Interim Remedial Action Status Report

Plaid Pantry Store #112

1002 W. Fourth Plain Boulevard

Vancouver, WA 98660

Washington Department of Ecology VCP Site ID SW1314
UST Facility ID 9158935
EES Project 1179-02

Prepared For

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1 INTRODUCTION

On behalf of Plaid Pantries, Inc. (Plaid), EES Environmental Consulting, Inc. (EES) prepared this report to provide a status update concerning remedial activities at the Plaid Store #112 located at 1002 W. Fourth Plain Boulevard in Vancouver, Washington (Property, Figure 1). Remedial actions are being conducted at this Property to address subsurface gasoline impacts exceeding regulatory cleanup requirements as summarized below and detailed in prior reports (PNG 2011; EES 2012, 2013).

1.1 PURPOSE

In response to a gasoline release discovered on the subject property, EES implemented a streamlined source-area remedial approach using established soil vapor extraction (SVE) technology. Because the identified impacts greatly exceed Washington Department of Ecology's (Ecology) default cleanup criteria, remedial action is appropriate under WAC 173-340 and published guidance for the remediation of petroleum-contaminated sites (Ecology 2011).

Soil remedial actions were recommended in an effort to achieve the following basic remedial action objectives:

- Implement a streamlined remedy consistent with Ecology's guidance for an Interim Action (WAC 173-340-430):
  - Emphasizes source-area contamination and related controls and does not directly address cleanup of off-Property areas.
  - Source controls are "technically necessary to reduce a threat to human health or the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance."
  - Corrects a problem "that may become substantially worse or cost substantially more to address if the remedial action is delayed." The proposed source controls include contaminant mass removal efforts and satisfy this aspect of an interim action.
  - Represents a remedial action necessary to support further assessment, investigation, and design of a cleanup action.
- Treat/recover the gasoline source mass for affected media including soil and vapor-phase ("soil gas").

2 BACKGROUND

2.1 PROPERTY AND SITE DESCRIPTION

The subject Property is located at the northwest corner of Kauffman Avenue and West Fourth Plain Boulevard in Vancouver, Washington (Figure 1). The 0.26-acre Property is owned by Louise Piacentini and is occupied by a single commercial building. Building tenants include a Plaid convenience market with retail gasoline station, and a Domino's Pizza restaurant

(Figure 2). The following facility identification numbers have been assigned to the Property for reference by Ecology:

- UST Facility #9158935
- Voluntary Cleanup Program (VCP) Site Number SW1314

The gasoline release (source) area is located on the Property and appears to be associated with historical fueling infrastructure that was removed by Plaid in 2012. Other prior releases may have occurred on the Property, although no releases from the Plaid fueling system are known to have occurred. Soil impacts are present beyond the Property boundary to the south, beneath a limited portion of the adjacent Fourth Plain Boulevard. Collectively, the area affected by gasoline contamination originating at the subject Property is called the Site.

2.2 ZONING

The subject Property is zoned as Light Industrial (LI), while surrounding tax parcels are also zoned as Light Industrial (LI) or Community Commercial (CC). The intent of these zoning types, as described in Title 20 of the City of Vancouver Municipal Code, is listed below. A zoning map for the Property and vicinity is provided in Appendix A.

- Light Industrial - The intent and function of the Light Industrial zone is to provide appropriate locations for combining certain industries including industrial service, manufacturing, research/development, warehousing activities, and general office uses and limited retail.
- Community Commercial - The intent and function of the Community Commercial zone is to provide for retail goods and services purchased regularly by residents of several nearby neighborhoods. The zone also accommodates offices, institutions, and housing. Housing is allowed above the ground floor in this area.

2.3 PLAID FACILITY OPERATIONS

Plaid's operations on the Property include a retail gasoline station and convenience store, which were constructed in 1982 and opened for business in January 1983. Plaid's operating underground gasoline storage tank system includes two 12,000-gallon tanks and a 10,000-gallon tank, and is registered with Ecology (UST Facility #9158935). During Plaid's operations, only gasoline has been stored and dispensed at the Property. Leaded gasoline may have been dispensed at the Property during phase-out of that product in the 1980s. Plaid is not aware of any releases from its fueling system. EES understands that Plaid did not store or dispense other hydrocarbons such as diesel fuel, bulk motor oil, waste oil, or solvents at any time during its facility operations.

2.4 HISTORICAL SITE FUELING OPERATIONS

Plaid evaluated and documented prior site operations under separate cover (PNG 2011) and as summarized below. City directories and building permit information indicate that Property operations prior to 1982 included a gasoline service station, an auto repair shop, an auto

detailing and upholstery shop, a dry cleaner, a barber shop, a dairy, a wood furniture refinishing shop, and a second-hand store.

The nature and volume of fuel and other chemical products used and stored at the Property by others have not been determined by Plaid. According to the Property owner's representative, a building and two underground fuel storage tanks (3,000 and 5,000 gallon capacity) were removed before Plaid's redevelopment in the early 1980s.

3 PREVIOUS ENVIRONMENTAL SITE INVESTIGATION ACTIVITIES

Results of subsurface sampling and characterization tasks conducted by Plaid are summarized below and on Tables 1 through 3, illustrated on Figures 3 through 5, and detailed under separate cover.

3.1 INITIAL SITE ASSESSMENT (SEPTEMBER 2011)

Initial assessment results completed by PNG Environmental, Inc. (PNG) identified gasoline in soil at a boring (B-5) located south of the existing Plaid fuel dispensing area, near the southern property margin (Figure 3). Gasoline at this location was identified at depths between approximately 4.5 and 12.5 feet, with maximum gasoline and benzene concentrations of 4,070 and 2.1 milligrams per kilogram (mg/kg) measured. No indication of gasoline impacts was observed below the zone of shallow soil contamination. No gasoline releases are known to have occurred during Plaid's fueling operations. Historical fueling activities and related infrastructure were present in this dispenser area in the 1960s and 1970s, prior to Plaid's site redevelopment (PNG 2011).

- Evidence of oil contamination also was identified at nine feet below ground surface in a boring (B-2) located north of the Plaid fueling area. The source(s) of the identified oil impacts at B-2 have not been determined, but are consistent with historical operations. Oil impacts identified at B-2 are below Ecology soil cleanup levels.
- Chlorinated and other non-fuel volatile organic compounds (VOCs) were not identified among soil samples collected during this initial assessment.

Gasoline impacts at B-5 exceeded default Model Toxics Control Act (MTCA) Method A soil cleanup levels published by Ecology. In view of the significant depth to water in the site vicinity and the vertical profile of shallow contaminants identified at B-5, PNG concluded that gasoline impacts to groundwater were not suspected at the site.

3.2 FUEL SYSTEM UPGRADES AND TANK DECOMMISSIONING (JANUARY-FEBRUARY 2012)

During fuel system upgrades conducted by Plaid in January and February 2012, an abandoned and previously unknown underground fuel tank was encountered immediately south of the Plaid fuel dispenser island, near boring B-5 where soil contamination previously was identified

(Figures 3 and 4). The steel tank was empty except for residual water and sludge, and its capacity was approximately 1,000 gallons. The tank was not used or known to exist by Plaid or the property owner, and no specific information concerning the tank's prior use or contents was obtained. Laboratory analyses of tank sludge contents following decommissioning indicated the presence of gasoline-range organics. Plaid's contractor notified Ecology and decommissioned the tank by removal in February 2012.

Upon removal, corrosion and pitting were observed on tank surfaces. Obvious soil contamination surrounded the tank and accessible discolored soils were excavated and transported to the Hillsboro Landfill under permit by Plaid's contractor. Approximately 13 cubic yards of contaminated soil were excavated from the tank area, although the extent of excavation was limited by Plaid's existing fueling system infrastructure and the adjacent public sidewalk to the south. The final excavation area measured approximately six feet by ten feet, and six feet deep. Confirmatory analytical testing results indicated that residual impacts exceeded MTCA Method A soil cleanup levels for gasoline and benzene.

Chlorinated solvent VOCs were not identified in residual tank contents or among confirmatory post-excavation soil samples collected from areas surrounding the former tank.

Based on the identification of relatively high gasoline and related fuel constituent contamination remaining in soils near the fueling dispenser area, and in an effort to take advantage of exposed infrastructure during the system upgrade and decommissioning time period, Plaid installed one 10-foot deep, two-inch diameter well (SVE-1) for future soil vapor extraction testing, and five additional "place-holder" monuments intended to facilitate future assessment activities. These place-holder locations consisted of small flush-mounted steel vaults placed in locations surrounding the former fuel tank and determined by Plaid's contractor to be isolated from subsurface fuel system piping and other underground Plaid infrastructure. Additional assessment was conducted at these locations in August 2012 (Section 3.3).

3.3 SUPPLEMENTAL SITE ASSESSMENT (AUGUST 2012)

In August 2012, EES conducted additional site assessment activities including the collection of soil and soil vapor samples on the Property and south of the Property boundary in the adjacent Fourth Plain Boulevard right-of-way. SVE test wells were installed at four of the previously-installed place-holder monument locations on the Property, designated SVE-2 through SVE-5. SVE well logs are provided in Appendix B.

Significant findings of these assessment activities included the following:

- Gasoline and related constituent impacts to soil at concentrations exceeding MTCA Method A cleanup levels were identified at the Plaid fuel pump area, and extending beyond Property margins to the south beneath the public sidewalk and Fourth Plain Boulevard right-of-way.
- The extent of identified gasoline-related impacts exceeding MTCA Method-A default soil cleanup levels appeared to cover an area measuring approximately 20 by 30 feet, extending to depths of less than 15 feet deep.

- Identified gasoline impacts in soil extend beneath the public right-of-way immediately south of the Property, but do not appear to be in direct contact with known underground utility infrastructure, based on site characterization data and information provided by the City of Vancouver.
- Soil vapor data are generally consistent with identified gasoline impacts to soil, with the greatest vapor concentrations centered at the Plaid fuel dispenser island area (Figure 5). Gasoline-related soil vapor concentrations beyond the margins of the fueling area are orders of magnitude lower than where the greatest levels are identified at the fuel pump island, indicating the gasoline source area has been delineated on-site.
- Groundwater has not been encountered at maximum site exploration depths exceeding 40 feet, and is not anticipated within 60 to 80 feet of the ground surface in the site vicinity based on topography (see Section 4.3). Gasoline-contaminated soils at the Site appear to be separated from groundwater by a minimum of 25 feet, likely more. Gasoline releases at the subject property therefore are not expected to have migrated to groundwater.
- Non-gasoline volatile organic compounds detected in soil vapor included tetrachloroethene (PCE) and other chlorinated compounds typically associated with dry cleaning, degreasing, paint stripping, and other commercial/industrial activities that are inconsistent with operation of the Plaid retail gasoline fueling facility. The greatest PCE concentrations were detected at shallow soil vapor extraction wells SVE-3 and SVE-5, located near the current and historical Property fuel dispenser area. PCE was identified at much lower, relatively uniform concentrations among four widespread, deeper soil gas samples.

3.4 SOIL VAPOR EXTRACTION PILOT TEST (OCTOBER 2012)

On October 4 and 5, 2012, EES performed a preliminary soil vapor extraction pilot test at the Property in an effort to evaluate the performance and potential effectiveness of this technology to address identified soil impacts. The results of the pilot test demonstrated that soil vapor extraction is likely to be effective remedial technology and source control for identified contaminants based on observed conditions and performance.

3.5 SITE CHARACTERIZATION CONCLUSIONS

Based on the results of site investigation activities conducted to date, EES believes that gasoline impacts exceeding Ecology cleanup criteria appear to be localized near the current and historical (pre-Plaid) fuel dispenser island, extending southwards beneath the adjoining sidewalk and roadway area (Figures 3 through 5). Deeper soils are not known or suspected to be impacted by the gasoline impacts, nor do gasoline impacts appear to extend to the water table.

Vapor-phase chlorinated solvent impacts have also been identified in the same general area where gasoline contamination is present. The source(s) and distribution of solvents have not been confirmed. The presence of solvents and other possible non-gasoline chemical impacts is unrelated to Plaid's well-documented history of retail gasoline fueling operations.

Because gasoline impacts identified at the Site exceed Ecology's default cleanup criteria, a remedial action is appropriate under WAC 173-340 and published guidance for the remediation of petroleum-contaminated sites (Ecology 2011). Remedial actions therefore were recommended in an effort to achieve the following basic remedial action objectives (EES 2013):

- Implement a streamlined remedy consistent with Ecology's guidance for an Interim Action (WAC 173-340-430).
- Treat/recover the gasoline source mass for affected media including soil and vapor-phase ("soil gas").

Based on these recommendations and following approval by Plaid and Ecology, EES designed and installed an SVE system utilizing the existing SVE well array (Section 7).

3.6 REGULATORY STATUS

Site investigation and initial cleanup activities summarized in Section 3 of this report have been conducted by Plaid in accordance with MTCA cleanup rules (Chapter 173-340 WAC) and published guidance (Ecology 2011). Plaid enrolled in Ecology's Voluntary Cleanup Program (VCP) in 2013 and developed a written work plan for interim remedial actions utilizing SVE (EES 2013). In a recent Opinion Letter, Ecology confirmed that (1) Site contamination has been adequately characterized, and (2) Plaid's proposed interim remedial action based on SVE is appropriate and meets the substantive requirements of MTCA (Ecology 2013).

This IRAM Status Report provides details in support of the remedy implementation, based on an initial operational period between August and December 2013.

4 GENERAL SUBSURFACE CONDITIONS

General subsurface conditions including Site stratigraphy and regional hydrogeology are described below.

4.1 STRATIGRAPHY

The majority of the Property is paved with asphalt and concrete, with base fill extending to approximately one foot below the paved surface. Subgrade fill is underlain by fine-grained native soil consisting of brown silt and sandy silt, grading to silty sand and extending to depths ranging between 13.5 and 20 feet below ground surface (bgs). The soil is composed of varying amounts of low plastic fines and fine sand. The fine grained soil is underlain by sands and gravels extending to maximum depths explored of approximately 40 feet bgs. The sand is brown to gray and fine to coarse grained. Observed gravels are subround to subangular, with cobbles up to three inches in diameter. Groundwater has not been encountered at terminal exploration depths up to 40 feet.

