Detected
3-Chloropropene	0.90	Not Detected	2.8	Not Detected
Methylene Chloride	0.36	Not Detected	1.2	Not Detected
Hexane	0.18	Not Detected	0.63	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.90	Not Detected	2.6	Not Detected
Tetrahydrofuran	0.90	Not Detected	2.6	Not Detected
Chloroform	0.18	0.22	0.87	1.1
Cyclohexane	0.18	Not Detected	0.62	Not Detected
Carbon Tetrachloride	0.18	Not Detected	1.1	Not Detected
2,2,4-Trimethylpentane	0.90	Not Detected	4.2	Not Detected
Heptane	0.18	0.44	0.73	1.8
1,2-Dichloropropane	0.18	Not Detected	0.83	Not Detected
1,4-Dioxane	0.18	Not Detected	0.64	Not Detected
Bromodichloromethane	0.18	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.18	Not Detected	0.81	Not Detected
4-Methyl-2-pentanone	0.18	Not Detected	0.73	Not Detected
trans-1,3-Dichloropropene	0.18	Not Detected	0.81	Not Detected
2-Hexanone	0.90	Not Detected	3.7	Not Detected
Dibromochloromethane	0.18	Not Detected	1.5	Not Detected
1,2-Dibromoethane (EDB)	0.18	Not Detected	1.4	Not Detected
Chlorobenzene	0.18	Not Detected	0.82	Not Detected
Styrene	0.18	Not Detected	0.76	Not Detected
Bromoform	0.18	Not Detected	1.8	Not Detected
Cumene	0.18	Not Detected	0.88	Not Detected
Propylbenzene	0.18	Not Detected	0.88	Not Detected
4-Ethyltoluene	0.18	Not Detected	0.88	Not Detected
1,3,5-Trimethylbenzene	0.18	Not Detected	0.88	Not Detected
1,2,4-Trimethylbenzene	0.18	Not Detected	0.88	Not Detected
1,3-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,4-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
alpha-Chlorotoluene	0.18	Not Detected	0.93	Not Detected

eurofins | Air Toxics

Client Sample ID: BMS-M3-091212

Lab ID#: 1209312-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092115**	**Date of Collection: 9/12/12 5:57:00 PM**	
Dil. Factor:	**1.79**	**Date of Analysis: 9/21/12 09:19 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,2,4-Trichlorobenzene	0.90	Not Detected	6.6	Not Detected
Hexachlorobutadiene	0.90	Not Detected	9.5	Not Detected
1,1,1,2-Tetrachloroethane	0.90	Not Detected	6.1	Not Detected

E = Exceeds instrument calibration range.

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	103	70-130

eurofins | Air Toxics

Client Sample ID: BMS-M3-091212

Lab ID#: 1209312-02B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092115sim**	**Date of Collection: 9/12/12 5:57:00 PM**	
Dil. Factor:	**1.79**	**Date of Analysis: 9/21/12 09:19 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.018	Not Detected	0.046	Not Detected
1,1-Dichloroethene	0.018	Not Detected	0.071	Not Detected
1,1-Dichloroethane	0.036	Not Detected	0.14	Not Detected
cis-1,2-Dichloroethene	0.036	Not Detected	0.14	Not Detected
1,1,1-Trichloroethane	0.036	Not Detected	0.20	Not Detected
Benzene	0.090	0.32	0.28	1.0
1,2-Dichloroethane	0.036	Not Detected	0.14	Not Detected
Trichloroethene	0.0054	0.0060	0.029	0.032
Toluene	0.036	0.76	0.13	2.8
1,1,2-Trichloroethane	0.036	Not Detected	0.20	Not Detected
Tetrachloroethene	0.036	Not Detected	0.24	Not Detected
Ethyl Benzene	0.036	0.071	0.16	0.31
m,p-Xylene	0.072	0.23	0.31	1.0
o-Xylene	0.036	0.081	0.16	0.35
1,1,2,2-Tetrachloroethane	0.036	Not Detected	0.24	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.71	Not Detected
Methyl tert-butyl ether	0.18	Not Detected	0.64	Not Detected

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	104	70-130

eurofins | Air Toxics

Client Sample ID: AMB-UPWIND-091212

Lab ID#: 1209312-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092116**	**Date of Collection:**	**9/12/12 5:55:00 PM**
Dil. Factor:	**1.83**	**Date of Analysis:**	**9/21/12 10:17 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.45	0.90	2.2
Freon 114	0.18	Not Detected	1.3	Not Detected
Chloromethane	0.18	0.44	0.38	0.90
1,3-Butadiene	0.18	Not Detected	0.40	Not Detected
Bromomethane	0.18	Not Detected	0.71	Not Detected
Chloroethane	0.92	Not Detected	2.4	Not Detected
Freon 11	0.18	0.21	1.0	1.2
Ethanol	0.92	1.7	1.7	3.2
Freon 113	0.18	Not Detected	1.4	Not Detected
Acetone	0.92	3.1	2.2	7.4
2-Propanol	0.92	Not Detected	2.2	Not Detected
Carbon Disulfide	0.92	Not Detected	2.8	Not Detected
3-Chloropropene	0.92	Not Detected	2.9	Not Detected
Methylene Chloride	0.37	Not Detected	1.3	Not Detected
Hexane	0.18	Not Detected	0.64	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.92	Not Detected	2.7	Not Detected
Tetrahydrofuran	0.92	Not Detected	2.7	Not Detected
Chloroform	0.18	Not Detected	0.89	Not Detected
Cyclohexane	0.18	Not Detected	0.63	Not Detected
Carbon Tetrachloride	0.18	Not Detected	1.2	Not Detected
2,2,4-Trimethylpentane	0.92	Not Detected	4.3	Not Detected
Heptane	0.18	Not Detected	0.75	Not Detected
1,2-Dichloropropane	0.18	Not Detected	0.84	Not Detected
1,4-Dioxane	0.18	Not Detected	0.66	Not Detected
Bromodichloromethane	0.18	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.18	Not Detected	0.83	Not Detected
4-Methyl-2-pentanone	0.18	Not Detected	0.75	Not Detected
trans-1,3-Dichloropropene	0.18	Not Detected	0.83	Not Detected
2-Hexanone	0.92	Not Detected	3.7	Not Detected
Dibromochloromethane	0.18	Not Detected	1.6	Not Detected
1,2-Dibromoethane (EDB)	0.18	Not Detected	1.4	Not Detected
Chlorobenzene	0.18	Not Detected	0.84	Not Detected
Styrene	0.18	Not Detected	0.78	Not Detected
Bromoform	0.18	Not Detected	1.9	Not Detected
Cumene	0.18	Not Detected	0.90	Not Detected
Propylbenzene	0.18	Not Detected	0.90	Not Detected
4-Ethyltoluene	0.18	Not Detected	0.90	Not Detected
1,3,5-Trimethylbenzene	0.18	Not Detected	0.90	Not Detected
1,2,4-Trimethylbenzene	0.18	Not Detected	0.90	Not Detected
1,3-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,4-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
alpha-Chlorotoluene	0.18	Not Detected	0.95	Not Detected

eurofins | Air Toxics

Client Sample ID: AMB-UPWIND-091212

Lab ID#: 1209312-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092116**	**Date of Collection: 9/12/12 5:55:00 PM**	
Dil. Factor:	**1.83**	**Date of Analysis: 9/21/12 10:17 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,2,4-Trichlorobenzene	0.92	Not Detected	6.8	Not Detected
Hexachlorobutadiene	0.92	Not Detected	9.8	Not Detected
1,1,1,2-Tetrachloroethane	0.92	Not Detected	6.3	Not Detected

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	94	70-130
4-Bromofluorobenzene	104	70-130

eurofins | Air Toxics

Client Sample ID: AMB-UPWIND-091212

Lab ID#: 1209312-03B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092116sim**	**Date of Collection: 9/12/12 5:55:00 PM**	
Dil. Factor:	**1.83**	**Date of Analysis: 9/21/12 10:17 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.018	Not Detected	0.047	Not Detected
1,1-Dichloroethene	0.018	Not Detected	0.072	Not Detected
1,1-Dichloroethane	0.037	Not Detected	0.15	Not Detected
cis-1,2-Dichloroethene	0.037	Not Detected	0.14	Not Detected
1,1,1-Trichloroethane	0.037	Not Detected	0.20	Not Detected
Benzene	0.092	0.20	0.29	0.64
1,2-Dichloroethane	0.037	Not Detected	0.15	Not Detected
Trichloroethene	0.0055	Not Detected	0.030	Not Detected
Toluene	0.037	0.42	0.14	1.6
1,1,2-Trichloroethane	0.037	Not Detected	0.20	Not Detected
Tetrachloroethene	0.037	Not Detected	0.25	Not Detected
Ethyl Benzene	0.037	0.043	0.16	0.19
m,p-Xylene	0.073	0.13	0.32	0.58
o-Xylene	0.037	0.051	0.16	0.22
1,1,2,2-Tetrachloroethane	0.037	Not Detected	0.25	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.72	Not Detected
Methyl tert-butyl ether	0.18	Not Detected	0.66	Not Detected

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	103	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1209312-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092111a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 05:20 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.10	Not Detected	0.49	Not Detected
Freon 114	0.10	Not Detected	0.70	Not Detected
Chloromethane	0.10	Not Detected	0.21	Not Detected
1,3-Butadiene	0.10	Not Detected	0.22	Not Detected
Bromomethane	0.10	Not Detected	0.39	Not Detected
Chloroethane	0.50	Not Detected	1.3	Not Detected
Freon 11	0.10	Not Detected	0.56	Not Detected
Ethanol	0.50	Not Detected	0.94	Not Detected
Freon 113	0.10	Not Detected	0.77	Not Detected
Acetone	0.50	Not Detected	1.2	Not Detected
2-Propanol	0.50	Not Detected	1.2	Not Detected
Carbon Disulfide	0.50	Not Detected	1.6	Not Detected
3-Chloropropene	0.50	Not Detected	1.6	Not Detected
Methylene Chloride	0.20	Not Detected	0.69	Not Detected
Hexane	0.10	Not Detected	0.35	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	Not Detected	1.5	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.10	Not Detected	0.49	Not Detected
Cyclohexane	0.10	Not Detected	0.34	Not Detected
Carbon Tetrachloride	0.10	Not Detected	0.63	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Heptane	0.10	Not Detected	0.41	Not Detected
1,2-Dichloropropane	0.10	Not Detected	0.46	Not Detected
1,4-Dioxane	0.10	Not Detected	0.36	Not Detected
Bromodichloromethane	0.10	Not Detected	0.67	Not Detected
cis-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
4-Methyl-2-pentanone	0.10	Not Detected	0.41	Not Detected
trans-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
2-Hexanone	0.50	Not Detected	2.0	Not Detected
Dibromochloromethane	0.10	Not Detected	0.85	Not Detected
1,2-Dibromoethane (EDB)	0.10	Not Detected	0.77	Not Detected
Chlorobenzene	0.10	Not Detected	0.46	Not Detected
Styrene	0.10	Not Detected	0.42	Not Detected
Bromoform	0.10	Not Detected	1.0	Not Detected
Cumene	0.10	Not Detected	0.49	Not Detected
Propylbenzene	0.10	Not Detected	0.49	Not Detected
4-Ethyltoluene	0.10	Not Detected	0.49	Not Detected
1,3,5-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,2,4-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,3-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,4-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
alpha-Chlorotoluene	0.10	Not Detected	0.52	Not Detected

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1209312-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092111a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 05:20 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,2,4-Trichlorobenzene	0.50	Not Detected	3.7	Not Detected
Hexachlorobutadiene	0.50	Not Detected	5.3	Not Detected
1,1,1,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	98	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1209312-04B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092111asim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 05:20 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
1,1-Dichloroethene	0.010	Not Detected	0.040	Not Detected
1,1-Dichloroethane	0.020	Not Detected	0.081	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
1,1,1-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Benzene	0.050	Not Detected	0.16	Not Detected
1,2-Dichloroethane	0.020	Not Detected	0.081	Not Detected
Trichloroethene	0.0030	Not Detected	0.016	Not Detected
Toluene	0.020	Not Detected	0.075	Not Detected
1,1,2-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected
Ethyl Benzene	0.020	Not Detected	0.087	Not Detected
m,p-Xylene	0.040	Not Detected	0.17	Not Detected
o-Xylene	0.020	Not Detected	0.087	Not Detected
1,1,2,2-Tetrachloroethane	0.020	Not Detected	0.14	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	100	70-130

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1209312-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092102**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 09:03 AM**	

Compound	%Recovery
Freon 12	90
Freon 114	93
Chloromethane	75
1,3-Butadiene	89
Bromomethane	119
Chloroethane	91
Freon 11	88
Ethanol	90
Freon 113	88
Acetone	88
2-Propanol	91
Carbon Disulfide	86
3-Chloropropene	94
Methylene Chloride	84
Hexane	104
2-Butanone (Methyl Ethyl Ketone)	90
Tetrahydrofuran	90
Chloroform	82
Cyclohexane	91
Carbon Tetrachloride	83
2,2,4-Trimethylpentane	98
Heptane	97
1,2-Dichloropropane	82
1,4-Dioxane	89
Bromodichloromethane	84
cis-1,3-Dichloropropene	88
4-Methyl-2-pentanone	101
trans-1,3-Dichloropropene	92
2-Hexanone	98
Dibromochloromethane	86
1,2-Dibromoethane (EDB)	81
Chlorobenzene	88
Styrene	103
Bromoform	86
Cumene	108
Propylbenzene	108
4-Ethyltoluene	110
1,3,5-Trimethylbenzene	110
1,2,4-Trimethylbenzene	121
1,3-Dichlorobenzene	100
1,4-Dichlorobenzene	98
alpha-Chlorotoluene	100

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1209312-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092102**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 09:03 AM**	

Compound	**%Recovery**
1,2-Dichlorobenzene	97
1,2,4-Trichlorobenzene	104
Hexachlorobutadiene	88
1,1,1,2-Tetrachloroethane	101

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	103	70-130

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1209312-05B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092102sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 09:03 AM**	

Compound	%Recovery
Vinyl Chloride	91
1,1-Dichloroethene	90
1,1-Dichloroethane	92
cis-1,2-Dichloroethene	98
1,1,1-Trichloroethane	89
Benzene	80
1,2-Dichloroethane	82
Trichloroethene	79
Toluene	90
1,1,2-Trichloroethane	84
Tetrachloroethene	82
Ethyl Benzene	103
m,p-Xylene	114
o-Xylene	117
1,1,2,2-Tetrachloroethane	81
trans-1,2-Dichloroethene	94
Methyl tert-butyl ether	113

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	109	70-130
4-Bromofluorobenzene	110	70-130

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1209312-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092103**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 09:48 AM**	

Compound	%Recovery
Freon 12	94
Freon 114	93
Chloromethane	79
1,3-Butadiene	93
Bromomethane	126
Chloroethane	102
Freon 11	94
Ethanol	90
Freon 113	94
Acetone	99
2-Propanol	102
Carbon Disulfide	113
3-Chloropropene	116
Methylene Chloride	88
Hexane	115
2-Butanone (Methyl Ethyl Ketone)	94
Tetrahydrofuran	96
Chloroform	91
Cyclohexane	100
Carbon Tetrachloride	92
2,2,4-Trimethylpentane	103
Heptane	94
1,2-Dichloropropane	84
1,4-Dioxane	90
Bromodichloromethane	87
cis-1,3-Dichloropropene	89
4-Methyl-2-pentanone	102
trans-1,3-Dichloropropene	97
2-Hexanone	111
Dibromochloromethane	90
1,2-Dibromoethane (EDB)	86
Chlorobenzene	93
Styrene	108
Bromoform	89
Cumene	114
Propylbenzene	115
4-Ethyltoluene	112
1,3,5-Trimethylbenzene	117
1,2,4-Trimethylbenzene	123
1,3-Dichlorobenzene	106
1,4-Dichlorobenzene	104
alpha-Chlorotoluene	104

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1209312-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092103**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 09:48 AM**	

Compound	**%Recovery**
1,2-Dichlorobenzene	102
1,2,4-Trichlorobenzene	104
Hexachlorobutadiene	86
1,1,1,2-Tetrachloroethane	Not Spiked

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	103	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1209312-06AA

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 10:39 AM**	

Compound	%Recovery
Freon 12	93
Freon 114	94
Chloromethane	79
1,3-Butadiene	93
Bromomethane	127
Chloroethane	96
Freon 11	91
Ethanol	87
Freon 113	94
Acetone	100
2-Propanol	101
Carbon Disulfide	114
3-Chloropropene	114
Methylene Chloride	89
Hexane	112
2-Butanone (Methyl Ethyl Ketone)	95
Tetrahydrofuran	98
Chloroform	90
Cyclohexane	102
Carbon Tetrachloride	90
2,2,4-Trimethylpentane	101
Heptane	95
1,2-Dichloropropane	82
1,4-Dioxane	91
Bromodichloromethane	86
cis-1,3-Dichloropropene	90
4-Methyl-2-pentanone	94
trans-1,3-Dichloropropene	96
2-Hexanone	107
Dibromochloromethane	89
1,2-Dibromoethane (EDB)	84
Chlorobenzene	94
Styrene	107
Bromoform	88
Cumene	113
Propylbenzene	114
4-Ethyltoluene	110
1,3,5-Trimethylbenzene	113
1,2,4-Trimethylbenzene	123
1,3-Dichlorobenzene	105
1,4-Dichlorobenzene	101
alpha-Chlorotoluene	102

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1209312-06AA

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 10:39 AM**	

Compound	%Recovery
1,2-Dichlorobenzene	104
1,2,4-Trichlorobenzene	110
Hexachlorobutadiene	92
1,1,1,2-Tetrachloroethane	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	109	70-130

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1209312-06B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092103sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 09:48 AM**	

Compound	**%Recovery**
Vinyl Chloride	93
1,1-Dichloroethene	100
1,1-Dichloroethane	96
cis-1,2-Dichloroethene	103
1,1,1-Trichloroethane	96
Benzene	82
1,2-Dichloroethane	86
Trichloroethene	83
Toluene	93
1,1,2-Trichloroethane	87
Tetrachloroethene	84
Ethyl Benzene	106
m,p-Xylene	120
o-Xylene	121
1,1,2,2-Tetrachloroethane	86
trans-1,2-Dichloroethene	110
Methyl tert-butyl ether	117

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	110	70-130
4-Bromofluorobenzene	108	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1209312-06BB

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092104sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 10:39 AM**	

Compound	%Recovery
Vinyl Chloride	93
1,1-Dichloroethene	100
1,1-Dichloroethane	95
cis-1,2-Dichloroethene	103
1,1,1-Trichloroethane	95
Benzene	80
1,2-Dichloroethane	83
Trichloroethene	82
Toluene	91
1,1,2-Trichloroethane	87
Tetrachloroethene	84
Ethyl Benzene	105
m,p-Xylene	119
o-Xylene	120
1,1,2,2-Tetrachloroethane	86
trans-1,2-Dichloroethene	110
Methyl tert-butyl ether	118

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	108	70-130
4-Bromofluorobenzene	110	70-130

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager: Sherri Peterson

Collected by: (Print and Sign) Josh Hopp JHopp

Company: Kennedy/Jenks Consultants Email: sherripeterson@kennedyjenks.com

Address: 1191 2nd Ave, Suite 630 City: Seattle State: WA Zip: 98103

Phone: 206-753-3409 Fax: 206-652-4927

Project Info:
P.O. #:
Project #: 1176016.00 Task 9 Phase 00
Project Name: WDOE Yakima

Turn Around Time:
☒ Normal
☐ Rush
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
01AB	BMS-M1-091212	5681	09/12/12	0620-1755	Full List VOC's by TO-15	-29	-9.5		
02AB	BMS-M3-091212	34487	↓	0620-1757	↓	-28.5	-7		
03AB	AMB-UPWIND-091212	33925	↓	0620-1755	↓	-29	-8.5		

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
JHopp 9/13/12 1500	ATL 9/15/12 0745
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time

Notes:
Please cc: Josh Hopp for results
Josh.Hopp@KennedyJenks.com

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	UPS		N/A	Good	Yes No (None)	1209312

Form 1293 rev.11

Mobile Geochemistry Inc.

28 September 2012

Mr. Josh Hopp
Kennedy/Jenks Consultants - Washington
32001 32nd Ave. South, Suite 100
Federal Way, WA 98001

H&P Project: KJ091812-13
Client Project: 1196016.00/Task9/00 / Yakima, WA

Dear Mr. Josh Hopp:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 18-Sep-12 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BMS-SS-1-091212	E209068-01	Vapor	12-Sep-12	18-Sep-12
BMS-SS-4-091212	E209068-02	Vapor	12-Sep-12	18-Sep-12

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

Soil Gas and Vapor Analysis

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BMS-SS-1-091212 (E209068-01) Vapor	**Sampled: 12-Sep-12**	**Received: 18-Sep-12**							
Helium (LCC)	**0.2**	0.1	%	1	EI21909	19-Sep-12	19-Sep-12	ASTM D1945M	
BMS-SS-4-091212 (E209068-02) Vapor	**Sampled: 12-Sep-12**	**Received: 18-Sep-12**							
Helium (LCC)	**4.8**	0.1	%	1	EI21909	19-Sep-12	19-Sep-12	ASTM D1945M	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BMS-SS-1-091212 (E209068-01) Vapor	**Sampled: 12-Sep-12**	**Received: 18-Sep-12**							
Dichlorodifluoromethane (F12)	**2.7**	2.0	ug/m3	2	EI22105	19-Sep-12	20-Sep-12	EPA TO-15	
Chloromethane	**2.3**	0.41	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	1.4	"	"	"	"	"	"	
Vinyl chloride	ND	0.26	"	"	"	"	"	"	
Bromomethane	**0.84**	0.79	"	"	"	"	"	"	
Chloroethane	ND	0.54	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	**3.7**	1.1	"	"	"	"	"	"	
Acetone	**55**	2.4	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.80	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	1.5	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	**8.5**	0.71	"	"	"	"	"	"	
Carbon disulfide	**30**	0.63	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.82	"	"	"	"	"	"	
2-Butanone (MEK)	**5.6**	1.2	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
Chloroform	**1.9**	0.49	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.1	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.82	"	"	"	"	"	"	
Benzene	**4.3**	0.32	"	"	"	"	"	"	
Carbon tetrachloride	**0.95**	0.64	"	"	"	"	"	"	
Trichloroethene	ND	1.1	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.94	"	"	"	"	"	"	
Bromodichloromethane	ND	1.4	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.92	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	1.7	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.92	"	"	"	"	"	"	
Toluene	**29**	1.5	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.1	"	"	"	"	"	"	
2-Hexanone (MBK)	**2.5**	1.7	"	"	"	"	"	"	
Dibromochloromethane	ND	1.7	"	"	"	"	"	"	
Tetrachloroethene	**57**	1.4	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1.6	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.94	"	"	"	"	"	"	
Ethylbenzene	**6.1**	0.88	"	"	"	"	"	"	
m,p-Xylene	**21**	0.88	"	"	"	"	"	"	
Styrene	**1.4**	0.86	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BMS-SS-1-091212 (E209068-01) Vapor	**Sampled: 12-Sep-12**	**Received: 18-Sep-12**							
o-Xylene	**7.6**	0.88	ug/m3	2	EI22105	19-Sep-12	20-Sep-12	EPA TO-15	
Bromoform	ND	2.1	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.4	"	"	"	"	"	"	
4-Ethyltoluene	**1.7**	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	**2.0**	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**7.9**	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	4.3	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*107 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*102 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*		*77-127*	"	"	"	"	
BMS-SS-4-091212 (E209068-02) Vapor	**Sampled: 12-Sep-12**	**Received: 18-Sep-12**							
Dichlorodifluoromethane (F12)	**2.4**	2.0	ug/m3	2	EI22105	19-Sep-12	20-Sep-12	EPA TO-15	
Chloromethane	ND	0.41	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	1.4	"	"	"	"	"	"	
Vinyl chloride	ND	0.26	"	"	"	"	"	"	
Bromomethane	ND	0.79	"	"	"	"	"	"	
Chloroethane	ND	0.54	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	**1.5**	1.1	"	"	"	"	"	"	
Acetone	**23**	2.4	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.80	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	1.5	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	**1300**	18	"	50	"	"	"	"	
Carbon disulfide	ND	0.63	"	2	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.82	"	"	"	"	"	"	
2-Butanone (MEK)	**7.1**	1.2	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
Chloroform	**2.4**	0.49	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.1	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.82	"	"	"	"	"	"	
Benzene	**0.94**	0.32	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.64	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BMS-SS-4-091212 (E209068-02) Vapor	**Sampled: 12-Sep-12**	**Received: 18-Sep-12**							
Trichloroethene	ND	1.1	ug/m3	2	EI22105	19-Sep-12	20-Sep-12	EPA TO-15	
1,2-Dichloropropane	ND	0.94	"	"	"	"	"	"	
Bromodichloromethane	ND	1.4	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.92	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	**21**	1.7	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.92	"	"	"	"	"	"	
Toluene	**25**	1.5	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.1	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	1.7	"	"	"	"	"	"	
Dibromochloromethane	ND	1.7	"	"	"	"	"	"	
Tetrachloroethene	**14**	1.4	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1.6	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.94	"	"	"	"	"	"	
Ethylbenzene	**4.4**	0.88	"	"	"	"	"	"	
m,p-Xylene	**11**	0.88	"	"	"	"	"	"	
Styrene	**2.3**	0.86	"	"	"	"	"	"	
o-Xylene	**4.5**	0.88	"	"	"	"	"	"	
Bromoform	ND	2.1	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.4	"	"	"	"	"	"	
4-Ethyltoluene	**2.3**	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	**1.1**	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**3.9**	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	4.3	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*107 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*105 %*	*78-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*104 %*	*77-127*		"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