EES reviewed a vicinity geologic map entitled *Geologic Map of the Vancouver Quadrangle, Washington and Oregon* (Phillips 1987). The site vicinity is depicted as being underlain by Holocene to upper Pleistocene-aged alluvial deposits, which are described as medium to fine sand and silt on the floodplains of the Columbia River. The unit is typically less than 50 feet

thick; but locally up to 165 feet thick. This mapped alluvial unit is consistent with EES stratigraphic observations described above and in EES 2012.

The subject Property is located on alluvial terrace deposits above the Columbia River, at an elevation of approximately 90 to 95 feet above mean sea level (MSL).

4.2 SURFACE WATER

Stormwater does not appear to be collected or infiltrated on the paved Property and is therefore expected to be isolated from shallow impacted soil present at the site. Vicinity runoff is collected by municipal catch basins and routed into a west-flowing combined sewer located beneath the adjacent Fourth Plain Boulevard. According to the City of Vancouver, this combined sewer discharges to the local waste water treatment facility.

4.3 HYDROGEOLOGY

Groundwater has not been encountered on the Property at maximum exploration depths up to 40 feet. To confirm local and regional groundwater conditions, EES reviewed available well log information published by the Washington State Water Resources Department.

The local water table is expected to flow generally west or southwestwards following local topography and towards the nearby Columbia River. The primary local and regional drinking water aquifer is the Troutdale Gravel Aquifer (TGA), which is present among deeper water-bearing sands and gravels typically encountered at depths below 100 feet. No site-specific data are available, but groundwater flow in the TGA in this area is typically towards the Columbia River.

Groundwater conditions have been studied extensively as part of environmental investigations associated with industrial operations located near and within the Fruit Valley neighborhood, located at distances of 0.25 miles or greater to the west/southwest and approximately 40 to 50 feet lower in elevation compared to the subject Property. Water table conditions in the Fruit Valley area therefore are expected to be significantly different than at the subject Site.

For reference, the Columbia River stage at Vancouver, Washington averages less than 10 feet MSL (USACOE 2004), suggesting that the water table surface may approach depths of 80 feet or greater beneath the subject Property.

4.3.1 WATER WELL SEARCH

Ecology's Well Log Viewer online database was searched for wells located within an approximate 0.25-mile radius of the Property. The purpose of this effort was (1) to evaluate groundwater conditions in the Site vicinity, and (2) to identify wells that may serve beneficial uses in order to complete the Conceptual Site Model and exposure pathway evaluation as required by Ecology guidance (Section 5).

The water well search was intended to identify and locate wells as feasible based on information provided in the available well reports. Categories of wells searched include water wells and

resource protection wells. The well search included wells located in the southeast quarter of Section 21, the southwest quarter of Section 22, and the northern half of Section 51 Township 2 North, Range 1 East of the Willamette Meridian.

A list of wells identified in the search is presented in Table 4 and identified water supply wells are shown on Figure 6. The data in Table 4 provides useful information supporting our assessment that shallow groundwater near the Site is relatively deep and is not used for drinking purposes.

- **Water Wells**: A total of eighteen water wells are registered in Sections 21, 22, and 51; the well logs indicate the following:
  - 17 of the 18 wells are located more than 0.25-mile from the Site based on reported quarter-quarter section, well address, or county.
  - Well 237626 is located in a quarter-quarter section which may be 0.25-mile from the Property. However, the well location is uncertain and cannot be confirmed to be within the search radius.
- **Resource Protection Wells**: A total of 209 resource protection wells are registered in Sections 21, 22, and 51; the well logs indicate the following:
  - 180 of the wells are located more than 0.25-mile from the Site based on reported quarter-quarter section, well address, or county.
  - 29 of the well logs are for geotechnical borings, soil vapor wells, and/or well abandonments, which do not include groundwater information.
  - No monitoring wells are located within 0.25-mile of the Site.

Based on the results of the Well Log database review, water wells in the Site vicinity appear to be screened in the regional aquifer at depths below approximately 100 feet and first water is likely encountered at similar depths. Findings of this well search are consistent with our observation that groundwater is not likely to be encountered within 60 to 80 feet of the local ground surface and groundwater does not appear to be beneficially used within 0.25-mile of the Site.

5 CONCEPTUAL SITE MODEL

The Conceptual Site Model (CSM) evaluates current and reasonably likely future Site conditions, and identifies potential sources of hazardous substances, potentially affected media, and potential migration and exposure pathways for anticipated human and ecological receptors. The CSM is a required element of Site cleanup planning (Ecology 2011).

A diagram of the CSM is provided as Figure 7. Only complete pathways can result in exposure. Complete exposure pathways must include each of the following components:

- A source and mechanism of contaminant release.
- An exposure route by which contact can occur.
- A receptor.

At a typical retail gasoline station, releases from the USTs and fuel delivery system are the primary release mechanisms by which contaminants of potential concern (COPCs) may be transferred from the source to affected media. A secondary release mechanism includes vapor migration from soil into indoor and outdoor air. The media potentially affected by primary and secondary release mechanisms include soil and soil vapor. As indicated in Sections 3.3 and 4.3, groundwater at the Site is not known or suspected to be impacted by the Property's gasoline release(s).

Potential human receptors were identified for the Site based on current and reasonably likely future land use. Although current zoning allows for limited residential land use, it is anticipated that the Property will retain its commercial character and that future land uses will be consistent with the current commercial use. Where COPCs extend beyond Property margins beneath the adjacent sidewalk and roadway to the south, only occupational (non-residential) use and exposures are anticipated.

Under MTCA, typical commercial and/or residential land use requires the most protective cleanup levels (termed unrestricted land use) normally be applied, based on assumptions for a "reasonable maximum exposure scenario." An alternative set of default cleanup levels utilizing industrial exposure assumptions exist under MTCA, but these values likely cannot be applied for the Site because zoning codes allow for non-industrial usage.

Preliminary soil cleanup levels for this site are based on the published unrestricted land use scenario (MTCA Method A), although modified Method B cleanup levels may be proposed to Ecology and developed by Plaid based on current and reasonably likely site-specific occupational (non-residential) exposure conditions. Current and potential future human receptors include:

- Commercial Workers: employees/workers/tenants.
- Construction Workers: personnel temporarily working at the Site during maintenance or construction activities.
- Trench or Excavation Workers: personnel temporarily working at the Site, and conducting activities that involve excavation and/or trenching for utility work.

No ecological receptors are known or suspected at the Site. Although MTCA requires consideration of terrestrial plants and animals that may potentially be exposed to hazardous substances, the site qualifies for exclusion from further terrestrial ecological evaluation under WAC 173340-7491(1)(b) because contaminated media are covered by buildings, paved roads, pavement, or other physical barriers that will prevent exposure. A terrestrial ecological evaluation was conducted for the site, as described in Section 6.3.

Identified complete exposure pathways are limited to occupational/commercial scenarios, with a relatively low potential for contaminant exposures, based on the following qualitative evaluation:

- Potential exposure of future construction workers to COPCs via ingestion, dermal contact, and inhalation of fugitive dust (particulate and volatile emissions) in soil and inhalation of volatiles migrating from soil to outdoor air.

- Potential exposure of future trench and/or excavation workers to COPCs via ingestion, dermal contact, and inhalation of fugitive dust from soil and inhalation of volatiles migrating to outdoor air from soil.
- Potential exposure of current and future commercial/occupational workers via inhalation of volatile compounds in indoor and outdoor air from soil.
  - Commercial workers at the Site are currently limited to Plaid store workers and workers at the adjacent carry-out pizza restaurant. Plaid store workers are excluded from Ecology's vapor intrusion considerations due to ongoing fueling operations (Ecology 2009).
  - Soil gas assessment conducted in 2012 indicates gasoline-related vapors appear limited to the source area and are unlikely to approach the current Property building or identified underground utility features at concentrations exceeding published screening criteria.

These exposure pathways will be considered in development of preliminary cleanup levels.

6 PRELIMINARY CLEANUP STANDARDS

6.1 PRELIMINARY SOIL CLEANUP STANDARDS

Based on our understanding of Site conditions and in accordance with the CSM, we anticipate future development of site-specific Modified Method B soil cleanup levels. Lines of evidence in support of Modified Method B consideration include:

- Site gasoline impacts have been delineated and are limited to a localized pocket of shallow soil.
- Current and reasonably likely future land use at the Property is commercial.
- Groundwater is present at depths exceeding 50 feet and is not expected to be affected by gasoline release(s) originating at the Property.
- Gasoline vapors do not exceed vapor intrusion screening levels near the existing Property building.
- The operating SVE system provides source-area vapor control and mitigation.

Since Modified Method B cleanup levels have not yet been developed or evaluated with Ecology however, the default MTCA Method A Soil cleanup levels for unrestricted land use are protective and can be used for preliminary reference. Table A provided below includes the default MTCA Method A cleanup levels for indicator compounds detected in soil at the Site. The source of the listed cleanup levels is Table 740-1 in WAC 173-340-900.

Table A: MTCA Method A Soil Cleanup Levels for Gasoline Contamination

PARAMETER	CLEANUP LEVEL (mg/kg)
Individual Substances	
Benzene	0.03
Ethylbenzene	6
MTBE	0.1
Naphthalene	5
Toluene	7
Xylenes	9
Total Petroleum Hydrocarbons	
Gasoline Range Organics	30

6.1.1 NON-GASOLINE IMPACTS

Although PCE and other non-gasoline solvents were measured among soil vapors during the Site investigation, these solvents were not identified in residual tank contents or among confirmatory post-excavation soil samples collected from areas surrounding the former fuel tank or elsewhere at the Site (EES 2012, 2013). The source(s) and distribution of solvents have not been confirmed. PCE and other non-gasoline VOCs detected in soil vapor samples are typically associated with dry cleaning, degreasing, paint stripping, and other commercial/industrial activities that are inconsistent with operation of the Plaid retail gasoline fueling facility.

Site investigation data indicate the greatest PCE concentrations were measured at shallow soil vapor extraction wells SVE-3 and SVE-5, located near the former UST area where gasoline impacts are also greatest in magnitude, and where active SVE is occurring to address known gasoline impacts. Soil vapor extraction is effective and commonly used to treat a wide range of volatile contaminants including PCE and other solvent compounds that have also been identified near the Plaid gasoline source area. Although the origin of non-gasoline VOCs is not attributed to Plaid's operations, the use of SVE to treat gasoline will also reduce the mass of other volatile constituents and mitigate vapor migration concerns for these contaminants within the treatment area. However, Plaid has not committed to remedy non-gasoline VOC impacts except as a beneficial effect resulting from the gasoline cleanup.

6.2 POINTS OF COMPLIANCE

The soil point of compliance is the point or points where the soil cleanup levels for gasoline identified in Section 6.1 above shall be attained. A soil point of compliance has been

determined in accordance with the regulatory requirements contained within WAC 173-340-740(6). As required under MTCA Method A, the preliminary soil point of compliance applicable at the site is based upon protection of groundwater. However, since groundwater is excluded as a medium of concern, two clarifications are necessary:

- Soil cleanup levels based on human exposure via direct contact are limited to the zone within 15 feet of the ground surface (Ecology 2013).
- Plaid and EES expect to revise the points of compliance during future evaluation of Modified Method B criteria since vapor intrusion and leaching to groundwater are not complete routes of exposure for the Site.

6.3 TERRESTRIAL ECOLOGICAL EVALUATION

A simplified terrestrial ecological evaluation process is outlined in WAC 173-340-7492, and is intended to identify those sites which do not have a substantial potential for posing a threat of significant adverse effects to terrestrial ecological receptors. Technical Assessment Services, Inc. completed an exposure analysis utilizing Table 749-1, which is referenced in WAC 173-340-7492(2)(a)(ii). A copy of this TEE report is included in Appendix C. Based upon the exposure analysis, we determined that land use at the Property and surrounding areas makes substantial wildlife exposure unlikely. Based upon this analysis, terrestrial ecological receptor exposure is unlikely and no adjustment to cleanup values to protect terrestrial ecological receptors is necessary.

7 SVE SYSTEM INSTALLATION, OPERATION, AND MONITORING

Plaid and EES developed an interim remedial action plan that is intended to provide gasoline mass removal from source area vadose-zone soil using established soil vapor extraction technology (EES 2013). SVE operations also control source-area vapor migration and the system's modular design allows for flexibility with regard to future modification and expansion as necessary. Ecology recently indicated that Site characterization is sufficient and the SVE system design is appropriate for addressing known contamination (Ecology 2013).

Section 7 of this report describes system installation and performance as evaluated during an initial operational period (September through early December 2013). The remedial system continues to operate at this time. Remediation system layout is illustrated schematically on Figure 8.

7.1 SYSTEM INSTALLATION

Based on preliminary SVE pilot testing conducted in October 2012 and as approved by Plaid, EES implemented the Interim Remedial Action Work Plan (EES 2013). Soil vapor extraction system construction was performed between July 31 and August 20, 2013. The system began initial operation on August 21, 2013 after City of Vancouver permit inspections were complete.

7.1.1 SYSTEM COMPONENTS

In order to route the underground vacuum piping, a northeast-southwest trunk-line was trenched between the SVE well array near the fuel dispenser island and the system mechanical equipment compound located east of the Plaid store building (Figure 8). Underground conduits were extended to each of the individual SVE well points. Six additional blank conduits (three lines to each of two access vaults) were installed in the trunk-line to allow for possible future modifications if needed.

Each individual soil vapor extraction leg is equipped with a gate valve, vacuum and vapor sampling port, and removable plug for measuring air velocity. SVE legs are routed into a 3-inch diameter manifold connected to the system mechanical equipment.

Extracted hydrocarbon vapors from the well manifold pass through an air-water separator "knockout" tank fitted with an inlet dilution valve. A two horsepower regenerative SVE blower rated for maximum airflow of 60 cubic feet per minute (cfm) at a maximum of 50 inches of water column vacuum is connected to the knockout tank. System vapors from the SVE blower pass through a heat exchanger to lower the process temperature for improved treatment efficiency by the granular activated carbon (GAC) exhaust filter media. A "make-up" blower is connected downstream of the heat exchanger to overcome the back pressure from the twin 2,000 pound GAC vessels used for air/vapor treatment. The system is operated under an air discharge permit issued by the Southwest Clean Air Agency.

7.2 INITIAL OPERATION AND MONITORING

Remedial system performance data were evaluated frequently during the first three months of pilot operations (September 2013 through early December 2013). In an effort to optimize system performance, regular operational modifications and adjustments were made on a weekly basis in response to observed performance. SVE performance monitoring data is summarized below, in Tables 3 and 5 through 8, and on graphs presented in Appendix D. Laboratory analytical data is presented in Appendix E, and the general system configuration is illustrated on Figure 8.

- The system has operated continuously and without any major problems since 9/4/13.
- Air flow rates achieved from shallow wells SVE-1, -3, and -5 (screened at about five to 10 feet depth in the fine silts) are greater than expected based on October 2012 pilot data, and currently range from 10 to 37 cfm, with a system total of approximately 60 to 80 cfm, depending on vacuum. Gasoline concentrations have diminished since system startup but remain relatively high at source area wells SVE-1 and SVE-3 (2,000,000 and 160,000 ug/m^3, respectively). However, total system extracted gasoline vapor concentrations (ranging from 24,000 to 160,000 ug/m^3) are lower than expected (Tables 3 and 5). As a result, the overall gasoline mass extraction rate is lower than what was predicted in the system design (see below). In December 2013, vapor concentrations for gasoline constituents exceeded regulatory soil gas screening criteria by one to three orders of magnitude

(Table 3), indicating the presence of residual gasoline mass likely exceeding MTCA cleanup criteria and a need for continued SVE operations.

- Shallow wells SVE-1 and SVE-3 produced the majority of gasoline mass during startup and concentrations have decreased as expected after three months of operation (Tables 6 and 7). These two shallow wells represent the likely gasoline source area or core. Concentrations at the remaining three wells were relatively low initially and decreased through the operational period.The total gasoline mass extraction rate is declining slowly as expected, and has decreased from approximately 1.4 pounds per day during startup to about 0.3 pounds per day during the sampling event on December 4, 2013.
- During system operations, pre-treatment chlorinated VOCs were observed among extracted vapors at three well locations, with PCE as a primary non-gasoline related constituent measured at concentrations up to 3,600 ug/m^3. The greatest PCE concentration was observed in December 2013 at well SVE-4. Although PCE and other VOCs are expected to be present among vapors extracted at gasoline source area well SVE-1 based on pilot testing data, vapors at this well location are dominated by very high gasoline concentrations (2,000,000 ug/m^3 in December 2013) that cause elevated laboratory quantitation limits and problems discerning other compounds including PCE. The source(s) of non-gasoline VOC impacts at the Site are not known but are not expected to be related to Plaid's current or former operations. However, SVE is an effective control and provides a measure of VOC mass reduction where implemented at the Property.
- Field measurements using a photoionization detector (PID) are collected from each of the five SVE wells during routine site visits (Table 5). These PID-measured vapor concentrations are generally consistent with laboratory analyses and support the following conclusions:
  - Based on these PID data, it appears that only wells SVE-1 and (to a lesser extent) SVE-3 have consistently produced appreciable extraction gasoline mass. The PID readings and flow rates at each well during the test period are presented in Graphs 1 through 5 (Appendix D).
  - The relatively low mass extraction rate from well SVE-3 (located in contaminated soil directly under the former tank which was removed in early 2012) likely suggests some preferential air flow is occurring from the coarse-grained tank pit backfill material located just above the well screen.
  - PID levels at individual SVE wells did not increase or "rebound" after brief periods of closing off each well leg, with the exception of well SVE-3 after a 12-day inactive period from 11/1/13 to 11/13/13 (Graph 3). This response suggests that "cycling" the lateral for well SVE-3 may improve mass extraction from the tank pit backfill area, but does not appear to be needed for wells screened in the fine-grained native soils.
- The system's zone of shallow vapor extraction influence adequately covers the area of known soil impacts on the Property, based on vacuum response measurements conducted during system startup and again after two months of continuous operation (Table 8). The radius of SVE influence observed among shallow wells was approximately 6 to 10 feet. Among the two deeper SVE wells screened at 15 to 20

feet, the radius of influence was approximately 15 feet. Although no SVE or vapor monitoring wells are located south of the Property boundary, available data indicate contaminated soil in this area is not likely to be affected or treated by the existing Plaid SVE system.

- Granular Activated Carbon (GAC) is used for air/vapor exhaust treatment prior to discharge to the atmosphere. The GAC is effective at mitigating vapor concentrations to levels below permitted air emissions discharge criteria. The GAC consumption rate is lower than expected but remains significant.

7.3 CONTINUED SYSTEM OPERATIONS

- SVE remedial actions are effective with regard to source-area gasoline and VOC mass removal and subsurface vapor control. Based on system performance observed during the initial three months of operation, continued system operations are necessary to address known source area gasoline soil impacts. Gasoline impacts extending south of the Property boundary are unlikely to be treated or mitigated by the current SVE array.
- Continued SVE exhaust treatment is necessary in accordance with the air discharge permit. Although GAC is effective and recommended for continued use, the declining mass extraction rates observed indicate that the 2,000-pound capacity GAC vessels can be downsized to smaller units which will reduce monthly operating costs while still meeting the air emissions treatment requirements. The GAC media was exhausted in early January 2014 and has been replaced by two smaller carbon vessels (200-pound GAC capacity each). The spent GAC media is temporarily stored on the Property and being characterized and profiled for disposal. Disposal documentation will be provided to Plaid when available.
- Continued system mechanical equipment needs will be evaluated with Plaid.

7.4 SYSTEM EXPANSION CONSIDERATIONS

Initial findings indicate that the current SVE well configuration is effective and mitigates known source-area gasoline contamination on the subject property, although a deeper well near the SVE-3 location may be appropriate to address soil impacts below the former small tank location. Additional SVE well(s) may be considered if it is determined that gasoline impacts extending under a portion of Fourth Plain Boulevard require control and/or treatment. Based on the Conceptual Site Model, Modified Method B cleanup levels may be appropriate for this Site and this issue should be evaluated with Plaid and Ecology before significantly modifying system operations.

8 LIMITATIONS

EES has prepared this report for use by Plaid Pantries and its agents. This report may be made available to other parties and to regulatory agencies at the discretion of Plaid. This report is not intended for use by others and the information contained herein is not applicable to other sites.

Our interpretation of subsurface conditions is based on field observations and chemical analytical data within the areas explored. Areas with contamination may exist in portions of the Site that were not explored or analyzed.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted practices and laws, rules, and regulations at the time that the report was prepared. No other conditions, expressed or implied, should be understood.

EES ENVIRONMENTAL CONSULTING, INC.

R. Brad Thoms, PE
Project Engineer, ALTUS Environmental

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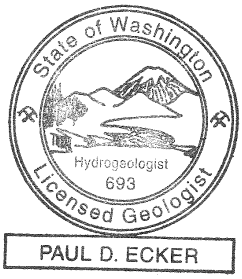
Principal Geologist



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Tables

TABLE 1
Soil Analytical Results - Gasoline, Diesel, and Related Constituents (mg/kg)
Plaid Pantry No. 112
Vancouver, Washington

Location	Date	Sample Depth (feet)	Gasoline	Diesel	Heavy Oil/Lube	Benzene	Toluene	Ethylbenzene	Xylenes	EDB	EDC	MTBE	Naphthalene	Lead	PCE	TCE	2-Butanone	Carbon Tetrachloride	1,1,1-Trichloroethane
MTCA Method A[c] Soil Cleanup Levels Unrestricted Use			100,30[d]	2,000	2,000	0.03	7	6	9	0.005	NA	0.1	5	250	0.05	0.03	NA	NA	2
B1-3	09/08/2011	3	24 U	59 U	118 U	0.01 U	0.04 U	0.02 U	0.07 U	0.02 U	0.02 U	0.04 U	0.09 U	-	0.02 U	0.02 U	0.44 U	0.02 U	0.02 U
B1-9	09/08/2011	9	22 U	54 U	108 U	0.01 U	0.05 U	0.03 U	0.08 U	0.03 U	0.03 U	0.05 U	0.10 U	8.3	0.03 U	0.03 U	0.51 U	0.03 U	0.03 U
B1-15	09/08/2011	15	21 U	52 U	103 U	0.01 U	0.05 U	0.03 U	0.08 U	0.03 U	0.03 U	0.05 U	0.10 U	-	0.03 U	0.03 U	0.52 U	0.03 U	0.03 U
B2-3	09/07/2011	3	21 U	53 U	107 U	0.01 U	0.04 U	0.02 U	0.06 U	0.02 U	0.02 U	0.04 U	0.09 U	-	0.02 U	0.02 U	0.43 U	0.02 U	0.02 U
B2-9	09/07/2011	9	25 U	25 U[b1]	54 [b1]	0.01 U	0.04 U	0.02 U	0.05 U	0.02 U	0.02 U	0.04 U	0.01 U[f]	-	0.02 U	0.02 U	0.35 U	0.02 U	0.02 U
B2-15	09/09/2011	15	21 U	53 U	105 U	0.01 U	0.03 U	0.01 U	0.04 U	0.01 U	0.01 U	0.03 U	0.05 U	-	0.01 U	0.01 U	0.27 U	0.01 U	0.01 U
B3-3	09/07/2011	3	23 U	57 U	113 U	0.01 U	0.05 U	0.02 U	0.07 U	0.02 U	0.02 U	0.05 U	0.09 U	-	0.02 U	0.02 U	0.47 U	0.02 U	0.02 U
B3-9	09/07/2011	9	26 U	64 U	128 U	0.01 U	0.06 U	0.03 U	0.08 U	0.03 U	0.03 U	0.06 U	0.11 U	12	0.03 U	0.03 U	0.55 U	0.03 U	0.03 U
B4-3	09/07/2011	3	23 U	57 U	114 U	0.01 U	0.05 U	0.03 U	0.08 U	0.03 U	0.03 U	0.05 U	0.10 U	-	0.03 U	0.03 U	0.51 U	0.03 U	0.03 U
B4-9	09/07/2011	9	21 U	53 U	106 U	0.01 U	0.05 U	0.02 U	0.07 U	0.02 U	0.02 U	0.05 U	0.10 U	-	0.02 U	0.02 U	0.49 U	0.02 U	0.02 U
B5-3	09/08/2011	3	22 U	56 U	112 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B5-6	09/08/2011	6	**2,900** [a]	>57 [e]	114 U	0.28 U	1.12 U	**12**	**74**	0.56 U	0.56 U	1.1 U	**14**	21	0.56 U	0.56 U	11 U	0.56 U	0.56 U
B5-9	09/08/2011	9	**4,070** [a]	>54 [e]	108 U	0.24 U	0.95 U	**29**	**121**	0.48 U	0.48 U	0.95 U	**8.8**	11	0.48 U	0.48 U	9.5 U	0.48 U	0.48 U
B5-12.5	09/08/2011	12.5	**444** [a]	638 [b,e]	50 U[b]	**2.1**	0.13 U	5.3	**21**	0.06 U	0.06 U	0.13 U	1.1	13	0.06 U	0.06 U	1.26 U	0.06 U	0.13 U
B5-20	09/08/2011	20	2.9 U[a]	-	-	0.01 U	0.03 U	0.01 U	0.04 U	0.01 U	0.01 U	0.03 U	0.06 U	-	0.01 U	0.01 U	0.29 U	0.01 U	0.01 U
B6-3	09/08/2011	3	22 U	54 U	107 U	0.01 U	0.04 U	0.02 U	0.06 U	0.02 U	0.02 U	0.04 U	0.08 U	-	0.02 U	0.02 U	0.38 U	0.02 U	0.02 U
B6-9	09/08/2011	9	23 U	58 U	116 U	0.01 U	0.04 U	0.02 U	0.06 U	0.02 U	0.02 U	0.04 U	0.07 U	-	0.02 U	0.02 U	0.37 U	0.02 U	0.02 U
B6-12	09/09/2011	12	26 U	64 U	128 U	0.01 U	0.04 U	0.02 U	0.07 U	0.02 U	0.02 U	0.04 U	0.09 U	-	0.02 U	0.02 U	0.44 U	0.02 U	0.02 U
SVE-1/5.0	02/03/2012	5	22 U	55 U	110 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SVE-1/10.0	02/03/2012	10	**2,750** [a]	>56.1 [e]	112 U	**0.39**	**48**	**40**	**301**	0.19 U	0.16 U	0.62 U	**13**	7.6	0.31 U	0.31 U	6.2 U	0.31 U	0.31 U
PIT S/1.5	02/14/2012	1.5	23 U	25 U[b]	116 [b]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tank Sludge	02/14/2012	N/A	**2,410** [a]	172 U[e]	345 U	**0.04** J	1.9	2.7	**19**	0.090 U	0.090 U	0.19 U	**7.1** [g]	-	0.09 U	0.09 U	2.8 U	0.09 U	0.09 U
PIT N/2	02/14/2012	2	21 U	52 U	104 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PIT N/6	02/14/2012	6	8.7 U[a]	57 [e]	113 U	0.02 U	0.09 U	0.04 U	0.14	0.04 U	0.04 U	0.09 U	0.17 U	-	0.04 U	0.04 U	0.87 U	0.04 U	0.04 U
PIT S/2	02/14/2012	2	**1,320** [a]	54 [e]	109 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PIT S/6	02/14/2012	6	**5,800** [a]	62 [e]	124 U	**3.4**	**23**	**78**	**411**	0.81 U	0.81 U	1.6 U	**34**	-	0.81 U	0.81 U	16 U	0.81 U	0.81 U
PIT E/2	02/14/2012	2	24 U	60 U	120 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PIT E/6	02/14/2012	6	**64,200** [a]	62 [e]	123 U	**93**	**3,570**	**1,350**	**9,090**	6.5 U	6.5 U	13 U	**241**	-	6.5 U	6.5 U	182 U	6.5 U	6.5 U
PIT W/2	02/14/2012	2	**1,210** [a]	59 [e]	118 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PIT W/6	02/14/2012	6	**18,700** [a]	61 [e]	122 U	**26**	**572**	**296**	**1,693**	1.6 U	1.6 U	3.2 U	**67**	-	1.6 U	1.6 U	48 U	1.6 U	1.6 U
PIT Floor/6	02/14/2012	6	**34,900** [a]	**2,660** [b]	81 U[b]	**56**	**1,460**	**609**	**3,605**	0.81 U	0.81 U	1.6 U	**27** [g]	-	0.81 U	0.81 U	105 U	0.81 U	0.81 U