Soil Gas and Vapor Analysis - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI21909 - GC										
Blank (EI21909-BLK1)				Prepared & Analyzed: 19-Sep-12						
Helium (LCC)	ND	0.1	%							

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI22105 - TO-15										
Blank (EI22105-BLK1)				Prepared & Analyzed: 19-Sep-12						
Dichlorodifluoromethane (F12)	ND	1.0	ug/m3							
Chloromethane	ND	0.21	"							
Dichlorotetrafluoroethane (F114)	ND	0.71	"							
Vinyl chloride	ND	0.13	"							
Bromomethane	ND	0.39	"							
Chloroethane	ND	0.27	"							
Trichlorofluoromethane (F11)	ND	0.56	"							
Acetone	ND	1.2	"							
1,1-Dichloroethene	ND	0.40	"							
1,1,2-Trichlorotrifluoroethane (F113)	ND	0.77	"							
Methylene chloride (Dichloromethane)	ND	0.35	"							
Carbon disulfide	ND	0.32	"							
trans-1,2-Dichloroethene	ND	0.40	"							
1,1-Dichloroethane	ND	0.41	"							
2-Butanone (MEK)	ND	0.60	"							
cis-1,2-Dichloroethene	ND	0.40	"							
Chloroform	ND	0.25	"							
1,1,1-Trichloroethane	ND	0.55	"							
1,2-Dichloroethane (EDC)	ND	0.41	"							
Benzene	ND	0.16	"							
Carbon tetrachloride	ND	0.32	"							
Trichloroethene	ND	0.55	"							
1,2-Dichloropropane	ND	0.47	"							
Bromodichloromethane	ND	0.68	"							
cis-1,3-Dichloropropene	ND	0.46	"							
4-Methyl-2-pentanone (MIBK)	ND	0.83	"							
trans-1,3-Dichloropropene	ND	0.46	"							
Toluene	ND	0.76	"							
1,1,2-Trichloroethane	ND	0.55	"							
2-Hexanone (MBK)	ND	0.83	"							
Dibromochloromethane	ND	0.86	"							
Tetrachloroethene	ND	0.69	"							
1,2-Dibromoethane (EDB)	ND	0.78	"							
1,1,1,2-Tetrachloroethane	ND	0.70	"							

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI22105 - TO-15										
Blank (EI22105-BLK1)				Prepared & Analyzed: 19-Sep-12						
Chlorobenzene	ND	0.47	ug/m3							
Ethylbenzene	ND	0.44	"							
m,p-Xylene	ND	0.44	"							
Styrene	ND	0.43	"							
o-Xylene	ND	0.44	"							
Bromoform	ND	1.0	"							
1,1,2,2-Tetrachloroethane	ND	0.70	"							
4-Ethyltoluene	ND	0.50	"							
1,3,5-Trimethylbenzene	ND	0.50	"							
1,2,4-Trimethylbenzene	ND	0.50	"							
1,3-Dichlorobenzene	ND	0.61	"							
1,4-Dichlorobenzene	ND	0.61	"							
1,2-Dichlorobenzene	ND	0.61	"							
1,2,4-Trichlorobenzene	ND	0.75	"							
Hexachlorobutadiene	ND	2.1	"							
Surrogate: 1,2-Dichloroethane-d4	*230*		*"*	*214*		*107*	*76-134*			
Surrogate: Toluene-d8	*208*		*"*	*207*		*100*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*392*		*"*	*364*		*107*	*77-127*			
LCS (EI22105-BS1)				Prepared: 19-Sep-12 Analyzed: 20-Sep-12						
Dichlorodifluoromethane (F12)	13	1.0	ug/m3	10.1		128	65-135		35	
Vinyl chloride	5.3	0.13	"	5.20		101	65-135		35	
Chloroethane	5.0	0.27	"	5.36		92.5	65-135		35	
Trichlorofluoromethane (F11)	12	0.56	"	11.3		109	65-135		35	
1,1-Dichloroethene	7.6	0.40	"	8.08		94.5	65-135		35	
1,1,2-Trichlorotrifluoroethane (F113)	16	0.77	"	15.5		104	65-135		35	
Methylene chloride (Dichloromethane)	6.2	0.35	"	7.08		88.1	65-135		35	
trans-1,2-Dichloroethene	6.9	0.40	"	8.08		85.3	65-135		35	
1,1-Dichloroethane	7.8	0.41	"	8.24		94.7	65-135		35	
cis-1,2-Dichloroethene	6.2	0.40	"	8.00		77.0	65-135		35	
Chloroform	9.7	0.25	"	9.92		98.1	65-135		35	
1,1,1-Trichloroethane	11	0.55	"	11.1		95.8	65-135		35	
1,2-Dichloroethane (EDC)	7.7	0.41	"	8.24		93.8	65-135		35	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI22105 - TO-15										
LCS (EI22105-BS1)				Prepared: 19-Sep-12 Analyzed: 20-Sep-12						
Benzene	5.4	0.16	ug/m3	6.48		84.0	65-135		35	
Carbon tetrachloride	13	0.32	"	12.8		104	65-135		35	
Trichloroethene	9.9	0.55	"	11.0		89.9	65-135		35	
Toluene	6.5	0.76	"	7.68		85.3	65-135		35	
1,1,2-Trichloroethane	9.3	0.55	"	11.1		83.2	65-135		35	
Tetrachloroethene	12	0.69	"	13.8		83.4	65-135		35	
1,1,1,2-Tetrachloroethane	13	0.70	"	14.0		90.1	65-135		35	
Ethylbenzene	7.7	0.44	"	8.84		86.9	65-135		35	
m,p-Xylene	17	0.44	"	17.7		95.7	65-135		35	
o-Xylene	8.6	0.44	"	8.84		96.8	65-135		35	
1,1,2,2-Tetrachloroethane	13	0.70	"	14.0		92.2	65-135		35	
Surrogate: 1,2-Dichloroethane-d4	*231*		*"*	*214*		*108*	*76-134*			
Surrogate: Toluene-d8	*207*		*"*	*207*		*99.9*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*416*		*"*	*364*		*114*	*77-127*			
LCS Dup (EI22105-BSD1)				Prepared: 19-Sep-12 Analyzed: 20-Sep-12						
Dichlorodifluoromethane (F12)	13	1.0	ug/m3	10.1		127	65-135	1.52	35	
Vinyl chloride	5.6	0.13	"	5.20		107	65-135	5.41	35	
Chloroethane	5.6	0.27	"	5.36		105	65-135	12.6	35	
Trichlorofluoromethane (F11)	12	0.56	"	11.3		110	65-135	0.501	35	
1,1-Dichloroethene	7.8	0.40	"	8.08		96.3	65-135	1.93	35	
1,1,2-Trichlorotrifluoroethane (F113)	16	0.77	"	15.5		105	65-135	1.04	35	
Methylene chloride (Dichloromethane)	6.6	0.35	"	7.08		93.6	65-135	6.03	35	
trans-1,2-Dichloroethene	7.4	0.40	"	8.08		91.7	65-135	7.14	35	
1,1-Dichloroethane	8.2	0.41	"	8.24		99.6	65-135	4.98	35	
cis-1,2-Dichloroethene	6.8	0.40	"	8.00		84.5	65-135	9.34	35	
Chloroform	9.9	0.25	"	9.92		99.4	65-135	1.26	35	
1,1,1-Trichloroethane	11	0.55	"	11.1		99.2	65-135	3.41	35	
1,2-Dichloroethane (EDC)	7.8	0.41	"	8.24		95.2	65-135	1.48	35	
Benzene	5.7	0.16	"	6.48		87.4	65-135	3.96	35	
Carbon tetrachloride	13	0.32	"	12.8		103	65-135	0.769	35	
Trichloroethene	9.9	0.55	"	11.0		90.3	65-135	0.386	35	
Toluene	6.6	0.76	"	7.68		86.4	65-135	1.33	35	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI22105 - TO-15										
LCS Dup (EI22105-BSD1)				Prepared: 19-Sep-12 Analyzed: 20-Sep-12						
1,1,2-Trichloroethane	10	0.55	ug/m3	11.1		89.8	65-135	7.62	35	
Tetrachloroethene	12	0.69	"	13.8		85.6	65-135	2.59	35	
1,1,1,2-Tetrachloroethane	13	0.70	"	14.0		92.7	65-135	2.89	35	
Ethylbenzene	7.9	0.44	"	8.84		89.2	65-135	2.60	35	
m,p-Xylene	17	0.44	"	17.7		97.4	65-135	1.83	35	
o-Xylene	8.6	0.44	"	8.84		97.5	65-135	0.717	35	
1,1,2,2-Tetrachloroethane	13	0.70	"	14.0		91.2	65-135	1.03	35	
Surrogate: 1,2-Dichloroethane-d4	*227*		"	*214*		*106*	*76-134*			
Surrogate: Toluene-d8	*215*		"	*207*		*104*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*409*		"	*364*		*112*	*77-127*			

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS
Certificate# 2742, 2745, & 2741 approved for LUFT
Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods:

1,2,4-Trichlorobenzene by EPA TO-15 & TO-14A
Hexachlorobutadiene by EPA TO-15 & TO-14A
1,2,4-Trimethylbenzene by EPA TO -14A
1,2-Dichlorobenzene by EPA TO-15 & TO-14A
1,3,5-Trimethylbenzene by EPA TO -14A
1,4-Dichlorobenzene by EPA TO-15 & TO-14A
Benzene by EPA TO-15 & TO-14A
Chlorobenzene by EPA TO-15 & TO-14A
Ethyl benzene by EPA TO-15 & TO-14A
Styrene by EPA TO-15 & TO-14A
Toluene by EPA TO-15 & TO-14A
Total Xylenes by EPA TO-15 & TO-14A
1,1,1-Trichloroethane by EPA TO-15 & TO-14A
1,1,2,2-Tetrachloroethane by EPA TO-15 & TO-14A
1,1,2-Trichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethene by EPA TO-15 & TO-14A
1,2-Dichloroethane by EPA TO-15 & TO-14A
1,2-Dichloropropane by EPA TO-15 & TO-14A
Benzyl Chloride by EPA TO-15 & TO-14A
Bromoform by EPA TO-15
Bromomethane by EPA TO-15 & TO-14A
Carbon tetrachloride by EPA TO-15 & TO-14A
Chloroethane by EPA TO-15
Chloroform by EPA TO-15 & TO-14A
Chloromethane by EPA TO-15 & TO-14A
cis-1,2-Dichloroethene by EPA TO-15
cis-1,2-Dichloropropene by EPA TO-15 & TO-14A
Methylene chloride by EPA TO -15 & TO-14A
Tetrachloroethane by EPA TO-15 & TO-14A
trans-1,2-Dichloroethene by EPA TO-15
trans-1,2-Dichloropropene by EPA TO-15 & TO-14A
Trichloroethene by EPA TO-15 & TO-14A
Vinyl chloride by EPA TO -15 & TO-14A
2-Butanone by EPA TO-15
4-Methyl-2-Pentanone by EPA TO-15
Hexane by EPA TO-15
Methyl tert-butyl ether by EPA TO-15
Vinyl acetate by EPA TO-15
Dibromochloromethane by EPA TO-15
Dichlorodifluoromethane by EPA TO-15 & TO-14A
Trichlorofluoromethane by EPA TO-15 & TO-14A
Naphthalene by EPA TO-15 & TO-14A
m&p Xylenes by EPA TO-15
o-Xylene by EPA TO-15
1,3-Butadiene by EPA TO-15
1,1,2-Trichlorotrifluoroethane by EPA TO-15 & TO-14A
Carbon disulfide by EPA TO-15
1,4-Dioxane by EPA TO-15
Cyclohexane by EPA TO-15
tert-Butyl Alcohol by EPA TO-15
1,3-Dichlorobenzene by EPA TO-15 & TO-14A
Heptane by EPA TO-15
Bromodichloromethane by EPA TO-15 & TO-14A

Chain of Custody Record

Mobile Geochemistry Inc.

☒ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Date: 9/12/12

H&P Project # KJ091812-13

Outside Lab:

Client: Kennedy/Jenks Consultants

Address: 32001 32nd Ave S, Suite 100, Federal Way, WA 98001

Email: joshhopp@kennedyjenks.com

Collector: Josh Hopp

Client Project # 196016.00 | Task 9 | 00

Location: Yakima, WA

Phone: 253-835-6408

Fax:

Project Contact: Josh Hopp

Page: 1 of 1

Turn around time: Standard

Geotracker EDF: Yes ☐ No ☒

Global ID:

Excel EDD: Yes ☒ No ☐

Sample Receipt
Intact: ☑ Yes ☐ No
Seal Intact: ☑ Yes ☐ No ☐ N/A
Cold: ☐ Yes ☐ No ☑ N/A
Temperature: RT

Special Instructions:

Lab Work Order # E209068

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	Total # of containers	8260B Full List	8260B ☐ BTEX/OXY ☐ TPH gas	8015M TPH ☐ g ☐ d ☐ ext	418.1 TRPH	VOC's: Full List ☐ 8260B ☒ TO-15	VOC's: Short List/DTSC ☐ 8260B ☐ TO-15	VOC's: SAM, 8260B ☐ SAM A ☐ SAM B	Naphthalene ☐ 8260B ☐ TO-15	Oxygenates ☐ 8260B ☐ TO-15	TPHv gas ☐ 8260B ☐ TO-15	Ketones ☐ 8260B ☐ TO-15	Other ____ ☐ 8260B ☐ TO-15	Leak Check Compound ☐ 1,1 DFA ☐ OTHER	Methane	Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2	CAN# VAC#
								SOIL/GW				SOIL VAPOR/AIR ANALYSIS											
BMS-SS-1-091212		200ml	1605	9/12/12	soil vapor	6L summa	1					X								X			5709-4.8
BMS-SS-4-091212		200ml	1431	↓	↓	↓	1					X								X			291-4.1

Relinquished by: (Signature) Josh Hopp	(company) KJ	Received by: (Signature)	(company)	Date: 9/13/12	Time: 1500
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company) HHP	Date: 9/14/12	Time: 1150
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ Disposal ☐ Return to client ☐ Pickup

eurofins | Air Toxics

10/2/2012
Ms. Sherri Peterson
Kennedy/Jenks Consultants
1191 2nd Ave.
Suite 630
Seattle WA 98101

Project Name: WDOE Yakima
Project #: 1196016.00 Task 9 Phase 00
Workorder #: 1209312

Dear Ms. Sherri Peterson

The following report includes the data for the above referenced project for sample(s) received on 9/18/2012 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

eurofins | Air Toxics

WORK ORDER #: 1209312

Work Order Summary

CLIENT:	Ms. Sherri Peterson Kennedy/Jenks Consultants 1191 2nd Ave. Suite 630 Seattle, WA 98101	**BILL TO:**	Ms. Sherri Peterson Kennedy/Jenks Consultants 1191 2nd Ave. Suite 630 Seattle, WA 98101
PHONE:	206-652-4905	**P.O. #**	
FAX:		**PROJECT #**	1196016.00 Task 9 Phase 00 WDOE Yakima
DATE RECEIVED:	09/18/2012	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	10/02/2012		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	BMS-M1-091212	Modified TO-15	7.5 "Hg	5 psi
01B	BMS-M1-091212	Modified TO-15	7.5 "Hg	5 psi
02A	BMS-M3-091212	Modified TO-15	7.5 "Hg	5 psi
02B	BMS-M3-091212	Modified TO-15	7.5 "Hg	5 psi
03A	AMB-UPWIND-091212	Modified TO-15	8.0 "Hg	5 psi
03B	AMB-UPWIND-091212	Modified TO-15	8.0 "Hg	5 psi
04A	Lab Blank	Modified TO-15	NA	NA
04B	Lab Blank	Modified TO-15	NA	NA
05A	CCV	Modified TO-15	NA	NA
05B	CCV	Modified TO-15	NA	NA
06A	LCS	Modified TO-15	NA	NA
06AA	LCSD	Modified TO-15	NA	NA
06B	LCS	Modified TO-15	NA	NA
06BB	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 10/02/12

Technical Director

Certfication numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NY NELAP - 11291,
TX NELAP - T104704434-12-5, UT NELAP CA009332012-3, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2011, Expiration date: 10/17/2012.
Eurofins Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 Std Full Scan/SIM
Kennedy/Jenks Consultants
Workorder# 1209312

Three 6 Liter Summa Special (SIM Certified) samples were received on September 18, 2012. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liter of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to </= 40% RSD	For SIM only: Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to </= 40% RSD
Daily Calibration	+- 30% Difference	For Std. Full Scan: </= 30% Difference with two allowed out up to </=40%.; flag and narrate outliers For SIM: Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	For SIM only: Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

Ethanol was detected at concentrations less than 5 times the reporting limit in sample AMB-UPWIND-091212. Because the preceding sample contained concentrations of Ethanol exceeding the calibration range, the result for this compound in sample AMB-UPWIND-091212 may be biased high.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

eurofins | Air Toxics

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BMS-M1-091212

Lab ID#: 1209312-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.40	0.88	2.0
Chloromethane	0.18	0.40	0.37	0.83
Freon 11	0.18	0.19	1.0	1.1
Ethanol	0.90	82 E	1.7	160 E
Acetone	0.90	9.3	2.1	22
2-Propanol	0.90	7.4	2.2	18
Chloroform	0.18	0.24	0.87	1.2
Heptane	0.18	0.80	0.73	3.3

Client Sample ID: BMS-M1-091212

Lab ID#: 1209312-01B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.090	1.4	0.28	4.4
Trichloroethene	0.0054	0.011	0.029	0.058
Toluene	0.036	1.0	0.13	3.8
Ethyl Benzene	0.036	0.078	0.16	0.34
m,p-Xylene	0.072	0.27	0.31	1.2
o-Xylene	0.036	0.096	0.16	0.42

Client Sample ID: BMS-M3-091212

Lab ID#: 1209312-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.44	0.88	2.2
Chloromethane	0.18	0.52	0.37	1.1
Freon 11	0.18	0.23	1.0	1.3
Ethanol	0.90	92 E	1.7	170 E
Acetone	0.90	9.5	2.1	23
2-Propanol	0.90	14	2.2	35
Chloroform	0.18	0.22	0.87	1.1
Heptane	0.18	0.44	0.73	1.8

eurofins | Air Toxics

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BMS-M3-091212

Lab ID#: 1209312-02B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.090	0.32	0.28	1.0
Trichloroethene	0.0054	0.0060	0.029	0.032
Toluene	0.036	0.76	0.13	2.8
Ethyl Benzene	0.036	0.071	0.16	0.31
m,p-Xylene	0.072	0.23	0.31	1.0
o-Xylene	0.036	0.081	0.16	0.35

Client Sample ID: AMB-UPWIND-091212

Lab ID#: 1209312-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.45	0.90	2.2
Chloromethane	0.18	0.44	0.38	0.90
Freon 11	0.18	0.21	1.0	1.2
Ethanol	0.92	1.7	1.7	3.2
Acetone	0.92	3.1	2.2	7.4

Client Sample ID: AMB-UPWIND-091212

Lab ID#: 1209312-03B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.092	0.20	0.29	0.64
Toluene	0.037	0.42	0.14	1.6
Ethyl Benzene	0.037	0.043	0.16	0.19
m,p-Xylene	0.073	0.13	0.32	0.58
o-Xylene	0.037	0.051	0.16	0.22

eurofins | Air Toxics

Client Sample ID: BMS-M1-091212

Lab ID#: 1209312-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092113**	**Date of Collection:**	**9/12/12 5:55:00 PM**
Dil. Factor:	**1.79**	**Date of Analysis:**	**9/21/12 07:11 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.40	0.88	2.0
Freon 114	0.18	Not Detected	1.2	Not Detected
Chloromethane	0.18	0.40	0.37	0.83
1,3-Butadiene	0.18	Not Detected	0.40	Not Detected
Bromomethane	0.18	Not Detected	0.70	Not Detected
Chloroethane	0.90	Not Detected	2.4	Not Detected
Freon 11	0.18	0.19	1.0	1.1
Ethanol	0.90	82 E	1.7	160 E
Freon 113	0.18	Not Detected	1.4	Not Detected
Acetone	0.90	9.3	2.1	22
2-Propanol	0.90	7.4	2.2	18
Carbon Disulfide	0.90	Not Detected	2.8	Not Detected
3-Chloropropene	0.90	Not Detected	2.8	Not Detected
Methylene Chloride	0.36	Not Detected	1.2	Not Detected
Hexane	0.18	Not Detected	0.63	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.90	Not Detected	2.6	Not Detected
Tetrahydrofuran	0.90	Not Detected	2.6	Not Detected
Chloroform	0.18	0.24	0.87	1.2
Cyclohexane	0.18	Not Detected	0.62	Not Detected
Carbon Tetrachloride	0.18	Not Detected	1.1	Not Detected
2,2,4-Trimethylpentane	0.90	Not Detected	4.2	Not Detected
Heptane	0.18	0.80	0.73	3.3
1,2-Dichloropropane	0.18	Not Detected	0.83	Not Detected
1,4-Dioxane	0.18	Not Detected	0.64	Not Detected
Bromodichloromethane	0.18	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.18	Not Detected	0.81	Not Detected
4-Methyl-2-pentanone	0.18	Not Detected	0.73	Not Detected
trans-1,3-Dichloropropene	0.18	Not Detected	0.81	Not Detected
2-Hexanone	0.90	Not Detected	3.7	Not Detected
Dibromochloromethane	0.18	Not Detected	1.5	Not Detected
1,2-Dibromoethane (EDB)	0.18	Not Detected	1.4	Not Detected
Chlorobenzene	0.18	Not Detected	0.82	Not Detected
Styrene	0.18	Not Detected	0.76	Not Detected
Bromoform	0.18	Not Detected	1.8	Not Detected
Cumene	0.18	Not Detected	0.88	Not Detected
Propylbenzene	0.18	Not Detected	0.88	Not Detected
4-Ethyltoluene	0.18	Not Detected	0.88	Not Detected
1,3,5-Trimethylbenzene	0.18	Not Detected	0.88	Not Detected
1,2,4-Trimethylbenzene	0.18	Not Detected	0.88	Not Detected
1,3-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,4-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
alpha-Chlorotoluene	0.18	Not Detected	0.93	Not Detected

eurofins | Air Toxics

Client Sample ID: BMS-M1-091212

Lab ID#: 1209312-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092113**	**Date of Collection: 9/12/12 5:55:00 PM**	
Dil. Factor:	**1.79**	**Date of Analysis: 9/21/12 07:11 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,2,4-Trichlorobenzene	0.90	Not Detected	6.6	Not Detected
Hexachlorobutadiene	0.90	Not Detected	9.5	Not Detected
1,1,1,2-Tetrachloroethane	0.90	Not Detected	6.1	Not Detected

E = Exceeds instrument calibration range.