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Plaid Pantry No. 112
Vancouver, Washington

Location	Date	Sample Depth (feet)	Gasoline	Diesel	Heavy Oil/Lube	Benzene	Toluene	Ethylbenzene	Xylenes	EDB	EDC	MTBE	Naphthalene	Lead	PCE	TCE	2-Butanone	Carbon Tetrachloride	1,1,1-Trichloroethane
MTCA Method A[c] Soil Cleanup Levels Unrestricted Use			100,30[d]	2,000	2,000	0.03	7	6	9	0.005	NA	0.1	5	250	0.05	0.03	NA	NA	2
B-7/6	08/16/2012	6	**473** [a]	-	-	0.21 U	0.86 U	2.1	**12**	0.01 U[g]	0.43 U	0.86 U	1.7 U	-	0.43 U	0.43 U	8.6 U	0.43 U	0.43 U
B-7/9	08/16/2012	9	**1,730** [a]	-	-	0.80	0.82 U	0.89	1.2 U	0.41 U	0.41 U	0.82 U	1.6 U	-	0.41 U	0.41 U	8.2 U	0.41 U	0.41 U
B-7/13	08/16/2012	13	**303** [a]	-	-	0.15	0.09 U	0.17	0.25	0.01 U[g]	0.04 U	0.09 U	0.30	-	0.04 U	0.04 U	0.89 U	0.04 U	0.04 U
B-7/14	08/16/2012	14	5.8 U [a]	-	-	0.01 U	0.06 U	0.03 U	0.09 U	0.01 U[g]	0.03 U	0.06 U	0.12 U	-	0.03 U	0.03 U	0.58 U	0.03 U	0.03 U
B-8/6	08/16/2012	6	8.4 U [a]	-	-	0.03	0.08 U	0.07	0.30	0.01 U[g]	0.04 U	0.08 U	0.17 U	-	0.04 U	0.04 U	0.84 U	0.04 U	0.04 U
B-8/9	08/16/2012	9	7.4 U [a]	-	-	0.04	0.07 U	0.04 U	0.25	0.04 U	0.04 U	0.07 U	0.15 U	-	0.04 U	0.04 U	0.74 U	0.04 U	0.04 U
B-8/13	08/16/2012	13	8.9 U [a]	-	-	0.02 U	0.09 U	0.04 U	0.13 U	0.01 U[g]	0.04 U	0.09 U	0.18 U	-	0.04 U	0.04 U	0.88 U	0.04 U	0.04 U
B-9/3	08/13/2012	3	5.7 U[a]	59 U	117 U	0.01 U	0.06 U	0.03 U	0.09 U	0.03 U	0.03 U	0.06 U	0.11 U	-	0.03 U	0.03 U	0.57 U	0.03 U	0.03 U
B-9/6	08/13/2012	6	5.2 U[a]	-	-	0.01 U	0.05 U	0.03 U	0.08 U	0.03 U	0.03 U	0.05 U	0.10 U	-	0.03 U	0.03 U	0.52 U	0.03 U	0.03 U
B-9/9	08/13/2012	9	8.2 U[a]	-	-	0.02 U	0.08 U	0.04 U	0.12 U	0.04 U	0.04 U	0.08 U	0.16 U	-	0.04 U	0.04 U	0.82 U	0.04 U	0.04 U
B-9/13	08/13/2012	13	5.9 U[a]	-	-	0.01 U	0.06 U	0.03 U	0.09 U	0.03 U	0.03 U	0.06 U	0.12 U	-	0.03 U	0.03 U	0.59 U	0.03 U	0.03 U
B-10/3	08/13/2012	3	5.4 U[a]	55 U	109 U	0.01 U	0.05 U	0.03 U	0.08 U	0.03 U	0.03 U	0.05 U	0.11 U	-	0.03 U	0.03 U	0.54 U	0.03 U	0.03 U
B-10/6	08/13/2012	6	9.2 U[a]	-	-	0.02 U	0.09 U	0.05 U	0.14 U	0.05 U	0.05 U	0.09 U	0.18 U	-	0.05 U	0.05 U	0.92 U	0.05 U	0.05 U
B-10/9	08/13/2012	9	11 U[a]	-	-	0.03 U	0.11 U	0.06 U	0.17 U	0.06 U	0.06 U	0.11 U	0.22 U	-	0.06 U	0.06 U	1.1 U	0.06 U	0.06 U
B-10/13	08/13/2012	13	4.7 U[a]	-	-	0.01 U	0.05 U	0.02 U	0.07 U	0.02 U	0.02 U	0.05 U	0.09 U	-	0.02 U	0.02 U	0.47 U	0.02 U	0.02 U
B-10/18	08/13/2012	18	20 U	51 U	102 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-11/3	08/14/2012	3	13 [a]	56 U	113 U	0.02 U	0.07 U	0.03 U	0.10 U	0.03 U	0.03 U	0.07 U	0.14 U	-	0.03 U	0.03 U	0.68 U	0.03 U	0.03 U
B-11/6	08/14/2012	6	**20,400** [a]	62 X	123 U	**3.7**	0.81 U	3.9	1.6 U	0.41 U	0.41 U	0.81 U	**57**	24	0.41 U	0.41 U	8.1 U	0.41 U	0.41 U
B-11/9	08/14/2012	9	**1,560** [a]	-	-	**0.47**	0.10 U	0.62	0.14 U	0.05 U	0.05 U	0.10 U	1.9	-	0.05 U	0.05 U	2.7 U	0.05 U	0.05 U
B-11/11	08/14/2012	11	5.7 U[a]	-	-	0.01 U	0.06 U	0.03 U	0.09 U	0.01 U[g]	0.03 U	0.06 U	0.11 U	3.3	0.03 U	0.03 U	0.57 U	0.03 U	0.03 U
B-11/17	08/14/2012	17	5.6 U[a]	-	-	0.01 U	0.06 U	0.03 U	0.08 U	0.03 U	0.03 U	0.06 U	0.11 U	-	0.03 U	0.03 U	0.56 U	0.03 U	0.03 U
B-11/23	08/14/2012	23	20 U	51 U	102 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-11/29	08/14/2012	29	20 U	51 U	102 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-12/3	08/14/2012	3	5.2 U[a]	58 U	116 U	0.01 U	0.05 U	0.03 U	0.08 U	0.03 U	0.03 U	0.05 U	0.10 U	-	0.03 U	0.03 U	0.52 U	0.03 U	0.03 U
B-12/6	08/14/2012	6	8.1 U[a]	-	-	0.02 U	0.08 U	0.04 U	0.12 U	0.04 U	0.04 U	0.08 U	0.16 U	-	0.04 U	0.04 U	0.81 U	0.04 U	0.04 U
B-12/9	08/14/2012	9	9.6 U[a]	-	-	0.02 U	0.10 U	0.05 U	0.14 U	0.05 U	0.05 U	0.10 U	0.19 U	-	0.05 U	0.05 U	0.96 U	0.05 U	0.05 U
B-12/13	08/14/2012	13	8.1 U[a]	-	-	0.02 U	0.08 U	0.04 U	0.12 U	0.04 U	0.04 U	0.08 U	0.16 U	-	0.04 U	0.04 U	0.81 U	0.04 U	0.04 U
B-12/18	08/14/2012	18	20 U	50 U	100 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-13/3	08/15/2012	3	7.8 U[a]	-	-	0.02 U	0.08 U	0.04 U	0.12 U	0.04 U	0.04 U	0.08 U	0.16 U	-	0.04 U	0.04 U	0.78 U	0.04 U	0.04 U
B-13/6	08/15/2012	6	6.5 U[a]	-	-	0.02 U	0.06 U	0.03 U	0.10 U	0.03 U	0.03 U	0.06 U	0.13 U	-	0.03 U	0.03 U	0.65 U	0.03 U	0.03 U
B-13/9	08/15/2012	9	6.9 U[a]	-	-	0.02 U	0.07 U	0.03 U	0.10 U	0.03 U	0.03 U	0.07 U	0.14 U	-	0.03 U	0.03 U	0.69 U	0.03 U	0.03 U
B-13/13	08/15/2012	13	8.0 U[a]	-	-	0.02 U	0.08 U	0.04 U	0.12 U	0.04 U	0.04 U	0.08 U	0.16 U	-	0.04 U	0.04 U	0.80 U	0.04 U	0.04 U
B-14/3	08/15/2012	3	6.6 U[a]	-	-	0.02 U	0.07 U	0.03 U	0.10 U	0.03 U	0.03 U	0.07 U	0.13 U	-	0.03 U	0.03 U	0.66 U	0.03 U	0.03 U
B-14/6	08/15/2012	6	7.0 U[a]	-	-	0.02 U	0.07 U	0.04 U	0.11 U	0.04 U	0.04 U	0.07 U	0.14 U	-	0.04 U	0.04 U	0.70 U	0.04 U	0.04 U
B-14/9	08/15/2012	9	7.6 U[a]	-	-	0.02 U	0.08 U	0.04 U	0.11 U	0.04 U	0.04 U	0.08 U	0.15 U	-	0.04 U	0.04 U	0.76 U	0.04 U	0.04 U
B-14/13	08/15/2012	13	6.2 U[a]	-	-	0.02 U	0.06 U	0.03 U	0.09 U	0.03 U	0.03 U	0.06 U	0.13 U	-	0.03 U	0.03 U	0.62 U	0.03 U	0.03 U
B-15/3	08/15/2012	3	6.6 U[a]	-	-	0.02 U	0.07 U	0.03 U	0.10 U	0.03 U	0.03 U	0.07 U	0.13 U	-	0.03 U	0.03 U	0.66 U	0.03 U	0.03 U
B-15/6	08/15/2012	6	7.9 U[a]	-	-	0.02 U	0.08 U	0.04 U	0.12 U	0.04 U	0.04 U	0.08 U	0.16 U	-	0.04 U	0.04 U	0.79 U	0.04 U	0.04 U
B-15/9	08/15/2012	9	7.6 U[a]	-	-	0.02 U	0.08 U	0.04 U	0.11 U	0.04 U	0.04 U	0.08 U	0.15 U	-	0.04 U	0.04 U	0.76 U	0.04 U	0.04 U
B-15/13	08/15/2012	13	6.2 U[a]	-	-	0.02 U	0.06 U	0.03 U	0.09 U	0.03 U	0.03 U	0.06 U	0.12 U	-	0.03 U	0.03 U	0.62 U	0.03 U	0.03 U
B-16/6	08/16/2012	6	5.8 U[a]	-	-	0.01 U	0.06 U	0.03 U	0.09 U	0.01 U[g]	0.03 U	0.06 U	0.17 U	11	0.03 U	0.03 U	0.58 U	0.03 U	0.03 U
B-16/9	08/16/2012	9	8.0 U[a]	-	-	0.02 U	0.08 U	0.04 U	1.2 U	0.04 U	0.04 U	0.08 U	0.16 U	12	0.04 U	0.04 U	0.80 U	0.04 U	0.04 U
B-16/13	08/16/2012	13	5.9 U[a]	-	-	0.01 U	0.06 U	0.03 U	0.09 U	0.01 U[g]	0.03 U	0.06 U	0.12 U	-	0.03 U	0.03 U	0.59 U	0.03 U	0.03 U

TABLE 1
Soil Analytical Results - Gasoline, Diesel, and Related Constituents (mg/kg)
Plaid Pantry No. 112
Vancouver, Washington

Location	Date	Sample Depth (feet)	Gasoline	Diesel	Heavy Oil/Lube	Benzene	Toluene	Ethylbenzene	Xylenes	EDB	EDC	MTBE	Naphthalene	Lead	PCE	TCE	2-Butanone	Carbon Tetrachloride	1,1,1-Trichloroethane
MTCA Method A[c] Soil Cleanup Levels																			
Unrestricted Use			100,30[d]	2,000	2,000	0.03	7	6	9	0.005	NA	0.1	5	250	0.05	0.03	NA	NA	2
SVE-2/8	08/16/2012	8	**6,800** [a]	-	-	**14**	**48**	**96**	**436**	0.45 U	0.45 U	0.90 U	**27**	11	0.45 U	0.45 U	9.0 U	0.45 U	0.45 U
SVE-2/12	08/16/2012	12	5.7 U[a]	-	-	0.01 U	0.06 U	0.03 U	0.09 U	0.01 U[g]	0.03 U	0.06 U	0.11 U	2.8	0.03 U	0.03 U	0.57 U	0.03 U	0.03 U
SVE-2/16	08/16/2012	16	7.0 U[a]	-	-	0.02 U	0.07 U	0.04 U	0.11 U	0.01 U[g]	0.04 U	0.07 U	0.14 U	-	0.04 U	0.04 U	0.70 U	0.04 U	0.04 U
SVE-2/20	08/16/2012	20	5.9 U[a]	-	-	0.01 U	0.06 U	0.03 U	0.09 U	0.03 U	0.03 U	0.06 U	0.12 U	-	0.03 U	0.03 U	0.59 U	0.03 U	0.03 U
SVE-3/5	08/16/2012	5	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	-	-
SVE-3/8	08/16/2012	8	**3,820** [a]	-	-	**6.5**	**117**	**70**	**389**	0.60 U	0.60 U	1.2 U	**16**	10	0.60 U	0.60 U	12 U	0.60 U	0.60 U
SVE-3/12.5	08/16/2012	12.5	**216** [a]	-	-	**1.5**	4.8	3.9	**21**	0.01 U[g]	0.36 U	0.72 U	1.4 U	-	0.36 U	0.36 U	7.2 U	0.36 U	0.36 U
SVE-3/14	08/16/2012	14	6.3 U[a]	-	-	0.02 U	0.06 U	0.03 U	0.09 U	0.01 U[g]	0.03 U	0.06 U	0.13 U	-	0.03 U	0.03 U	0.63 U	0.03 U	0.03 U
SVE-3/20	08/16/2012	20	6.0 U[a]	-	-	0.01 U	0.06 U	0.03 U	0.09 U	0.03 U	0.03 U	0.06 U	0.12 U	-	0.03 U	0.03 U	0.60 U	0.03 U	0.03 U
SVE-4/6	08/16/2012	6	8.1 U[a]	-	-	0.02 U	0.08 U	0.04 U	0.12 U	0.01 U[g]	0.04 U	0.08 U	0.16 U	-	0.04 U	0.04 U	0.81 U	0.04 U	0.04 U
SVE-4/9	08/16/2012	9	**97** [a]	-	-	0.02	0.07 U	0.30	0.58	0.04 U	0.04 U	0.07 U	1.4	-	0.04 U	0.04 U	0.72 U	0.04 U	0.04 U
SVE-4/11	08/16/2012	11	**54** [a]	-	-	0.03	0.15	0.82	1.5	0.01 U[g]	0.04 U	0.08 U	1.4	-	0.04 U	0.04 U	0.76 U	0.04 U	0.04 U
SVE-4/14	08/16/2012	14	6.0 U[a]	-	-	0.02 U	0.06 U	0.03 U	0.09 U	0.01 U[g]	0.03 U	0.06 U	0.12 U	-	0.03 U	0.03 U	0.60 U	0.03 U	0.03 U
SVE-5/5	08/16/2012	5	6.1 U[a]	-	-	0.02 U	0.06 U	0.03 U	0.09 U	0.01 U[g]	0.03 U	0.06 U	0.12 U	7.5	0.03 U	0.03 U	0.61 U	0.03 U	0.03 U
SVE-5/7.5	08/16/2012	7.5	**793** [a]	-	-	**0.15**	**9.0**	**7.4**	**57**	0.16 U	0.16 U	0.32 U	**21**	11	0.16 U	0.16 U	3.2 U	0.16 U	0.16 U