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	102	70-130

eurofins | Air Toxics

Client Sample ID: BMS-M1-091212

Lab ID#: 1209312-01B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092113sim**	**Date of Collection:**	**9/12/12 5:55:00 PM**
Dil. Factor:	**1.79**	**Date of Analysis:**	**9/21/12 07:11 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.018	Not Detected	0.046	Not Detected
1,1-Dichloroethene	0.018	Not Detected	0.071	Not Detected
1,1-Dichloroethane	0.036	Not Detected	0.14	Not Detected
cis-1,2-Dichloroethene	0.036	Not Detected	0.14	Not Detected
1,1,1-Trichloroethane	0.036	Not Detected	0.20	Not Detected
Benzene	0.090	1.4	0.28	4.4
1,2-Dichloroethane	0.036	Not Detected	0.14	Not Detected
Trichloroethene	0.0054	0.011	0.029	0.058
Toluene	0.036	1.0	0.13	3.8
1,1,2-Trichloroethane	0.036	Not Detected	0.20	Not Detected
Tetrachloroethene	0.036	Not Detected	0.24	Not Detected
Ethyl Benzene	0.036	0.078	0.16	0.34
m,p-Xylene	0.072	0.27	0.31	1.2
o-Xylene	0.036	0.096	0.16	0.42
1,1,2,2-Tetrachloroethane	0.036	Not Detected	0.24	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.71	Not Detected
Methyl tert-butyl ether	0.18	Not Detected	0.64	Not Detected

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	104	70-130

eurofins | Air Toxics

Client Sample ID: BMS-M3-091212

Lab ID#: 1209312-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092115**	**Date of Collection:**	**9/12/12 5:57:00 PM**
Dil. Factor:	**1.79**	**Date of Analysis:**	**9/21/12 09:19 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.44	0.88	2.2
Freon 114	0.18	Not Detected	1.2	Not Detected
Chloromethane	0.18	0.52	0.37	1.1
1,3-Butadiene	0.18	Not Detected	0.40	Not Detected
Bromomethane	0.18	Not Detected	0.70	Not Detected
Chloroethane	0.90	Not Detected	2.4	Not Detected
Freon 11	0.18	0.23	1.0	1.3
Ethanol	0.90	92 E	1.7	170 E
Freon 113	0.18	Not Detected	1.4	Not Detected
Acetone	0.90	9.5	2.1	23
2-Propanol	0.90	14	2.2	35
Carbon Disulfide	0.90	Not Detected	2.8	Not Detected
3-Chloropropene	0.90	Not Detected	2.8	Not Detected
Methylene Chloride	0.36	Not Detected	1.2	Not Detected
Hexane	0.18	Not Detected	0.63	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.90	Not Detected	2.6	Not Detected
Tetrahydrofuran	0.90	Not Detected	2.6	Not Detected
Chloroform	0.18	0.22	0.87	1.1
Cyclohexane	0.18	Not Detected	0.62	Not Detected
Carbon Tetrachloride	0.18	Not Detected	1.1	Not Detected
2,2,4-Trimethylpentane	0.90	Not Detected	4.2	Not Detected
Heptane	0.18	0.44	0.73	1.8
1,2-Dichloropropane	0.18	Not Detected	0.83	Not Detected
1,4-Dioxane	0.18	Not Detected	0.64	Not Detected
Bromodichloromethane	0.18	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.18	Not Detected	0.81	Not Detected
4-Methyl-2-pentanone	0.18	Not Detected	0.73	Not Detected
trans-1,3-Dichloropropene	0.18	Not Detected	0.81	Not Detected
2-Hexanone	0.90	Not Detected	3.7	Not Detected
Dibromochloromethane	0.18	Not Detected	1.5	Not Detected
1,2-Dibromoethane (EDB)	0.18	Not Detected	1.4	Not Detected
Chlorobenzene	0.18	Not Detected	0.82	Not Detected
Styrene	0.18	Not Detected	0.76	Not Detected
Bromoform	0.18	Not Detected	1.8	Not Detected
Cumene	0.18	Not Detected	0.88	Not Detected
Propylbenzene	0.18	Not Detected	0.88	Not Detected
4-Ethyltoluene	0.18	Not Detected	0.88	Not Detected
1,3,5-Trimethylbenzene	0.18	Not Detected	0.88	Not Detected
1,2,4-Trimethylbenzene	0.18	Not Detected	0.88	Not Detected
1,3-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,4-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
alpha-Chlorotoluene	0.18	Not Detected	0.93	Not Detected

eurofins | Air Toxics

Client Sample ID: BMS-M3-091212

Lab ID#: 1209312-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092115**	**Date of Collection: 9/12/12 5:57:00 PM**	
Dil. Factor:	**1.79**	**Date of Analysis: 9/21/12 09:19 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,2,4-Trichlorobenzene	0.90	Not Detected	6.6	Not Detected
Hexachlorobutadiene	0.90	Not Detected	9.5	Not Detected
1,1,1,2-Tetrachloroethane	0.90	Not Detected	6.1	Not Detected

E = Exceeds instrument calibration range.

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	103	70-130

eurofins | Air Toxics

Client Sample ID: BMS-M3-091212

Lab ID#: 1209312-02B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092115sim**	**Date of Collection: 9/12/12 5:57:00 PM**	
Dil. Factor:	**1.79**	**Date of Analysis: 9/21/12 09:19 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.018	Not Detected	0.046	Not Detected
1,1-Dichloroethene	0.018	Not Detected	0.071	Not Detected
1,1-Dichloroethane	0.036	Not Detected	0.14	Not Detected
cis-1,2-Dichloroethene	0.036	Not Detected	0.14	Not Detected
1,1,1-Trichloroethane	0.036	Not Detected	0.20	Not Detected
Benzene	0.090	0.32	0.28	1.0
1,2-Dichloroethane	0.036	Not Detected	0.14	Not Detected
Trichloroethene	0.0054	0.0060	0.029	0.032
Toluene	0.036	0.76	0.13	2.8
1,1,2-Trichloroethane	0.036	Not Detected	0.20	Not Detected
Tetrachloroethene	0.036	Not Detected	0.24	Not Detected
Ethyl Benzene	0.036	0.071	0.16	0.31
m,p-Xylene	0.072	0.23	0.31	1.0
o-Xylene	0.036	0.081	0.16	0.35
1,1,2,2-Tetrachloroethane	0.036	Not Detected	0.24	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.71	Not Detected
Methyl tert-butyl ether	0.18	Not Detected	0.64	Not Detected

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	104	70-130

eurofins | Air Toxics

Client Sample ID: AMB-UPWIND-091212

Lab ID#: 1209312-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092116**	**Date of Collection:**	**9/12/12 5:55:00 PM**
Dil. Factor:	**1.83**	**Date of Analysis:**	**9/21/12 10:17 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.45	0.90	2.2
Freon 114	0.18	Not Detected	1.3	Not Detected
Chloromethane	0.18	0.44	0.38	0.90
1,3-Butadiene	0.18	Not Detected	0.40	Not Detected
Bromomethane	0.18	Not Detected	0.71	Not Detected
Chloroethane	0.92	Not Detected	2.4	Not Detected
Freon 11	0.18	0.21	1.0	1.2
Ethanol	0.92	1.7	1.7	3.2
Freon 113	0.18	Not Detected	1.4	Not Detected
Acetone	0.92	3.1	2.2	7.4
2-Propanol	0.92	Not Detected	2.2	Not Detected
Carbon Disulfide	0.92	Not Detected	2.8	Not Detected
3-Chloropropene	0.92	Not Detected	2.9	Not Detected
Methylene Chloride	0.37	Not Detected	1.3	Not Detected
Hexane	0.18	Not Detected	0.64	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.92	Not Detected	2.7	Not Detected
Tetrahydrofuran	0.92	Not Detected	2.7	Not Detected
Chloroform	0.18	Not Detected	0.89	Not Detected
Cyclohexane	0.18	Not Detected	0.63	Not Detected
Carbon Tetrachloride	0.18	Not Detected	1.2	Not Detected
2,2,4-Trimethylpentane	0.92	Not Detected	4.3	Not Detected
Heptane	0.18	Not Detected	0.75	Not Detected
1,2-Dichloropropane	0.18	Not Detected	0.84	Not Detected
1,4-Dioxane	0.18	Not Detected	0.66	Not Detected
Bromodichloromethane	0.18	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.18	Not Detected	0.83	Not Detected
4-Methyl-2-pentanone	0.18	Not Detected	0.75	Not Detected
trans-1,3-Dichloropropene	0.18	Not Detected	0.83	Not Detected
2-Hexanone	0.92	Not Detected	3.7	Not Detected
Dibromochloromethane	0.18	Not Detected	1.6	Not Detected
1,2-Dibromoethane (EDB)	0.18	Not Detected	1.4	Not Detected
Chlorobenzene	0.18	Not Detected	0.84	Not Detected
Styrene	0.18	Not Detected	0.78	Not Detected
Bromoform	0.18	Not Detected	1.9	Not Detected
Cumene	0.18	Not Detected	0.90	Not Detected
Propylbenzene	0.18	Not Detected	0.90	Not Detected
4-Ethyltoluene	0.18	Not Detected	0.90	Not Detected
1,3,5-Trimethylbenzene	0.18	Not Detected	0.90	Not Detected
1,2,4-Trimethylbenzene	0.18	Not Detected	0.90	Not Detected
1,3-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,4-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
alpha-Chlorotoluene	0.18	Not Detected	0.95	Not Detected

eurofins | Air Toxics

Client Sample ID: AMB-UPWIND-091212

Lab ID#: 1209312-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092116**	**Date of Collection: 9/12/12 5:55:00 PM**	
Dil. Factor:	**1.83**	**Date of Analysis: 9/21/12 10:17 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,2,4-Trichlorobenzene	0.92	Not Detected	6.8	Not Detected
Hexachlorobutadiene	0.92	Not Detected	9.8	Not Detected
1,1,1,2-Tetrachloroethane	0.92	Not Detected	6.3	Not Detected

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	94	70-130
4-Bromofluorobenzene	104	70-130

eurofins | Air Toxics

Client Sample ID: AMB-UPWIND-091212

Lab ID#: 1209312-03B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092116sim**	**Date of Collection: 9/12/12 5:55:00 PM**	
Dil. Factor:	**1.83**	**Date of Analysis: 9/21/12 10:17 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.018	Not Detected	0.047	Not Detected
1,1-Dichloroethene	0.018	Not Detected	0.072	Not Detected
1,1-Dichloroethane	0.037	Not Detected	0.15	Not Detected
cis-1,2-Dichloroethene	0.037	Not Detected	0.14	Not Detected
1,1,1-Trichloroethane	0.037	Not Detected	0.20	Not Detected
Benzene	0.092	0.20	0.29	0.64
1,2-Dichloroethane	0.037	Not Detected	0.15	Not Detected
Trichloroethene	0.0055	Not Detected	0.030	Not Detected
Toluene	0.037	0.42	0.14	1.6
1,1,2-Trichloroethane	0.037	Not Detected	0.20	Not Detected
Tetrachloroethene	0.037	Not Detected	0.25	Not Detected
Ethyl Benzene	0.037	0.043	0.16	0.19
m,p-Xylene	0.073	0.13	0.32	0.58
o-Xylene	0.037	0.051	0.16	0.22
1,1,2,2-Tetrachloroethane	0.037	Not Detected	0.25	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.72	Not Detected
Methyl tert-butyl ether	0.18	Not Detected	0.66	Not Detected

Container Type: 6 Liter Summa Special (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	103	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1209312-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092111a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 05:20 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.10	Not Detected	0.49	Not Detected
Freon 114	0.10	Not Detected	0.70	Not Detected
Chloromethane	0.10	Not Detected	0.21	Not Detected
1,3-Butadiene	0.10	Not Detected	0.22	Not Detected
Bromomethane	0.10	Not Detected	0.39	Not Detected
Chloroethane	0.50	Not Detected	1.3	Not Detected
Freon 11	0.10	Not Detected	0.56	Not Detected
Ethanol	0.50	Not Detected	0.94	Not Detected
Freon 113	0.10	Not Detected	0.77	Not Detected
Acetone	0.50	Not Detected	1.2	Not Detected
2-Propanol	0.50	Not Detected	1.2	Not Detected
Carbon Disulfide	0.50	Not Detected	1.6	Not Detected
3-Chloropropene	0.50	Not Detected	1.6	Not Detected
Methylene Chloride	0.20	Not Detected	0.69	Not Detected
Hexane	0.10	Not Detected	0.35	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	Not Detected	1.5	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.10	Not Detected	0.49	Not Detected
Cyclohexane	0.10	Not Detected	0.34	Not Detected
Carbon Tetrachloride	0.10	Not Detected	0.63	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Heptane	0.10	Not Detected	0.41	Not Detected
1,2-Dichloropropane	0.10	Not Detected	0.46	Not Detected
1,4-Dioxane	0.10	Not Detected	0.36	Not Detected
Bromodichloromethane	0.10	Not Detected	0.67	Not Detected
cis-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
4-Methyl-2-pentanone	0.10	Not Detected	0.41	Not Detected
trans-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
2-Hexanone	0.50	Not Detected	2.0	Not Detected
Dibromochloromethane	0.10	Not Detected	0.85	Not Detected
1,2-Dibromoethane (EDB)	0.10	Not Detected	0.77	Not Detected
Chlorobenzene	0.10	Not Detected	0.46	Not Detected
Styrene	0.10	Not Detected	0.42	Not Detected
Bromoform	0.10	Not Detected	1.0	Not Detected
Cumene	0.10	Not Detected	0.49	Not Detected
Propylbenzene	0.10	Not Detected	0.49	Not Detected
4-Ethyltoluene	0.10	Not Detected	0.49	Not Detected
1,3,5-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,2,4-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,3-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,4-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
alpha-Chlorotoluene	0.10	Not Detected	0.52	Not Detected

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1209312-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092111a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 05:20 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,2,4-Trichlorobenzene	0.50	Not Detected	3.7	Not Detected
Hexachlorobutadiene	0.50	Not Detected	5.3	Not Detected
1,1,1,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	98	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1209312-04B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092111asim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 05:20 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
1,1-Dichloroethene	0.010	Not Detected	0.040	Not Detected
1,1-Dichloroethane	0.020	Not Detected	0.081	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
1,1,1-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Benzene	0.050	Not Detected	0.16	Not Detected
1,2-Dichloroethane	0.020	Not Detected	0.081	Not Detected
Trichloroethene	0.0030	Not Detected	0.016	Not Detected
Toluene	0.020	Not Detected	0.075	Not Detected
1,1,2-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected
Ethyl Benzene	0.020	Not Detected	0.087	Not Detected
m,p-Xylene	0.040	Not Detected	0.17	Not Detected
o-Xylene	0.020	Not Detected	0.087	Not Detected
1,1,2,2-Tetrachloroethane	0.020	Not Detected	0.14	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	100	70-130

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1209312-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092102**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 09:03 AM**	

Compound	%Recovery
Freon 12	90
Freon 114	93
Chloromethane	75
1,3-Butadiene	89
Bromomethane	119
Chloroethane	91
Freon 11	88
Ethanol	90
Freon 113	88
Acetone	88
2-Propanol	91
Carbon Disulfide	86
3-Chloropropene	94
Methylene Chloride	84
Hexane	104
2-Butanone (Methyl Ethyl Ketone)	90
Tetrahydrofuran	90
Chloroform	82
Cyclohexane	91
Carbon Tetrachloride	83
2,2,4-Trimethylpentane	98
Heptane	97
1,2-Dichloropropane	82
1,4-Dioxane	89
Bromodichloromethane	84
cis-1,3-Dichloropropene	88
4-Methyl-2-pentanone	101
trans-1,3-Dichloropropene	92
2-Hexanone	98
Dibromochloromethane	86
1,2-Dibromoethane (EDB)	81
Chlorobenzene	88
Styrene	103
Bromoform	86
Cumene	108
Propylbenzene	108
4-Ethyltoluene	110
1,3,5-Trimethylbenzene	110
1,2,4-Trimethylbenzene	121
1,3-Dichlorobenzene	100
1,4-Dichlorobenzene	98
alpha-Chlorotoluene	100

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1209312-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092102**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 09:03 AM**	

Compound	**%Recovery**
1,2-Dichlorobenzene	97
1,2,4-Trichlorobenzene	104
Hexachlorobutadiene	88
1,1,1,2-Tetrachloroethane	101

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	103	70-130

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1209312-05B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092102sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 09:03 AM**	

Compound	%Recovery
Vinyl Chloride	91
1,1-Dichloroethene	90
1,1-Dichloroethane	92
cis-1,2-Dichloroethene	98
1,1,1-Trichloroethane	89
Benzene	80
1,2-Dichloroethane	82
Trichloroethene	79
Toluene	90
1,1,2-Trichloroethane	84
Tetrachloroethene	82
Ethyl Benzene	103
m,p-Xylene	114
o-Xylene	117
1,1,2,2-Tetrachloroethane	81
trans-1,2-Dichloroethene	94
Methyl tert-butyl ether	113

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	109	70-130
4-Bromofluorobenzene	110	70-130

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1209312-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092103**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 09:48 AM**	

Compound	%Recovery
Freon 12	94
Freon 114	93
Chloromethane	79
1,3-Butadiene	93
Bromomethane	126
Chloroethane	102
Freon 11	94
Ethanol	90
Freon 113	94
Acetone	99
2-Propanol	102
Carbon Disulfide	113
3-Chloropropene	116
Methylene Chloride	88
Hexane	115
2-Butanone (Methyl Ethyl Ketone)	94
Tetrahydrofuran	96
Chloroform	91
Cyclohexane	100
Carbon Tetrachloride	92
2,2,4-Trimethylpentane	103
Heptane	94
1,2-Dichloropropane	84
1,4-Dioxane	90
Bromodichloromethane	87
cis-1,3-Dichloropropene	89
4-Methyl-2-pentanone	102
trans-1,3-Dichloropropene	97
2-Hexanone	111
Dibromochloromethane	90
1,2-Dibromoethane (EDB)	86
Chlorobenzene	93
Styrene	108
Bromoform	89
Cumene	114
Propylbenzene	115
4-Ethyltoluene	112
1,3,5-Trimethylbenzene	117
1,2,4-Trimethylbenzene	123
1,3-Dichlorobenzene	106
1,4-Dichlorobenzene	104
alpha-Chlorotoluene	104

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1209312-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092103**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 09:48 AM**	

Compound	**%Recovery**
1,2-Dichlorobenzene	102
1,2,4-Trichlorobenzene	104
Hexachlorobutadiene	86
1,1,1,2-Tetrachloroethane	Not Spiked

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	103	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1209312-06AA

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 10:39 AM**	

Compound	%Recovery
Freon 12	93
Freon 114	94
Chloromethane	79
1,3-Butadiene	93
Bromomethane	127
Chloroethane	96
Freon 11	91
Ethanol	87
Freon 113	94
Acetone	100
2-Propanol	101
Carbon Disulfide	114
3-Chloropropene	114
Methylene Chloride	89
Hexane	112
2-Butanone (Methyl Ethyl Ketone)	95
Tetrahydrofuran	98
Chloroform	90
Cyclohexane	102
Carbon Tetrachloride	90
2,2,4-Trimethylpentane	101
Heptane	95
1,2-Dichloropropane	82
1,4-Dioxane	91
Bromodichloromethane	86
cis-1,3-Dichloropropene	90
4-Methyl-2-pentanone	94
trans-1,3-Dichloropropene	96
2-Hexanone	107
Dibromochloromethane	89
1,2-Dibromoethane (EDB)	84
Chlorobenzene	94
Styrene	107
Bromoform	88
Cumene	113
Propylbenzene	114
4-Ethyltoluene	110
1,3,5-Trimethylbenzene	113
1,2,4-Trimethylbenzene	123
1,3-Dichlorobenzene	105
1,4-Dichlorobenzene	101
alpha-Chlorotoluene	102

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1209312-06AA

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 10:39 AM**	

Compound	%Recovery
1,2-Dichlorobenzene	104
1,2,4-Trichlorobenzene	110
Hexachlorobutadiene	92
1,1,1,2-Tetrachloroethane	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	109	70-130

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1209312-06B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092103sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 09:48 AM**	

Compound	**%Recovery**
Vinyl Chloride	93
1,1-Dichloroethene	100
1,1-Dichloroethane	96
cis-1,2-Dichloroethene	103
1,1,1-Trichloroethane	96
Benzene	82
1,2-Dichloroethane	86
Trichloroethene	83
Toluene	93
1,1,2-Trichloroethane	87
Tetrachloroethene	84
Ethyl Benzene	106
m,p-Xylene	120
o-Xylene	121
1,1,2,2-Tetrachloroethane	86
trans-1,2-Dichloroethene	110
Methyl tert-butyl ether	117

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	110	70-130
4-Bromofluorobenzene	108	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1209312-06BB

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e092104sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/21/12 10:39 AM**	

Compound	%Recovery
Vinyl Chloride	93
1,1-Dichloroethene	100
1,1-Dichloroethane	95
cis-1,2-Dichloroethene	103
1,1,1-Trichloroethane	95
Benzene	80
1,2-Dichloroethane	83
Trichloroethene	82
Toluene	91
1,1,2-Trichloroethane	87
Tetrachloroethene	84
Ethyl Benzene	105
m,p-Xylene	119
o-Xylene	120
1,1,2,2-Tetrachloroethane	86
trans-1,2-Dichloroethene	110
Methyl tert-butyl ether	118

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	108	70-130
4-Bromofluorobenzene	110	70-130

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager: Sherri Peterson

Collected by: (Print and Sign) Josh Hopp JHopp

Company: Kennedy/Jenks Consultants Email: sherripeterson@kennedyjenks.com

Address: 1191 2nd Ave, Suite 630 City: Seattle State: WA Zip: 98103

Phone: 206-753-3409 Fax: 206-652-4927

Project Info:
P.O. #:
Project #: 1176016.00 Task 9 Phase 00
Project Name: WDOE Yakima

Turn Around Time:
☒ Normal
☐ Rush
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
01AB	BMS-M1-091212	5681	09/12/12	0620-1755	Full List VOC's by TO-15	-29	-9.5		
02AB	BMS-M3-091212	34487	↓	0620-1757	↓	-28.5	-7		
03AB	AMB-UPWIND-091212	33925	↓	0620-1755	↓	-29	-8.5		

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
JHopp 9/13/12 1500	ATL 9/15/12 0745
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time

Notes:
Please cc: Josh Hopp for results
Josh.Hopp@KennedyJenks.com

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	UPS		N/A	Good	Yes No (None)	1209312

Form 1293 rev.11

Mobile Geochemistry Inc.

28 September 2012

Mr. Josh Hopp
Kennedy/Jenks Consultants - Washington
32001 32nd Ave. South, Suite 100
Federal Way, WA 98001

H&P Project: KJ091812-13
Client Project: 1196016.00/Task9/00 / Yakima, WA

Dear Mr. Josh Hopp:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 18-Sep-12 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BMS-SS-1-091212	E209068-01	Vapor	12-Sep-12	18-Sep-12
BMS-SS-4-091212	E209068-02	Vapor	12-Sep-12	18-Sep-12

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

Soil Gas and Vapor Analysis

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BMS-SS-1-091212 (E209068-01) Vapor	**Sampled: 12-Sep-12**	**Received: 18-Sep-12**							
Helium (LCC)	**0.2**	0.1	%	1	EI21909	19-Sep-12	19-Sep-12	ASTM D1945M	
BMS-SS-4-091212 (E209068-02) Vapor	**Sampled: 12-Sep-12**	**Received: 18-Sep-12**							
Helium (LCC)	**4.8**	0.1	%	1	EI21909	19-Sep-12	19-Sep-12	ASTM D1945M	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BMS-SS-1-091212 (E209068-01) Vapor	**Sampled: 12-Sep-12**	**Received: 18-Sep-12**							
Dichlorodifluoromethane (F12)	**2.7**	2.0	ug/m3	2	EI22105	19-Sep-12	20-Sep-12	EPA TO-15	
Chloromethane	**2.3**	0.41	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	1.4	"	"	"	"	"	"	
Vinyl chloride	ND	0.26	"	"	"	"	"	"	
Bromomethane	**0.84**	0.79	"	"	"	"	"	"	
Chloroethane	ND	0.54	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	**3.7**	1.1	"	"	"	"	"	"	
Acetone	**55**	2.4	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.80	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	1.5	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	**8.5**	0.71	"	"	"	"	"	"	
Carbon disulfide	**30**	0.63	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.82	"	"	"	"	"	"	
2-Butanone (MEK)	**5.6**	1.2	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
Chloroform	**1.9**	0.49	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.1	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.82	"	"	"	"	"	"	
Benzene	**4.3**	0.32	"	"	"	"	"	"	
Carbon tetrachloride	**0.95**	0.64	"	"	"	"	"	"	
Trichloroethene	ND	1.1	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.94	"	"	"	"	"	"	
Bromodichloromethane	ND	1.4	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.92	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	1.7	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.92	"	"	"	"	"	"	
Toluene	**29**	1.5	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.1	"	"	"	"	"	"	
2-Hexanone (MBK)	**2.5**	1.7	"	"	"	"	"	"	
Dibromochloromethane	ND	1.7	"	"	"	"	"	"	
Tetrachloroethene	**57**	1.4	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1.6	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.94	"	"	"	"	"	"	
Ethylbenzene	**6.1**	0.88	"	"	"	"	"	"	
m,p-Xylene	**21**	0.88	"	"	"	"	"	"	
Styrene	**1.4**	0.86	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BMS-SS-1-091212 (E209068-01) Vapor	**Sampled: 12-Sep-12**	**Received: 18-Sep-12**							
o-Xylene	**7.6**	0.88	ug/m3	2	EI22105	19-Sep-12	20-Sep-12	EPA TO-15	
Bromoform	ND	2.1	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.4	"	"	"	"	"	"	
4-Ethyltoluene	**1.7**	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	**2.0**	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**7.9**	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	4.3	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*107 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*102 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*		*77-127*	"	"	"	"	
BMS-SS-4-091212 (E209068-02) Vapor	**Sampled: 12-Sep-12**	**Received: 18-Sep-12**							
Dichlorodifluoromethane (F12)	**2.4**	2.0	ug/m3	2	EI22105	19-Sep-12	20-Sep-12	EPA TO-15	
Chloromethane	ND	0.41	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	1.4	"	"	"	"	"	"	
Vinyl chloride	ND	0.26	"	"	"	"	"	"	
Bromomethane	ND	0.79	"	"	"	"	"	"	
Chloroethane	ND	0.54	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	**1.5**	1.1	"	"	"	"	"	"	
Acetone	**23**	2.4	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.80	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	1.5	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	**1300**	18	"	50	"	"	"	"	
Carbon disulfide	ND	0.63	"	2	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.82	"	"	"	"	"	"	
2-Butanone (MEK)	**7.1**	1.2	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
Chloroform	**2.4**	0.49	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.1	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.82	"	"	"	"	"	"	
Benzene	**0.94**	0.32	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.64	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BMS-SS-4-091212 (E209068-02) Vapor	**Sampled: 12-Sep-12**	**Received: 18-Sep-12**							
Trichloroethene	ND	1.1	ug/m3	2	EI22105	19-Sep-12	20-Sep-12	EPA TO-15	
1,2-Dichloropropane	ND	0.94	"	"	"	"	"	"	
Bromodichloromethane	ND	1.4	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.92	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	**21**	1.7	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.92	"	"	"	"	"	"	
Toluene	**25**	1.5	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.1	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	1.7	"	"	"	"	"	"	
Dibromochloromethane	ND	1.7	"	"	"	"	"	"	
Tetrachloroethene	**14**	1.4	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1.6	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.94	"	"	"	"	"	"	
Ethylbenzene	**4.4**	0.88	"	"	"	"	"	"	
m,p-Xylene	**11**	0.88	"	"	"	"	"	"	
Styrene	**2.3**	0.86	"	"	"	"	"	"	
o-Xylene	**4.5**	0.88	"	"	"	"	"	"	
Bromoform	ND	2.1	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.4	"	"	"	"	"	"	
4-Ethyltoluene	**2.3**	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	**1.1**	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**3.9**	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.2	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	4.3	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*107 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*105 %*	*78-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*104 %*	*77-127*		"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