Notes:
Gasoline, Diesel, and Heavy Oil/Lube by Method by NWTPH-HCID unless otherwise noted.
Volatiles by EPA Method 8260B
[a] Gasoline by Method NWTPH-Gx/EPA 8260B
[b] Diesel and Heavy Oil/Lube by Method NWTPH-Dx
[b1] Diesel and Heavy Oil/Lube by Method NWTPH-Dx with silica-gel cleanup
[c] Model Toxics Control Act (MTCA) Cleanup Amendments, Method A Soil Cleanup Levels (WDOE, October 12, 2007)
[d] Per MTCA, the cleanup value for gasoline is 30 mg/kg if benzene is detected and/or if the sum of the toluene, ethylbenzene, and xylenes is greater than one percent of the gasoline concentration, and 100 mg/kg for all other gasoline mixtures.
[e] Results in the diesel organics range are due to overlap from a gasoline range product.
[f] Naphthalene analyzed by EPA Method 8270D SIM. No detections were reported for any of the PAH compounds.
[g] 1,2-Dibromoethane (EDB) analyzed by EPA 8260B SIM.
MTBE = Methyl tert-butyl ether
EDB = 1,2-Dibromoethane
EDC = 1,2-Dichloroethane
PCE = Tetrachloroethene
TCE = Trichloroethene
mg/kg = milligrams per kilogram
U = Undetected at method limit shown
J = Estimated value. Result was below the method reporting limit, but above the method detection limit.
X = The detection in the diesel range is due to overlap from a gasoline range product.
- = Not analyzed for this parameter
Values in bold indicate compound was detected at a concentration exceeding the most stringent MTCA Method A standard

TABLE 2
Water Analytical Results - Gasoline, Diesel, and Related Constituents (ug/L)
Plaid Pantry No. 112
Vancouver, Washington

Location	Date	Gasoline	Diesel	Heavy Oil	Benzene	Toluene	Ethylbenzene	Xylenes	EDB	EDC	MTBE	Naphthalene	PCE	TCE	2-Butanone	Carbon Tetrachloride	1,1,1-Trichloroethane
UST-Water	02/14/2012	94 x	455	374 U	0.25 U	1 U	0.5 U	1.5 U	0.5 U	0.5 U	1 U	0.104 [c]	0.5 U	0.5 U	10 U	0.5 U	0.5 U
MTCA Method A Cleanup Levels[a]		800/1,000[b]	500	500	5.0	1,000	700	1,000	0.01	5.0	20	160	5	5	NA	NA	200

Notes:

[a] Washington Department of Ecology Model Toxics Control Act Cleanup Amendments, Method A Groundwater Cleanup Levels For Groundwater, Table 720-1 (WDOE, October 12, 2007)

[b] MTCA Method A cleanup level for gasoline is 1,000 ug/L if no benzene is detected; cleanup level is 800 ug/L if benzene is detected

[c] Naphthalene analyzed by EPA Method 8270 SIM

Gasoline by Method NWTPH-Gx
Diesel and Heavy Oil by Method NWTPH-Dx
Volatile Compounds by EPA Method 8260B (except as otherwise noted)
ug/L = Micrograms per liter
EDB = 1,2-Dibromoethane
EDC = 1,2-Dichloroethane
PCE = Tetrachloroethene
TCE = Trichloroethene
U = Undetected at method limit shown
NA = not applicable
x = Laboratory flag: The detection in the gasoline range is due to overlap from a heavier fuel hydrocarbon product.

Table 3
Soil Vapor Analytical Results - Volatile Organic Compounds (µg/m^3)
Plaid Pantry No. 112
Vancouver, Washington

Location	Date	Gasoline	Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	EDB	EDC	MTBE	Naphthalene	PCE	TCE	2-Butanone	Carbon Tetrachloride	1,1,1-Trichloroethane
WDOE Soil Gas Screening Levels[a]																
	Method B	-	3.2/32	7	4,600/46,000	460/4,600[b]	460/4,600	0.11/1.1	0.96/9.6	96/960	14/140	4.2/42	1/10	NA	1.7/17	48,000/480,000
	Method C	-	32/320	49,000/490,000	10,000/100,000	1,000/10,000[b]	1,000/10,000	1.1/11	9.6/96	960/9,600	30/300	42/420	10/100	NA	17/170	110,000/1,100,000
August 2012 Soil Vapor Sampling																
S-1	08/14/2012	-	**6.1**	50	9.6	37	12	1.3 U	0.68 U	0.60 U	4.4	3.7	0.90 U	30	**3.8**	0.92 U
S-2	08/15/2012	-	**8.7**	72	31	120	43	1.2 U	0.65 U	0.58 U	4.4	**32**	0.86 U	52	**10**	0.88 U
S-3	08/15/2012	-	**3.8**	18	2.6	8.2	3.3	1.2 U	0.62 U	0.55 U	4.4	**28**	0.82 U	16	**8.4**	0.83 U
S-4	08/14/2012	-	**10**	130	49	180	66	1.2 U	0.63 U	0.56 U	6.2	2.5	0.83 U	38	0.98 U	0.84 U
S-5	08/17/2012	-	**82,000**	**860,000**	**210,000**	**900,000**	**340,000**	2,000 U	1,100 U	950 U	5,500 U	**2,200**	1,400 U	3,100 U	1,600 U	1,400 U
S-6	08/14/2012	-	2.9	11	2.0	6.6	2.6	1.4 U	0.74 U	0.66 U	4.8 U	1.7	0.98 U	33	1.2 U	1.0 U
S-7	08/16/2012	-	**7.7**	14	3.1	9.0	5.0	1.3 U	0.71 U	0.63 U	**19**	2.0	0.94 U	32	1.1 U	0.95 U
S-8	08/17/2012	-	**7,900**	**220,000**	**86,000**	**340,000**	**160,000**	1,000 U	530 U	470 U	**7,700**	**2,500**	710 U	1,600 U	830 U	720 U
S-9	08/15/2012	-	2.1	8.1	1.7	6.0	2.5	1.3 U	0.66 U	0.59 U	4.3 U	**6.8**	0.88 U	16	1.2	0.89 U
S-10	08/14/2012	-	1.7	7.0	1.8	7.1	2.6	1.1 U	0.59 U	0.53 U	6.4	**22**	0.78 U	19	0.92 U	0.80 U
S-11	08/14/2012	-	1.3	9.7	2.2	6.6	2.1	1.3 U	0.69 U	0.62 U	4.5 U	**100**	0.92 U	12	**3.5**	1.1
S-12	08/20/2012	-	**3,900**	**22,000**	1,400	**25,000**	**17,000**	120 U	65 U	75	340 U	**130**	17 U	47 U	20 U	17 U
S-13	08/15/2012	-	1.1	11	0.71	3.1	1.2	1.2 U	0.65 U	0.58 U	4.2 U	**230**	0.86 U	5.9	**52**	0.88 U
SVE-4	08/17/2012	-	**560**	12,000	**4,800**	**22,000**	**9,300**	130 U	66 U	59 U	**620**	**170**	88 U	190 U	100 U	89 U
October 2012 Pilot Test																
SVE-1 START	10/04/2012	59,000,000	**240,000**	**2,100,000**	**200,000**	**1,100,000**	**380,000**	14,000 U	7,300 U	6,500 U	-	12,000 U	9,700 U	21,000 U	11,000 U	9,800 U
SVE-1 STOP	10/04/2012	74,000,000	**330,000**	**3,400,000**	**490,000**	**2,800,000**	**1,000,000**	19,000 U	10,000 U	8,900 U	-	17,000 U	13,000 U	29,000 U	16,000 U	13,000 U
SVE-2 START	10/05/2012	20,000	**50**	**1,100**	230	**1,200**	460	91 U	48 U	43 U	-	**120**	64 U	140 U	75 U	65 U
SVE-2 STOP	10/05/2012	42,000	**36**	**1,300**	410	**3,000**	**1,200**	18 U	9.3 U	8.3 U	-	**130**	12 U	27 U	**18**	12 U
2013 System Monitoring																
SVE-1	08/22/2013	11,000,000	**97,000**	**350,000**	**15,000**	**82,000**	**25,000**	2,400 U	1,200 U	1,100 U	-	2,100 U	1,600 U	6,900	1,900 U	1,700 U
	12/04/2013	2,000,000	360 U	**2,000**	2,200	**62,000**	**31,000**	860 U	450 U	400 U	-	760 U	600 U	1,300 U	700 U	610 U
SVE-2	08/22/2013	250 U	3.9 U	4.6 U	5.3 U	5.3 U	5.3 U	9.4 U	5.0 U	4.4 U	-	**14**	6.6 U	290	7.7 U	6.7 U
SVE-3	08/22/2013	16,000	**55**	**15**	5.3 U	8.3	5.3 U	9.4 U	4.9 U	4.4 U	-	8.3 U	6.6 U	1,600 E	7.7 U	6.6 U
	12/04/2013	160,000	**72**	**720**	57	**730**	360	9.1 U	4.8 U	4.3 U	-	8.1 U	6.4 U	38	7.5 U	6.5 U
SVE-4	08/22/2013	250 U	3.9 U	4.6 U	5.3 U	5.3 U	5.3 U	9.4 U	5.0 U	4.4 U	-	**8.5**	6.6 U	450	7.7 U	6.7 U
	12/04/2013	53,000	15 U	**460**	21 U	21 U	21 U	36 U	19 U	17 U	-	**3,600**	26 U	56 U	30 U	26 U
SVE-5	08/22/2013	8,600	17 U	20 U	23 U	23 U	23 U	41 U	21 U	19 U	-	36 U	28 U	4,500	33 U	29 U
	12/04/2013	8,100	**19**	**640**	53	180	92	8.8 U	4.6 U	4.1 U	-	**18**	6.2 U	20	7.2 U	6.2 U
SVE Blower Inlet	08/22/2013	160,000	**2,100**	**2,100**	65	290	85	92 U	48 U	43 U	-	81 U	64 U	140 U	76 U	65 U
	09/27/2013	24,000	**95**	**92**	5.2	18	5.2 U	9.2 U	4.8 U	4.3 U	-	8.1 U	6.4 U	14 U	7.5 U	6.5 U
	11/01/2013	68,000	**200**	**1,200**	450	**2,200**	**630**	18 U	9.7 U	8.6 U	-	**300**	13 U	28 U	15 U	13 U
	12/04/2013	26,000	**12**	**1,500**	16	130	52	8.8 U	4.6 U	4.1 U	-	**1,200**	6.2 U	14 U	7.2 U	6.2 U
Post-GAC	08/22/2013	230 U	3.6 U	4.3 U	4.9 U	4.9 U	4.9 U	8.7 U	4.6 U	4.1 U	-	7.7 U	6.1 U	13	7.1 U	6.2 U
	12/18/2013	470	3.8 U	5.4	5.2 U	5.2 U	5.2 U	9.2 U	4.8 U	4.3 U	-	8.1 U	6.4 U	14 U	7.6 U	6.5 U

Table 3

Soil Vapor Analytical Results - Volatile Organic Compounds (µg/m^3)

Plaid Pantry No. 112

Vancouver, Washington

Notes:

[a] Washington Department of Ecology (WDOE) Soil Vapor Intrusion DRAFT Guidance, Method B and Method C Soil Gas Screening Levels (WDOE, October 2009)

[b] Screening levels for m-xylene

Volatiles by EPA Method TO-15

MTBE = Methyl tert-butyl ether

EDB = 1,2-Dibromoethane

EDC = 1,2-Dichloroethane

PCE = Tetrachloroethene

TCE = Trichloroethene

µg/m^3 = Micrograms per cubic meter

bold values indicate concentrations above a listed screening level

U = Undetected at method reporting limit shown

NA = not applicable

E = Estimated concentration. Result exceeds calibration range for the instrument.