Soil Gas and Vapor Analysis - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI21909 - GC										
Blank (EI21909-BLK1)				Prepared & Analyzed: 19-Sep-12						
Helium (LCC)	ND	0.1	%							

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI22105 - TO-15										
Blank (EI22105-BLK1)				Prepared & Analyzed: 19-Sep-12						
Dichlorodifluoromethane (F12)	ND	1.0	ug/m3							
Chloromethane	ND	0.21	"							
Dichlorotetrafluoroethane (F114)	ND	0.71	"							
Vinyl chloride	ND	0.13	"							
Bromomethane	ND	0.39	"							
Chloroethane	ND	0.27	"							
Trichlorofluoromethane (F11)	ND	0.56	"							
Acetone	ND	1.2	"							
1,1-Dichloroethene	ND	0.40	"							
1,1,2-Trichlorotrifluoroethane (F113)	ND	0.77	"							
Methylene chloride (Dichloromethane)	ND	0.35	"							
Carbon disulfide	ND	0.32	"							
trans-1,2-Dichloroethene	ND	0.40	"							
1,1-Dichloroethane	ND	0.41	"							
2-Butanone (MEK)	ND	0.60	"							
cis-1,2-Dichloroethene	ND	0.40	"							
Chloroform	ND	0.25	"							
1,1,1-Trichloroethane	ND	0.55	"							
1,2-Dichloroethane (EDC)	ND	0.41	"							
Benzene	ND	0.16	"							
Carbon tetrachloride	ND	0.32	"							
Trichloroethene	ND	0.55	"							
1,2-Dichloropropane	ND	0.47	"							
Bromodichloromethane	ND	0.68	"							
cis-1,3-Dichloropropene	ND	0.46	"							
4-Methyl-2-pentanone (MIBK)	ND	0.83	"							
trans-1,3-Dichloropropene	ND	0.46	"							
Toluene	ND	0.76	"							
1,1,2-Trichloroethane	ND	0.55	"							
2-Hexanone (MBK)	ND	0.83	"							
Dibromochloromethane	ND	0.86	"							
Tetrachloroethene	ND	0.69	"							
1,2-Dibromoethane (EDB)	ND	0.78	"							
1,1,1,2-Tetrachloroethane	ND	0.70	"							

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI22105 - TO-15										
Blank (EI22105-BLK1)				Prepared & Analyzed: 19-Sep-12						
Chlorobenzene	ND	0.47	ug/m3							
Ethylbenzene	ND	0.44	"							
m,p-Xylene	ND	0.44	"							
Styrene	ND	0.43	"							
o-Xylene	ND	0.44	"							
Bromoform	ND	1.0	"							
1,1,2,2-Tetrachloroethane	ND	0.70	"							
4-Ethyltoluene	ND	0.50	"							
1,3,5-Trimethylbenzene	ND	0.50	"							
1,2,4-Trimethylbenzene	ND	0.50	"							
1,3-Dichlorobenzene	ND	0.61	"							
1,4-Dichlorobenzene	ND	0.61	"							
1,2-Dichlorobenzene	ND	0.61	"							
1,2,4-Trichlorobenzene	ND	0.75	"							
Hexachlorobutadiene	ND	2.1	"							
Surrogate: 1,2-Dichloroethane-d4	*230*		*"*	*214*		*107*	*76-134*			
Surrogate: Toluene-d8	*208*		*"*	*207*		*100*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*392*		*"*	*364*		*107*	*77-127*			
LCS (EI22105-BS1)				Prepared: 19-Sep-12 Analyzed: 20-Sep-12						
Dichlorodifluoromethane (F12)	13	1.0	ug/m3	10.1		128	65-135		35	
Vinyl chloride	5.3	0.13	"	5.20		101	65-135		35	
Chloroethane	5.0	0.27	"	5.36		92.5	65-135		35	
Trichlorofluoromethane (F11)	12	0.56	"	11.3		109	65-135		35	
1,1-Dichloroethene	7.6	0.40	"	8.08		94.5	65-135		35	
1,1,2-Trichlorotrifluoroethane (F113)	16	0.77	"	15.5		104	65-135		35	
Methylene chloride (Dichloromethane)	6.2	0.35	"	7.08		88.1	65-135		35	
trans-1,2-Dichloroethene	6.9	0.40	"	8.08		85.3	65-135		35	
1,1-Dichloroethane	7.8	0.41	"	8.24		94.7	65-135		35	
cis-1,2-Dichloroethene	6.2	0.40	"	8.00		77.0	65-135		35	
Chloroform	9.7	0.25	"	9.92		98.1	65-135		35	
1,1,1-Trichloroethane	11	0.55	"	11.1		95.8	65-135		35	
1,2-Dichloroethane (EDC)	7.7	0.41	"	8.24		93.8	65-135		35	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI22105 - TO-15										
LCS (EI22105-BS1)				Prepared: 19-Sep-12 Analyzed: 20-Sep-12						
Benzene	5.4	0.16	ug/m3	6.48		84.0	65-135		35	
Carbon tetrachloride	13	0.32	"	12.8		104	65-135		35	
Trichloroethene	9.9	0.55	"	11.0		89.9	65-135		35	
Toluene	6.5	0.76	"	7.68		85.3	65-135		35	
1,1,2-Trichloroethane	9.3	0.55	"	11.1		83.2	65-135		35	
Tetrachloroethene	12	0.69	"	13.8		83.4	65-135		35	
1,1,1,2-Tetrachloroethane	13	0.70	"	14.0		90.1	65-135		35	
Ethylbenzene	7.7	0.44	"	8.84		86.9	65-135		35	
m,p-Xylene	17	0.44	"	17.7		95.7	65-135		35	
o-Xylene	8.6	0.44	"	8.84		96.8	65-135		35	
1,1,2,2-Tetrachloroethane	13	0.70	"	14.0		92.2	65-135		35	
Surrogate: 1,2-Dichloroethane-d4	*231*		*"*	*214*		*108*	*76-134*			
Surrogate: Toluene-d8	*207*		*"*	*207*		*99.9*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*416*		*"*	*364*		*114*	*77-127*			
LCS Dup (EI22105-BSD1)				Prepared: 19-Sep-12 Analyzed: 20-Sep-12						
Dichlorodifluoromethane (F12)	13	1.0	ug/m3	10.1		127	65-135	1.52	35	
Vinyl chloride	5.6	0.13	"	5.20		107	65-135	5.41	35	
Chloroethane	5.6	0.27	"	5.36		105	65-135	12.6	35	
Trichlorofluoromethane (F11)	12	0.56	"	11.3		110	65-135	0.501	35	
1,1-Dichloroethene	7.8	0.40	"	8.08		96.3	65-135	1.93	35	
1,1,2-Trichlorotrifluoroethane (F113)	16	0.77	"	15.5		105	65-135	1.04	35	
Methylene chloride (Dichloromethane)	6.6	0.35	"	7.08		93.6	65-135	6.03	35	
trans-1,2-Dichloroethene	7.4	0.40	"	8.08		91.7	65-135	7.14	35	
1,1-Dichloroethane	8.2	0.41	"	8.24		99.6	65-135	4.98	35	
cis-1,2-Dichloroethene	6.8	0.40	"	8.00		84.5	65-135	9.34	35	
Chloroform	9.9	0.25	"	9.92		99.4	65-135	1.26	35	
1,1,1-Trichloroethane	11	0.55	"	11.1		99.2	65-135	3.41	35	
1,2-Dichloroethane (EDC)	7.8	0.41	"	8.24		95.2	65-135	1.48	35	
Benzene	5.7	0.16	"	6.48		87.4	65-135	3.96	35	
Carbon tetrachloride	13	0.32	"	12.8		103	65-135	0.769	35	
Trichloroethene	9.9	0.55	"	11.0		90.3	65-135	0.386	35	
Toluene	6.6	0.76	"	7.68		86.4	65-135	1.33	35	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI22105 - TO-15										
LCS Dup (EI22105-BSD1)				Prepared: 19-Sep-12 Analyzed: 20-Sep-12						
1,1,2-Trichloroethane	10	0.55	ug/m3	11.1		89.8	65-135	7.62	35	
Tetrachloroethene	12	0.69	"	13.8		85.6	65-135	2.59	35	
1,1,1,2-Tetrachloroethane	13	0.70	"	14.0		92.7	65-135	2.89	35	
Ethylbenzene	7.9	0.44	"	8.84		89.2	65-135	2.60	35	
m,p-Xylene	17	0.44	"	17.7		97.4	65-135	1.83	35	
o-Xylene	8.6	0.44	"	8.84		97.5	65-135	0.717	35	
1,1,2,2-Tetrachloroethane	13	0.70	"	14.0		91.2	65-135	1.03	35	
Surrogate: 1,2-Dichloroethane-d4	*227*		"	*214*		*106*	*76-134*			
Surrogate: Toluene-d8	*215*		"	*207*		*104*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*409*		"	*364*		*112*	*77-127*			

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Washington	Project: KJ091812-13	
32001 32nd Ave. South, Suite 100	Project Number: 1196016.00/Task9/00 / Yakima, WA	Reported:
Federal Way, WA 98001	Project Manager: Mr. Josh Hopp	28-Sep-12 12:27

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS
Certificate# 2742, 2745, & 2741 approved for LUFT
Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods:

1,2,4-Trichlorobenzene by EPA TO-15 & TO-14A
Hexachlorobutadiene by EPA TO-15 & TO-14A
1,2,4-Trimethylbenzene by EPA TO -14A
1,2-Dichlorobenzene by EPA TO-15 & TO-14A
1,3,5-Trimethylbenzene by EPA TO -14A
1,4-Dichlorobenzene by EPA TO-15 & TO-14A
Benzene by EPA TO-15 & TO-14A
Chlorobenzene by EPA TO-15 & TO-14A
Ethyl benzene by EPA TO-15 & TO-14A
Styrene by EPA TO-15 & TO-14A
Toluene by EPA TO-15 & TO-14A
Total Xylenes by EPA TO-15 & TO-14A
1,1,1-Trichloroethane by EPA TO-15 & TO-14A
1,1,2,2-Tetrachloroethane by EPA TO-15 & TO-14A
1,1,2-Trichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethane by EPA TO-15 & TO-14A
1,1-Dichloroethene by EPA TO-15 & TO-14A
1,2-Dichloroethane by EPA TO-15 & TO-14A
1,2-Dichloropropane by EPA TO-15 & TO-14A
Benzyl Chloride by EPA TO-15 & TO-14A
Bromoform by EPA TO-15
Bromomethane by EPA TO-15 & TO-14A
Carbon tetrachloride by EPA TO-15 & TO-14A
Chloroethane by EPA TO-15
Chloroform by EPA TO-15 & TO-14A
Chloromethane by EPA TO-15 & TO-14A
cis-1,2-Dichloroethene by EPA TO-15
cis-1,2-Dichloropropene by EPA TO-15 & TO-14A
Methylene chloride by EPA TO -15 & TO-14A
Tetrachloroethane by EPA TO-15 & TO-14A
trans-1,2-Dichloroethene by EPA TO-15
trans-1,2-Dichloropropene by EPA TO-15 & TO-14A
Trichloroethene by EPA TO-15 & TO-14A
Vinyl chloride by EPA TO -15 & TO-14A
2-Butanone by EPA TO-15
4-Methyl-2-Pentanone by EPA TO-15
Hexane by EPA TO-15
Methyl tert-butyl ether by EPA TO-15
Vinyl acetate by EPA TO-15
Dibromochloromethane by EPA TO-15
Dichlorodifluoromethane by EPA TO-15 & TO-14A
Trichlorofluoromethane by EPA TO-15 & TO-14A
Naphthalene by EPA TO-15 & TO-14A
m&p Xylenes by EPA TO-15
o-Xylene by EPA TO-15
1,3-Butadiene by EPA TO-15
1,1,2-Trichlorotrifluoroethane by EPA TO-15 & TO-14A
Carbon disulfide by EPA TO-15
1,4-Dioxane by EPA TO-15
Cyclohexane by EPA TO-15
tert-Butyl Alcohol by EPA TO-15
1,3-Dichlorobenzene by EPA TO-15 & TO-14A
Heptane by EPA TO-15
Bromodichloromethane by EPA TO-15 & TO-14A

Chain of Custody Record

Mobile Geochemistry Inc.

☒ 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
☐ 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Date: 9/12/12

H&P Project # KJ091812-13

Outside Lab:

Client: Kennedy/Jenks Consultants

Address: 32001 32nd Ave S, Suite 100, Federal Way, WA 98001

Email: joshhopp@kennedyjenks.com

Collector: Josh Hopp

Client Project # 196016.00 | Task 9 | 00

Location: Yakima, WA

Phone: 253-835-6408

Fax:

Project Contact: Josh Hopp

Page: 1 of 1

Turn around time: Standard

Geotracker EDF: Yes ☐ No ☒

Global ID:

Excel EDD: Yes ☒ No ☐

Sample Receipt
Intact: ☑ Yes ☐ No
Seal Intact: ☑ Yes ☐ No ☐ N/A
Cold: ☐ Yes ☐ No ☑ N/A
Temperature: RT

Special Instructions:

Lab Work Order # E209068

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	Total # of containers	8260B Full List	8260B ☐ BTEX/OXY ☐ TPH gas	8015M TPH ☐ g ☐ d ☐ ext	418.1 TRPH	VOC's: Full List ☐ 8260B ☒ TO-15	VOC's: Short List/DTSC ☐ 8260B ☐ TO-15	VOC's: SAM, 8260B ☐ SAM A ☐ SAM B	Naphthalene ☐ 8260B ☐ TO-15	Oxygenates ☐ 8260B ☐ TO-15	TPHv gas ☐ 8260B ☐ TO-15	Ketones ☐ 8260B ☐ TO-15	Other ____ ☐ 8260B ☐ TO-15	Leak Check Compound ☐ 1,1 DFA ☐ OTHER	Methane	Fixed Gases ☐ CO_2 ☐ O_2 ☐ N_2	CAN# VAC#
								SOIL/GW				SOIL VAPOR/AIR ANALYSIS											
BMS-SS-1-091212		200ml	1605	9/12/12	soil vapor	6L summa	1					X								X			5709-4.8
BMS-SS-4-091212		200ml	1431	↓	↓	↓	1					X								X			291-4.1

Relinquished by: (Signature) Josh Hopp	(company) KJ	Received by: (Signature)	(company)	Date: 9/13/12	Time: 1500
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company) HHP	Date: 9/14/12	Time: 1150
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ Disposal ☐ Return to client ☐ Pickup

Field Logs

Kennedy/Jenks Consultants

Subslab and Soil Vapor Survey Log Sheet

Project Name / Location: Former Frank Wear Site / Buckle My Shoe Daycare **Date:** 9-12-12

Client: Dept. of Ecology **Field Representative(s):** Josh

Samplers Name: Josh Hopp **Arrival Time:** 0545

Departure Time: 1800

Weather / Site Conditions: Sunny + clear, 40°F - 75°F, light wind from west

Sample ID	Installation Time	Canister/ Controller No.	Sample Collection		Probe Depth (ft)	Tubing Length (ft)	Purge Volume (mL)	Sample Volume (mL)	Flow Rate (mL/min)	Summa Vacuum Pressure (in Hg)		Tracer Gas Concentrations			Shut-In Test <100" H_2O	Probe Vacuum Pressure <100" H_2O
			Start Time	End Time						Initial	Final	Initial Shroud Conc. (%)	Final Shroud Conc. (%)	Sample (%)		
BMS-SS-4-091212	0835	291	1347	1431	SS	2'	200ml	6L	200ml/min	[illegible]	-5"	83.5%	87.3%	3%	✓	—
										-27"						
BMS-SS-1-091212	0745	ST009	1523	1605	SS	2'	200ml	6L	200	-27	-5	— **	77.8%	1500ppm	✓	✓

Note: reinstalled previous monitoring points today using VAPOR PINS from Cox Colving. Locations were allowed to equilibrate for several hours prior to subslab soil vapor sampling. * Helium leaks still detected at one or both locations.

Probe Installation Materials

Filter: none

Tubing: 1/8" Nylaflow

Termination: Vapor Pin

Probe Construction Specifications

Borehole Diam: 5/8"

Subslab Sand Pack: none

Soil Gas Sand Pack: none

PV's 1' 1/4-inch tubing = 5 ml 1' 1/8-inch tubing = 1 ml

Field Notes: * Helium meter died + had to be charged!

Kennedy/Jenks Consultants

Subslab and Soil Vapor Survey Log Sheet

Project Name / Location: Former Frank Wear Site / Buckle My Shoe Daycare **Date:** 8-13-12

Client: Dept. of Ecology **Field Representative(s):** Josh & Jason Shira **Arrival Time:** 0530 ~~0800~~

Samplers Name: Josh Hopp & Jason Shira **Departure Time:** 1800

Weather / Site Conditions: clear ; ~70 - 100°F

Sample ID	Installation Time	Canister/ Controller No.	Sample Collection		Probe Depth (ft)	Tubing Length (ft)	Purge Volume (mL)	Sample Volume (mL)	Flow Rate (mL/min)	Summa Vacuum Pressure (in Hg)		Tracer Gas Concentrations			Shut-In Test <100" H_2O	Probe Vacuum Pressure <100" H_2O
			Start Time	End Time						Initial	Final	Initial Shroud Conc. (%)	Final Shroud Conc. (%)	Sample (%)		
BMS-SS-4-081312	—	329/102	1120	1200	SS	2'	*	6L	150 mL/min	~~-27~~	-5	~~90.2~~ 83.6	87.2%	~~10,000~~ 2.3%	✓	—
Note: Suspected leak in probe construction: snipped "kinked" portion of probe & retested Sample for helium leak. Discussed w/ client in the field. Solution: keep shroud concentration high during sampling so that 2% sample concentration is less than 5% of shroud concentration.																
BMS-SS-2-081312	—	289/026	1225	1308	SS	2'	250mL	6L	150 mL/min	-28.5	-5	97.1%	90.7%	3150 ppm	✓	—
Note: Shut in test initially failed, but after securing & checking a couple fittings passed.																

Probe Installation Materials

Filter: —

Tubing: blade plastic - 1/4"

Termination: " " 2-way valve

Probe Construction Specifications

Borehole Diam:

Subslab Sand Pack: None

Soil Gas Sand Pack: None

PV's 1' 1/4-inch tubing = 5 ml 1' 1/8-inch tubing = 1 ml

Field Notes: * 250 + 250 + 500mL = 1L total

Ecology Former Frank Wear Site (Yakima, WA)
FIELD INDOOR AIR SAMPLING LOG

Project No.: 1196016.00

Date: 9-12-12

Sampling Location ID: Buckle My Shoe Early Learning Center

Sampling Personnel: Jodi

Weather conditions (Note approximate wind speed/direction, rain, and temperature): Sunny & clear, ~40°F-75°F, with light wind from west

Number of canisters placed in building: 2 inside, 1 outside

Location of canister(s) within building: M1 located in NE play area atop a shelf along the north wall, M3 located in SE play area atop a small table; ambient sample collected from exterior play area outside.

Location of duplicate sample(s), if taken: - none -

Sample ID	Canister serial no.	Flow controller serial no.	Temp. at sample	LAB initial vacuum of canister (in.	FIELD Initial vacuum of canister	Sample start time	Sample end time	Final vacuum of canister (in. Hg)
BMS-M1-091212	5681	FC00153	~70°F	—	-29	0620	1755	-9.5
BMS-M3-091212	34487	FC00333	~70°F	—	-28.5	0620	1757	-7
AMB -UPWIND- 091212	33925	FC00808	~45-70°F	—	-29	0620	1755	-8.5

Comments (Odors present, smoking, windows/doors open during sampling, etc.): windows were closed; HVAC & fans running, occasional cleaning with bleach throughout the day by occupants.

Ecology Former Frank Wear Site (Yakima, WA)
FIELD INDOOR AIR SAMPLING LOG

Project No.: 1196016.00

Date: 8-13-12

Sampling Location ID: Buckle My Shoe Early Learning Center

Sampling Personnel: Josh

Weather conditions (Note approximate wind speed/direction, rain, and temperature): clear 70°F - 95°F W-wind 5-10mph

Number of canisters placed in building: 2 inside, one outside

Location of canister(s) within building: M1 located in NE play area atop a shelf along N-wall, M3 located in SE play area atop a small table; ambient sample collected outside in fenced play area.

Location of duplicate sample(s), if taken: - none -

Sample ID	Canister serial no.	Flow controller serial no.	Temp. at sample	LAB initial vacuum of canister (in.	FIELD Initial vacuum of canister	Sample start time	Sample end time	Final vacuum of canister (in. Hg)
BMS-M1-081312	11890	FC00980	~75°F	—	-32	0608	1752	-9
BMS-M3-081312	34006	FC00808	~75°F	—	-31	0608	1752	-8.5
AMB-UPWIND-081312	05707	0000006675	70-100°F	—	-28	0612	1755	-8.5

Comments (Odors present, smoking, windows/doors open during sampling, etc.): windows closed; HVAC + fans running during sampling; occasional cleaning with bleach on surfaces (as disinfectant) by occupants during the day

Ecology Former Frank Wear Site (Yakima, WA)
FIELD INDOOR AIR SAMPLING LOG

Project No.: 1196016.00

Date: 7/6/12

Sampling Location ID: Buckle My Shoe Early Learning Center

Sampling Personnel: Josh

Weather conditions (Note approximate wind speed/direction, rain, and temperature): 60°F - 90°F, clear skies, W - wind ~5-10 mph

Number of canisters placed in building: 2 inside, one outside

Location of canister(s) within building: M1 located in northeast play area atop a shelf along N-wall. M3 located in southeast play area atop a small table near center post of room; ambient sample collected outside in the fenced play area.

Location of duplicate sample(s), if taken: none

Sample ID	Canister serial no.	Flow controller serial no.	Temp. at sample	LAB initial vacuum of canister (in.	FIELD Initial vacuum of canister	Sample start time	Sample end time	Final vacuum of canister (in. Hg)
BMS-M1-070612	926	FC00457	60°-70°F	—	-29	0615	1745	-8
BMS-M3-070612	12009	FC00098	60°-70°F	—	-30	0615	1745	-7
AMB-UPWIND-070612	12689	6845	60°-90°F	—	-28.5	0617	1749	-7.5

Comments (Odors present, smoking, windows/doors open during sampling, etc.): windows closed, HVAC & fans running during sampling, occasional cleaing w/ bleach on surfaces (as disinfectant) during the day