- = not analyzed for this parameter

TABLE 4
Water Well Search
Plaid Pantry No. 112
Vancouver, Washington

well_log_id	nit_id_nr	well_depth_qt	well_diameter_qt	well_owner_nm	township_nr	range_nr	range_dir_cd	section_nr	qtr_section_cd	qtr_qtr_section_cd	well_comp_dt	county_nm	well_type_cd
WATER WELLS LOCATED MORE THAN 0.25-MILE FROM SITE													
237565	-	-	5	Boise Cascade	2	1	E	21	-	-	10/30/76	CLARK	W
237596	16601	-	-	Boise Cascade	2	1	E	21	NW	SW	08/16/89	CLARK	W
237541	D019750	40	12	City of Vancouver	2	1	E	21	SW	NW	09/10/96	CLARK	W
237590	D019750	40	12	City of Vancouver	2	1	E	21	SW	NW	09/10/96	CLARK	W
237597	24521	-	12	City of Vancouver	2	1	E	21	NW	SE	07/23/93	CLARK	W
237556	-	34	6	Elma Ruffner	2	1	E	21	-	-	04/03/87	CLARK	W
237564	-	34	6	Elma Ruffner	2	1	E	21	-	-	04/03/87	CLARK	W
237557	-	128	12	Federal Public Housing Authority	2	1	E	21	-	-	02/05/43	CLARK	W
237559	-	151	12	Federal Public Housing Authority	2	1	E	21	NW	NE	11/23/42	CLARK	W
237626	-	60	6	Lowell Harrison	2	1	E	22	SW	NE	06/23/78	CLARK	W
237628	-	225	6	Manfred B. Plikat	2	1	E	22	-	NE	07/08/76	CLARK	W
237612	27163	61	6	Merril Firstone	2	1	E	21	NW	NW	07/24/87	CLARK	W
237600	-	-	10	Norton Corrosion	2	1	E	21	SW	NE	12/30/87	CLARK	W
237558	-	130	18	Spokane, Portland & Seattle RY. Co.	2	1	E	21	NE	NE	-	CLARK	W
237598	-	95	8	The Carborundum Co.	2	1	E	21	-	-	-	CLARK	W
237601	-	105	8	The Carborundum Co.	2	1	E	21	-	-	-	CLARK	W
237602	-	95	8	The Carborundum Co.	2	1	E	21	-	-	-	CLARK	W
237627	-	-	-	Vancouver Memorial Hospital	2	1	E	22	NE	NW	-	CLARK	W
RESOURCE PROTECTION WELLS LOCATED MORE THAN 0.25-MILE FROM SITE													
717893	SE09231	175	5	Washington State Dept. of Transpor | Shannon & Wilson Inc.	2	1	E	51	NE	NE	03/07/11	CLARK	R
717893	SE09231	175	5	Washington State Dept. of Transpor | Shannon & Wilson Inc.	2	1	E	51	NE	NE	03/07/11	CLARK	R
877408	SE48693	30	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/09/13	CLARK	R
877410	RE08667	35	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/11/13	CLARK	R
877412	SE48693	35	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/10/13	CLARK	R
877414	SE48693	35	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/10/13	CLARK	R
877416	SE48693	40	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/09/13	CLARK	R
877418	SE48693	40	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/07/13	CLARK	R
877420	RE08667	40	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/11/13	CLARK	R
877422	SE48693	35	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/07/13	CLARK	R
877424	RE08667	30	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/11/13	CLARK	R
877426	SE48693	20	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/15/13	CLARK	R
877428	SE48693	20	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/15/13	CLARK	R
877430	RE08667	20	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/11/13	CLARK	R
877432	SE48693	20	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/15/13	CLARK	R
877434	SE48693	20	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/03/13	CLARK	R
877436	RE08667	20	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/11/13	CLARK	R
877438	RE08667	20	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/11/13	CLARK	R
877440	SE48693	20	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/03/13	CLARK	R
877442	SE48693	20	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/03/13	CLARK	R
878833	SE48693	20	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/03/13	CLARK	R
877408	SE48693	30	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/09/13	CLARK	R
877410	RE08667	35	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/11/13	CLARK	R
877412	SE48693	35	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/10/13	CLARK	R
877414	SE48693	35	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/10/13	CLARK	R
877416	SE48693	40	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/09/13	CLARK	R
877418	SE48693	40	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/07/13	CLARK	R

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well_log_id	nit_id_nr	well_depth_qt	well_diameter_qt	well_owner_nm	township_nr	range_nr	range_dir_cd	section_nr	qtr_section_cd	qtr_qtr_section_cd	well_comp_dt	county_nm	well_type_cd
RESOURCE PROTECTION WELLS LOCATED MORE THAN 0.25-MILE FROM SITE (cont'd)													
877420	RE08667	40	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/11/13	CLARK	R
877422	SE48693	35	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/07/13	CLARK	R
877424	RE08667	30	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/11/13	CLARK	R
877426	SE48693	20	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/15/13	CLARK	R
877428	SE48693	20	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/15/13	CLARK	R
877430	RE08667	20	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/11/13	CLARK	R
877432	SE48693	20	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/15/13	CLARK	R
877434	SE48693	20	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/03/13	CLARK	R
877436	RE08667	20	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/11/13	CLARK	R
877438	RE08667	20	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/11/13	CLARK	R
877440	SE48693	20	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/03/13	CLARK	R
877442	SE48693	20	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/03/13	CLARK	R
878833	SE48693	20	5	City Of Vancouver | Shannon & Wilson	2	1	E	51	NW	SW	07/03/13	CLARK	R
355061	R061515	25	2	Pacific Groundwater Group	2	1	E	22	SW	SW	01/27/03	CLARK	R
355062	R061515	5	2	Pacific Groundwater Group	2	1	E	22	SW	SW	01/27/03	CLARK	R
355063	R061515	5	2	Pacific Groundwater Group	2	1	E	22	SW	SW	01/27/03	CLARK	R
355061	R061515	25	2	Pacific Groundwater Group	2	1	E	22	SW	SW	01/27/03	CLARK	R
355062	R061515	5	2	Pacific Groundwater Group	2	1	E	22	SW	SW	01/27/03	CLARK	R
355063	R061515	5	2	Pacific Groundwater Group	2	1	E	22	SW	SW	01/27/03	CLARK	R
237550	R028571	-	-	Silgan Containers	2	1	E	21	SE	SE	10/28/97	CLARK	R
237551	R028571	-	-	Silgan Containers	2	1	E	21	SE	SE	10/28/97	CLARK	R
237552	R028571	-	-	Silgan Containers	2	1	E	21	SE	SE	10/28/97	CLARK	R
537214	S014076	40	2.25	Rainbow Glacier Inc.	2	1	E	21	SE	NE	04/17/08	CLARK	R
537220	S014076	40	2.25	Rainbow Glacier Inc.	2	1	E	21	SE	NE	04/17/08	CLARK	R
237571	27429	-	-	Burlington Northern Sante Fe	2	1	E	21	SE	SE	04/24/97	CLARK	R
59310	16429	-	-	Port of Vancouver	2	1	E	21	SE	SE	03/10/99	CLARK	R
237599	16429	-	-	Port of Vancouver	2	1	E	21	SE	SE	03/10/99	CLARK	R
537198	S014077	45	2.25	Sparkman Joseph Trustee	2	1	E	21	SE	NE	04/17/08	CLARK	R
537200	S014077	40	2.25	Sparkman Joseph Trustee	2	1	E	21	SE	NE	04/17/08	CLARK	R
537202	S014077	40	2.25	Sparkman Joseph Trustee	2	1	E	21	SE	NE	04/17/08	CLARK	R
537212	S014077	40	2.25	Sparkman Joseph Trustee	2	1	E	21	SE	NE	04/17/08	CLARK	R
237543	19918	-	-	Strebor - Vancouver	2	1	E	21	-	-	06/10/88	CLARK	R
237548	19918	-	-	Strebor - Vancouver	2	1	E	21	-	-	06/08/88	CLARK	R
237549	19918	-	-	Strebor - Vancouver	2	1	E	21	-	-	06/07/88	CLARK	R
237611	34905	-	-	Tetra Pak MATW	2	1	E	21	-	-	-	CLARK	R
395467	R061232	105	2	Port of Vancouver	2	1	E	21	SE	SW	09/29/04	CLARK	R
238063	26488	-	-	Clark County Substation	2	1	E	43	NE	SW		CLARK	R
688334	SE08290	90	1.5	Port of Vancouver | URS	2	1	E	57	NE	SW	11/15/10	CLARK	R
688336	SE08290	90	1.5	Port of Vancouver | URS	2	1	E	57	NE	SW	11/15/10	CLARK	R
688338	SE08290	99	1.5	Port of Vancouver | URS	2	1	E	57	NE	SW	11/15/10	CLARK	R
688340	SE08290	125	1.5	Port of Vancouver | URS	2	1	E	57	NE	SW	11/15/10	CLARK	R
688342	SE08290	120	1.5	Port of Vancouver | URS	2	1	E	57	NE	SW	11/15/10	CLARK	R
688344	SE08290	120	1.5	Port of Vancouver | URS	2	1	E	57	NE	SW	11/15/10	CLARK	R
688346	SE08290	113	1.5	Port of Vancouver | URS	2	1	E	57	NE	SW	11/15/10	CLARK	R
688348	SE08290	122	1.5	Port of Vancouver | URS	2	1	E	57	NE	SW	11/15/10	CLARK	R
688350	SE08290	128	1.5	Port of Vancouver | URS	2	1	E	57	NE	SW	11/15/10	CLARK	R

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well_log_id	unit_id_nr	well_depth_qt	well_diameter_qt	well_owner_nm	township_nr	range_nr	range_dir_cd	section_nr	qtr_section_cd	qtr_qtr_section_cd	well_comp_dt	county_nm	well_type_cd
RESOURCE PROTECTION WELLS LOCATED MORE THAN 0.25-MILE FROM SITE (cont'd)													
688352	SE08290	131	1.5	Port of Vancouver | URS	2	1	E	57	NE	SW	11/15/10	CLARK	R
688354	SE08290	107	1.5	Port of Vancouver | URS	2	1	E	57	NE	SW	11/15/10	CLARK	R
688356	SE08290	114	1.5	Port of Vancouver | URS	2	1	E	57	NE	SW	11/15/10	CLARK	R
688358	SE08290	117	1.5	Port of Vancouver | URS	2	1	E	57	NE	SW	11/15/10	CLARK	R
688360	SE08290	122	1.5	Port of Vancouver | URS	2	1	E	57	NE	SW	11/15/10	CLARK	R
445649	RE01506	30	2	Valero LP	2	1	E	54	NE	NE	06/09/06	CLARK	R
445650	RE01506	50	2	Valero LP	2	1	E	54	NE	NE	06/09/06	CLARK	R
238054	24319	-	-	Decommission Monitoring Wells	2	1	E	39	NW	SE	03/18/95	CLARK	R
238055	24319	-	-	Decommission Monitoring Wells	2	1	E	39	NW	SE	03/18/95	CLARK	R
238056	24319	-	-	Decommission Monitoring Wells	2	1	E	39	NW	SE	03/18/95	CLARK	R
238057	24319	-	-	Decommission Monitoring Wells	2	1	E	39	NW	SE	03/18/95	CLARK	R
238058	24319	-	-	Decommission Monitoring Wells	2	1	E	39	NW	SE	03/18/95	CLARK	R
870618	RE08521	65	5	GRI Owners Rep	2	1	E	57	NW	SW	06/07/13	CLARK	R
870620	RE08521	65	5	GRI Owners Rep	2	1	E	57	NW	SW	06/07/13	CLARK	R
870622	SE48259	75	3.75	GRI Owners Rep	2	1	E	57	NW	SW	06/11/13	CLARK	R
870626	SE48259	60	3.75	GRI Owners Rep	2	1	E	57	NW	SW	06/11/13	CLARK	R
870644	SE48259	50	4	GRI Owners Rep	2	1	E	57	NW	SW	06/11/13	CLARK	R
870645	SE48259	80	3.75	GRI Owners Rep	2	1	E	57	NW	SW	06/10/13	CLARK	R
870647	SE48259	65	3.75	GRI Owners Rep	2	1	E	57	NW	SW	06/07/13	CLARK	R
870648	SE48259	70	3.75	GRI Owners Rep	2	1	E	57	NW	SW	06/05/13	CLARK	R
870650	SE48259	80	3.75	GRI Owners Rep	2	1	E	57	NW	SW	06/06/13	CLARK	R
870652	SE48259	65	3.75	GRI Owners Rep	2	1	E	57	NW	SW	06/07/13	CLARK	R
870654	SE48259	12.5	3.75	GRI Owners Rep	2	1	E	57	NW	SW	06/10/13	CLARK	R
870656	SE48259	12	3.75	GRI Owners Rep	2	1	E	57	NW	SW	06/10/13	CLARK	R
878250	SE48259	50	5	GRI Owners Rep	2	1	E	57	NW	SW	07/02/13	CLARK	R
878252	SE48259	21.5	5	GRI Owners Rep	2	1	E	57	NW	SW	07/02/13	CLARK	R
878254	SE48259	20	5	GRI Owners Rep	2	1	E	57	NW	SW	07/02/13	CLARK	R
878256	SE48259	22	5	GRI Owners Rep	2	1	E	57	NW	SW	07/02/13	CLARK	R
878258	SE48259	95	5	GRI Owners Rep	2	1	E	57	NW	SW	07/03/13	CLARK	R
878260	SE48259	40	5	GRI Owners Rep	2	1	E	57	NW	SW	07/08/13	CLARK	R
878262	SE48259	40	5	GRI Owners Rep	2	1	E	57	NW	SW	07/08/13	CLARK	R
878264	SE48259	20	5	GRI Owners Rep	2	1	E	57	NW	SW	07/08/13	CLARK	R
878266	SE48259	40	5	GRI Owners Rep	2	1	E	57	NW	SW	07/09/13	CLARK	R
878268	SE48259	20	5	GRI Owners Rep	2	1	E	57	NW	SW	07/09/13	CLARK	R
878270	SE48259	25	5	GRI Owners Rep	2	1	E	57	NW	SW	07/01/13	CLARK	R
878803	SE48259	50	5	GRI Owners Rep	2	1	E	57	NW	SW	07/01/13	CLARK	R
855787	SE45582	25	2.25	Port Of Vancouver | AMEC	2	1	E	53	NW	SE	06/21/12	CLARK	R
855789	SE45582	30	2.25	Port Of Vancouver | AMEC	2	1	E	53	NW	SE	06/21/12	CLARK	R
855791	SE45657	10	8	Port Of Vancouver | AMEC	2	1	E	53	NW	SE	06/29/12	CLARK	R
855793	SE45657	10	8	Port Of Vancouver | AMEC	2	1	E	53	NW	SE	06/29/12	CLARK	R
855803	SE45657	10	8	Port Of Vancouver | AMEC	2	1	E	53	NW	SE	06/29/12	CLARK	R
855807	SE45657	40	8	Port Of Vancouver | AMEC	2	1	E	53	NW	SE	06/29/12	CLARK	R
859386	SE45911	20	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/06/12	CLARK	R
859388	SE45911	20	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/06/12	CLARK	R
859390	SE45911	20	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/06/12	CLARK	R
859392	SE45911	20	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/06/12	CLARK	R

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well_log_id	nit_id_nr	well_depth_qt	well_diameter_qt	well_owner_nm	township_nr	range_nr	range_dir_cd	section_nr	qtr_section_cd	qtr_qtr_section_cd	well_comp_dt	county_nm	well_type_cd
RESOURCE PROTECTION WELLS LOCATED MORE THAN 0.25-MILE FROM SITE (cont'd)													
859394	SE45911	20	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/06/12	CLARK	R
859423	SE45911	20	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/06/12	CLARK	R
859425	SE45911	20	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/06/12	CLARK	R
859427	SE45911	20	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/06/12	CLARK	R
859769	EE04103	30	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/07/12	CLARK	R
859773	EE04103	30	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/07/12	CLARK	R
859777	EE04103	15	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/07/12	CLARK	R
688350	SE08290	128	1.5	Port of Vancouver | URS	2	1	E	57	NE	SW	11/15/10	CLARK	R
688352	SE08290	131	1.5	Port of Vancouver | URS	2	1	E	57	NE	SW	11/15/10	CLARK	R
688354	SE08290	107	1.5	Port of Vancouver | URS	2	1	E	57	NE	SW	11/15/10	CLARK	R
688356	SE08290	114	1.5	Port of Vancouver | URS	2	1	E	57	NE	SW	11/15/10	CLARK	R
688358	SE08290	117	1.5	Port of Vancouver | URS	2	1	E	57	NE	SW	11/15/10	CLARK	R
688360	SE08290	122	1.5	Port of Vancouver | URS	2	1	E	57	NE	SW	11/15/10	CLARK	R
238054	24319	-	-	Decommission Monitoring Wells	2	1	E	39	NW	SE	03/18/95	CLARK	R
238055	24319	-	-	Decommission Monitoring Wells	2	1	E	39	NW	SE	03/18/95	CLARK	R
238056	24319	-	-	Decommission Monitoring Wells	2	1	E	39	NW	SE	03/18/95	CLARK	R
238057	24319	-	-	Decommission Monitoring Wells	2	1	E	39	NW	SE	03/18/95	CLARK	R
238058	24319	-	-	Decommission Monitoring Wells	2	1	E	39	NW	SE	03/18/95	CLARK	R
870618	RE08521	65	5	GRI Owners Rep	2	1	E	57	NW	SW	06/07/13	CLARK	R
870620	RE08521	65	5	GRI Owners Rep	2	1	E	57	NW	SW	06/07/13	CLARK	R
870622	SE48259	75	3.75	GRI Owners Rep	2	1	E	57	NW	SW	06/11/13	CLARK	R
870626	SE48259	60	3.75	GRI Owners Rep	2	1	E	57	NW	SW	06/11/13	CLARK	R
870644	SE48259	50	4	GRI Owners Rep	2	1	E	57	NW	SW	06/11/13	CLARK	R
870645	SE48259	80	3.75	GRI Owners Rep	2	1	E	57	NW	SW	06/10/13	CLARK	R
870647	SE48259	65	3.75	GRI Owners Rep	2	1	E	57	NW	SW	06/07/13	CLARK	R
870648	SE48259	70	3.75	GRI Owners Rep	2	1	E	57	NW	SW	06/05/13	CLARK	R
870650	SE48259	80	3.75	GRI Owners Rep	2	1	E	57	NW	SW	06/06/13	CLARK	R
870652	SE48259	65	3.75	GRI Owners Rep	2	1	E	57	NW	SW	06/07/13	CLARK	R
870654	SE48259	12.5	3.75	GRI Owners Rep	2	1	E	57	NW	SW	06/10/13	CLARK	R
870656	SE48259	12	3.75	GRI Owners Rep	2	1	E	57	NW	SW	06/10/13	CLARK	R
878250	SE48259	50	5	GRI Owners Rep	2	1	E	57	NW	SW	07/02/13	CLARK	R
878252	SE48259	21.5	5	GRI Owners Rep	2	1	E	57	NW	SW	07/02/13	CLARK	R
878254	SE48259	20	5	GRI Owners Rep	2	1	E	57	NW	SW	07/02/13	CLARK	R
878256	SE48259	22	5	GRI Owners Rep	2	1	E	57	NW	SW	07/02/13	CLARK	R
878258	SE48259	95	5	GRI Owners Rep	2	1	E	57	NW	SW	07/03/13	CLARK	R
878260	SE48259	40	5	GRI Owners Rep	2	1	E	57	NW	SW	07/08/13	CLARK	R
878262	SE48259	40	5	GRI Owners Rep	2	1	E	57	NW	SW	07/08/13	CLARK	R
878264	SE48259	20	5	GRI Owners Rep	2	1	E	57	NW	SW	07/08/13	CLARK	R
878266	SE48259	40	5	GRI Owners Rep	2	1	E	57	NW	SW	07/09/13	CLARK	R
878268	SE48259	20	5	GRI Owners Rep	2	1	E	57	NW	SW	07/09/13	CLARK	R
878270	SE48259	25	5	GRI Owners Rep	2	1	E	57	NW	SW	07/01/13	CLARK	R
878803	SE48259	50	5	GRI Owners Rep	2	1	E	57	NW	SW	07/01/13	CLARK	R
855787	SE45582	25	2.25	Port Of Vancouver | AMEC	2	1	E	53	NW	SE	06/21/12	CLARK	R
855789	SE45582	30	2.25	Port Of Vancouver | AMEC	2	1	E	53	NW	SE	06/21/12	CLARK	R
855791	SE45657	10	8	Port Of Vancouver | AMEC	2	1	E	53	NW	SE	06/29/12	CLARK	R
855793	SE45657	10	8	Port Of Vancouver | AMEC	2	1	E	53	NW	SE	06/29/12	CLARK	R

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well_log_id	nit_id_nr	well_depth_qt	well_diameter_qt	well_owner_nm	township_nr	range_nr	range_dir_cd	section_nr	qtr_section_cd	qtr_qtr_section_cd	well_comp_dt	county_nm	well_type_cd
RESOURCE PROTECTION WELLS LOCATED MORE THAN 0.25-MILE FROM SITE (cont'd)													
855803	SE45657	10	8	Port Of Vancouver | AMEC	2	1	E	53	NW	SE	06/29/12	CLARK	R
855807	SE45657	40	8	Port Of Vancouver | AMEC	2	1	E	53	NW	SE	06/29/12	CLARK	R
859386	SE45911	20	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/06/12	CLARK	R
859388	SE45911	20	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/06/12	CLARK	R
859390	SE45911	20	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/06/12	CLARK	R
859392	SE45911	20	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/06/12	CLARK	R
859394	SE45911	20	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/06/12	CLARK	R
859423	SE45911	20	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/06/12	CLARK	R
859425	SE45911	20	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/06/12	CLARK	R
859427	SE45911	20	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/06/12	CLARK	R
859769	EE04103	30	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/07/12	CLARK	R
859773	EE04103	30	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/07/12	CLARK	R
859777	EE04103	15	2.25	Port of Vancouver | Hahn & Associates	2	1	E	57	NW	NW	08/07/12	CLARK	R
445649	RE01506	30	2	Valero LP	2	1	E	54	NE	NE	06/09/06	CLARK	R
445650	RE01506	50	2	Valero LP	2	1	E	54	NE	NE	06/09/06	CLARK	R
GEOTECHNICAL BORINGS, SOIL VAPOR WELLS, OR WELL ABANDONMENT LOGS													
598079	SE04407	60	6	Clifford Koppe | Clark County Public Health Departme	2	1	E	21	SE	SW	04/22/09	CLARK	R
598081	SE04407	60	6	Clifford Koppe | Clark County Public Health Departme	2	1	E	21	SE	SW	04/22/09	CLARK	R
598083	SE04407	60	6	Clifford Koppe | Clark County Public Health Departme	2	1	E	21	SE	SW	04/22/09	CLARK	R
598085	SE04407	60	6	Clifford Koppe | Clark County Public Health Departme	2	1	E	21	SE	SW	04/22/09	CLARK	R
598087	SE04407	60	6	Clifford Koppe | Clark County Public Health Departme	2	1	E	21	SE	SW	04/22/09	CLARK	R
212048	11512	-	-	Columbia Cascade	2	1	E	21	SE	SW	07/14/97	CLARK	R
212049	11512	-	-	Columbia Cascade	2	1	E	21	SE	SW	07/14/97	CLARK	R
212050	11512	-	-	Columbia Cascade	2	1	E	21	SE	SW	07/14/97	CLARK	R
212051	11512	-	-	Columbia Cascade	2	1	E	21	SE	SW	07/14/97	CLARK	R
237579	11512	-	-	Columbia Cascade	2	1	E	21	SE	SW	07/14/97	CLARK	R
237580	11512	-	-	Columbia Cascade	2	1	E	21	SE	SW	07/14/97	CLARK	R
237581	11512	-	-	Columbia Cascade	2	1	E	21	SE	SW	07/14/97	CLARK	R
237582	11512	-	-	Columbia Cascade	2	1	E	21	SE	SW	07/14/97	CLARK	R
237542	34900	-	-	Frito - Lay	2	1	E	21	-	-	-	CLARK	R
237617	34900	-	-	Frito - Lay	2	1	E	21	-	-	-	CLARK	R
237614	34901	-	-	Rex Roth Pneumatics	2	1	E	21	-	-	-	CLARK	R
237622	209595	15	-	Bearing Inc.	2	1	E	22	SW	NW	03/09/93	CLARK	R
237623	209595	20	-	Bearing Inc.	2	1	E	22	SW	NW	03/09/93	CLARK	R
237624	209595	20	-	Bearing Inc.	2	1	E	22	SW	NW	03/09/93	CLARK	R
237629	209595	-	-	Bearing Inc.	2	1	E	22	SW	NW	03/09/93	CLARK	R
237630	209595	-	-	Bearing Inc.	2	1	E	22	SW	NW	03/09/93	CLARK	R
859135	SE46921	5	1.25	Louise Piacentini | Wohlers Environmental	2	1	E	22	SW	SW	12/06/12	CLARK	R
859139	SE46921	5	1.25	Louise Piacentini | Wohlers Environmental	2	1	E	22	SW	SW	12/06/12	CLARK	R
859135	SE46921	5	1.25	Louise Piacentini | Wohlers Environmental	2	1	E	22	SW	SW	12/06/12	CLARK	R
859139	SE46921	5	1.25	Louise Piacentini | Wohlers Environmental	2	1	E	22	SW	SW	12/06/12	CLARK	R
237632	202051	-	-	Woodhill Capital Corp.	2	1	E	22	-	-	-	CLARK	R
237620	202051	-	-	Woodhill Capital Corp.	2	1	E	22	-	-	-	CLARK	R
237632	202051	-	-	Woodhill Capital Corp.	2	1	E	22	-	-	-	CLARK	R
237620	202051	-	-	Woodhill Capital Corp.	2	1	E	22	-	-	-	CLARK	R

TABLE 5
Soil Vapor Extraction Monitoring Data
Plaid Pantry No. 112
Vancouver, Washington

Well ID	Date	Quarterly Sampling	Vacuum/Pressure (in H_2O)	PID (ppmv)	Velocity (fpm)	Flow (cfm)[a]
SVE-1	08/22/2013	Yes	26	1,968	813	17
	08/22/2013	-	20	-	580	12
	08/23/2013	-	22	1,240	555	11
	08/27/2013	-	21	1,653	590	12
	08/29/2013	-	21	1,128	816	17
	09/04/2013	-	21	940	603	12
	09/06/2013	-	22	1,643	627	13
	09/13/2013	-	22	829	555	11
	09/20/2013	-	21	606	561	12
	09/27/2013	-	21	157	670	14
	10/04/2013	-	22	460	557	11
	10/04/2013	-	48	-	1,063	22
	10/11/2013	-	46	198	1,151	24
	10/11/2013	-	48	-	1,249	26
	10/25/2013	-	46	188	1,146	23
	10/25/2013	-	47	-	1,291	26
	11/01/2013	-	47	195	1,258	26
	11/01/2013	-	46	-	1,240	25
	11/13/2013	-	48	250	1,388	28
	11/13/2013	-	47	-	1,278	26
	11/21/2013	-	47	-	1,278	26
	11/21/2013	-	48	170	1,341	27
	11/27/2013		Well Lateral Closed Off 11/21 through 11/27			
	11/27/2013	-	21	285	928	19
	12/04/2013	Yes	24	67	671	14
	12/18/2013	-	24	33	641	13
SVE-2	08/22/2013	Yes	8.0	0.8	2,954	61
	08/22/2013	-	6.0	0.8	2,250	46
	08/23/2013	-	6.4	0.8	2,546	52
	08/27/2013	-	6.4	0.8	2,450	50
	08/29/2013	-	7.0	1.1	2,375	49
	09/04/2013	-	6.4	0.1	2,346	48
	09/06/2013	-	6.8	8.4	2,341	48
	09/13/2013	-	6.8	18.5	2,190	45
	09/20/2013	-	6.8	8.6	2,922	60
	09/27/2013	-	8.0	0.0	2,330	48
	10/04/2013	-	8.4	4.3	2,560	52
	10/04/2013		Well Lateral Closed Off 10/4 through 10/11			
	10/11/2013	-	8.0	-	3,010	62
	10/25/2013	-	8.0	4.7	3,208	66
	10/25/2013		Well Lateral Closed Off 10/25 through 11/27			
	11/27/2013	-	9	4.7	2,852	79
	12/04/2013	Yes	11	3.5	3,865	79
	12/18/2013	-	10	2.5	2,762	57
SVE-3	08/22/2013	Yes	26	13	1,257	26
	08/22/2013	-	20	-	730	15
	08/23/2013	-	21	37	709	15
	08/27/2013	-	21	60	806	17
	08/29/2013	-	21	9.5	575	12
	09/04/2013	-	21	15	643	13
	09/06/2013	-	21	57	613	13
	09/13/2013	-	22	32	521	11

TABLE 5
Soil Vapor Extraction Monitoring Data
Plaid Pantry No. 112
Vancouver, Washington

Well ID	Date	Quarterly Sampling	Vacuum/Pressure (in H_2O)	PID (ppmv)	Velocity (fpm)	Flow (cfm)[a]
SVE-3 (cont'd)	09/20/2013	-	21	15	642	13
	09/27/2013	-	21	2.4	824	17
	10/04/2013	-	23	7.3	580	12
	10/04/2013	-	48	-	929	19
	10/11/2013	-	46	11	1,505	31
	10/11/2013	-	48	-	1,258	26
	10/25/2013	-	46	7.8	1,360	28
	10/25/2013	-	47	-	1,320	27
	11/01/2013	-	46	15	1,197	25
	11/01/2013		Well Lateral Closed Off 11/1 through 11/13			
	11/13/2013	-	47	37	1,296	27
	11/21/2013	-	48	4.9	1,449	30
	11/21/2013		Well Lateral Closed Off 11/21 through 11/27			
	11/27/2013	-	21	3.4	857	18
	12/04/2013	Yes	24	6.6	629	13
	12/18/2013	-	23	2.5	548	11
SVE-4	08/22/2013	Yes	6.2	1.4	2,577	53
	08/22/2013	-	9.0	-	3,803	78
	08/23/2013	-	8.0	1.6	2,511	51
	08/27/2013	-	8.2	0.9	2,539	52
	08/29/2013	-	8.2	0.8	2,706	55
	09/04/2013	-	7.8	0.6	2,630	54
	09/06/2013	-	10.0	6.0	2,850	58
	09/13/2013	-	8.8	18	2,610	54
	09/20/2013	-	8.0	7.6	2,938	60
	09/27/2013	-	8.2	0.0	2,509	51
	10/04/2013	-	8.5	4.3	2,609	53
	10/04/2013	-	10	-	2,540	52
	10/11/2013	-	12	7.5	2,602	53
	10/11/2013		Well Lateral Closed Off 10/11 through 10/25			
	10/25/2013	-	10	-	3,083	63
	11/01/2013	-	12	15	3,185	65
	11/01/2013	-	18	-	4,538	93
	11/13/2013	-	20	30	4,300	88
	11/13/2013	-	14	-	2,984	61
	11/21/2013	-	16	4.1	>4,000	82
	11/21/2013		Well Lateral Closed Off 11/21 through 11/27			
	11/27/2013	-	10	4.3	>3000	62
	12/04/2013	Yes	14	4.6	2,884	59
	12/18/2013	-	11	2.2	2,057	42
SVE-5	08/22/2013	Yes	26	7.9	769	16
	08/22/2013	-	19	-	920	19
	08/23/2013	-	21	5.8	503	10
	08/27/2013	-	21	3.6	604	12
	08/29/2013	-	21	1.8	836	17
	09/04/2013	-	21	1.3	618	13
	09/06/2013	-	22	11	716	15
	09/13/2013	-	22	22	598	12
	09/20/2013	-	21	9.4	621	13
	09/27/2013	-	22	0.2	552	11
	10/04/2013	-	23	6.8	620	13
	10/04/2013	-	48	-	1,088	22

TABLE 5
Soil Vapor Extraction Monitoring Data
Plaid Pantry No. 112
Vancouver, Washington

Well ID	Date	Quarterly Sampling	Vacuum/Pressure (in H_2O)	PID (ppmv)	Velocity (fpm)	Flow (cfm)[a]
SVE-5 (cont'd)	10/11/2013	-	46	7.5	1,248	26
	10/11/2013	-	48	-	1,253	26
	10/25/2013	-	46	6.7	1,089	22
	10/25/2013		Well Lateral Closed Off 10/25 through 11/1			
	11/01/2013	-	46	-	1,195	24
	11/13/2013	-	48	40	1,308	27
	11/13/2013		Well Lateral Closed Off 11/13 through 11/21			
	11/21/2013	-	50	16	1,810	37
	11/27/2013	-	48	3.7	1,222	25
	11/27/2013	-	21	3.6	726	15
	12/04/2013	Yes	24	3.2	727	15
	12/18/2013	-	23	2.4	656	13
AWS Inlet	08/22/2013	-	28	-	-	96
	08/22/2013	-	26	-	-	88
	08/23/2013	-	22	-	-	56
	08/27/2013	-	22	-	-	79
	08/29/2013	-	21	-	-	88
	09/04/2013	-	22	-	-	97
	09/06/2013	-	23	-	-	97
	09/13/2013	-	22	-	-	88
	09/20/2013	-	22	-	-	97
	09/27/2013	-	22	-	-	79
	10/04/2013	-	24	-	-	89
	10/04/2013	-	49	-	-	77
	10/11/2013	-	47	-	-	67
	10/11/2013	-	48	-	-	67
	10/25/2013	-	48	-	-	55
	10/25/2013	-	46	-	-	55
	11/01/2013	-	48	-	-	55
	11/01/2013	-	46	-	-	55
	11/13/2013	-	48	-	-	55
	11/13/2013	-	48	-	-	55
	11/21/2013	-	50	-	-	55
	11/21/2013	-	50	-	-	-
	11/27/2013	-	49	-	-	12
	11/27/2013	-	22	-	-	106
	12/04/2013	-	26	-	-	99
	12/18/2013	-	24	-	-	81
SVE Blower Inlet	08/22/2013	Yes	28	69	1,626	75
	08/22/2013	-	28	-	1,733	80
	08/23/2013	-	24	43	1,677	77
	08/27/2013	-	24	38	2,270	104
	08/29/2013	-	23	32	2,013	93
	09/04/2013	-	23	28	1,705	78
	09/06/2013	-	24	47	2,096	96
	09/13/2013	-	23	30	1,899	87
	09/20/2013	-	22	41	1,261	58
	09/27/2013	Yes	22	9.8	1,156	53
	10/04/2013	-	25	17	1,901	39
	10/04/2013	-	50	-	1,474	30
	10/11/2013	-	47	24	1,580	32
	10/11/2013	-	49	-	1,439	29

TABLE 5
Soil Vapor Extraction Monitoring Data
Plaid Pantry No. 112
Vancouver, Washington

Well ID	Date	Quarterly Sampling	Vacuum/Pressure (in H_2O)	PID (ppmv)	Velocity (fpm)	Flow (cfm)[a]
SVE Blower Inlet	10/25/2013	-	49	74	1,551	32
(cont'd)	10/25/2013	-	48	-	1,556	32
	11/01/2013	Yes	48	26	1,760	36
	11/01/2013	-	47	-	1,770	36
	11/13/2013	-	49	30	1,947	40
	11/13/2013	-	48	-	1,771	36
	11/21/2013	-	50	15	1,777	36
	11/21/2013	-	50	-	1,459	30
	11/27/2013	-	49	3.7	1,307	27
	11/27/2013	-	23	10	2,120	43
	12/04/2013	Yes	26	3.8	1,202	25
	12/18/2013	-	25	2.3	1,675	34
GAC #1	08/22/2013	-	-	109	-	-
	08/23/2013	-	-	106	-	-
	08/27/2013	-	-	90	-	-
	08/29/2013	-	-	82	-	-
	09/04/2013	-	-	68	-	-
	09/06/2013	-	-	76	-	-
	09/13/2013	-	-	62	-	-
	09/20/2013	-	-	52	-	-
	09/27/2013	-	-	40	-	-
	10/04/2013	-	-	44	-	-
	10/11/2013	-	-	44	-	-
	10/25/2013	-	-	31	-	-
	11/01/2013	-	-	33	-	-
	11/13/2013	-	-	33	-	-
	11/21/2013	-	-	21	-	-
	11/27/2013	-	-	0.0	-	-
	11/27/2013	-	-	20	-	-
	12/04/2013	-	-	1.9	-	-
	12/18/2013	-	-	7.3	-	-
GAC #2	08/22/2013	-	-	0.0	-	-
	08/23/2013	-	-	0.0	-	-
	08/27/2013	-	-	0.0	-	-
	08/29/2013	-	-	0.0	-	-
	09/04/2013	-	-	0.0	-	-
	09/06/2013	-	-	0.3	-	-
	09/13/2013	-	-	0.0	-	-
	09/20/2013	-	-	0.0	-	-
	09/27/2013	-	-	0.0	-	-
	10/04/2013	-	-	0.0	-	-
	10/11/2013	-	-	0.0	-	-
	10/25/2013	-	-	0.0	-	-
	11/01/2013	-	-	1.0	-	-
	11/13/2013	-	-	4.0	-	-
	11/21/2013	-	-	0.8	-	-
	11/27/2013	-	-	0.0	-	-
	11/27/2013	-	-	0.0	-	-
	12/04/2013	-	-	1.1	-	-
	12/18/2013	-	-	2.3	-	-
Post GAC	08/22/2013	Yes	-	0.0	-	-
	08/23/2013	-	-	0.0	-	-

TABLE 5
Soil Vapor Extraction Monitoring Data
Plaid Pantry No. 112
Vancouver, Washington

Well ID	Date	Quarterly Sampling	Vacuum/Pressure (in H_2O)	PID (ppmv)	Velocity (fpm)	Flow (cfm)[a]
Post GAC (cont'd)	08/27/2013	-	-	0.0	-	-
	08/29/2013	-	-	0.0	-	-
	09/04/2013	-	-	0.0	-	-
	09/06/2013	-	-	0.0	-	-
	09/13/2013	-	-	0.0	-	-
	09/20/2013	-	-	0.0	-	-
	09/27/2013	-	-	0.0	-	-
	10/04/2013	-	-	0.0	-	-
	10/11/2013	-	-	0.0	-	-
	10/25/2013	-	-	0.0	-	-
	11/01/2013	-	-	0.0	-	-
	11/13/2013	-	-	0.0	-	-
	11/21/2013	-	-	0.0	-	-
	11/27/2013	-	-	0.0	-	-
	11/27/2013	-	-	0.0	-	-
	12/04/2013	-	-	0.3	-	-
	12/18/2013	Yes	-	0.1	-	-

Notes:

[a] Flow reported in cfm, with the exception of the AWS Inlet which is reported in scfm (standard cubic feet per minute)

in H_2O = Inches of water column vacuum

ppmv = Parts per million vapor

fpm = Feet per minute

cfm = Cubic feet per minute

- = Not measured

AWS = Air/water separator

GAC = Granular activated carbon

TABLE 5

Soil Vapor Extraction Monitoring Data - Gasoline and Related Constituents (mg/m^3)

Plaid Pantry No. 112

Vancouver, Washington

Sample ID	Sampling Date	PID	Benzene		Toluene		Ethyl Benzene		Total Xylenes		Gasoline	
		ppmv	mg/m^3	ppmv	mg/m^3	ppmv	mg/m^3	ppmv	mg/m^3	ppmv	mg/m^3	ppmv
SVE Blower Inlet	08/22/2013	69	2.1	0.66	2.1	0.56	0.065	0.015	0.38	0.086	160	45
	09/27/2013	9.8	0.095	0.030	0.092	0.024	0.0052	0.0012	0.018	0.0041	24	6.8
	11/01/2013	26	0.20	0.063	1.2	0.32	0.45	0.10	2.8	0.65	68	19
	12/04/2013	3.8	0.012	0.0038	1.5	0.40	0.016	0.0037	0.18	0.042	26	7.4
Post - GAC	08/22/2013	0.0	0.0036 U	0.0011 U	0.0043 U	0.0011 U	0.0049 U	0.0011 U	0.0098 U	0.0023 U	0.23 U	0.065 U
	09/27/2013	0.0	-	-	-	-	-	-	-	-	-	-
	11/01/2013	0.0	-	-	-	-	-	-	-	-	-	-
	12/04/2013	0.00	-	-	-	-	-	-	-	-	-	-

Notes:

mg/m^3 = Milligrams per cubic meter of air

ppmv = parts per million vapor

PID = photoionization detector

U = Not detected at the reporting limit shown

- = not analyzed

TABLE 6
Soil Vapor Extraction Mass Removal
Plaid Pantry No. 112
Vancouver, Washington

Date	Cumulative Operating Days	Total System Flow (ft^3/min)	Pre-Treatment Lab Analysis	Estimated Mass Removal Rate Per Cycle (Pounds/Day)[a]	Estimated Cumulative Mass Removed (Pounds)
			Gasoline mg/m^3	Gasoline	Gasoline
08/22/2013	0.25	96	160	1.4	0.5
09/27/2013	28	79	24	0.73	30
11/01/2013	61	55	68	0.28	46
12/04/2013	94	99	26	0.32	56

Notes:

[a] Concentrations are averaged between start and end of each time period

ft^3/min = Cubic feet per minute

mg/m^3 = Milligrams per cubic meter

- = Not measured

TABLE 7

Carbon System Performance (mg/m^3)

Plaid Pantry No. 112

Vancouver, Washington

Sampling Date	PID (ppmv)			Benzene			Toluene			Ethyl Benzene			Total Xylenes			Gasoline		
	Blower Inlet	Post-GAC	DRE[a]	Blower Inlet	Post-GAC	DRE[a]	Blower Inlet	Post-GAC	DRE	Blower Inlet	Post-GAC	DRE	Blower Inlet	Post-GAC	DRE	Blower Inlet	Post-GAC	DRE
08/22/2013	69	0.0	-	2.1	0.0036 U	99.8%	2.1	0.0043 U	99.8%	0.065	0.0049 U	96.2%	0.375	0.0098 U	98.7%	160	0.23 U	99.9%
09/27/2013	9.8	0.0	-	0.095	-	-	0.092	-	-	0.0052	-	-	0.018	-	-	24	-	-
11/01/2013	26	0.0	-	0.20	-	-	1.2	-	-	0.45	-	-	2.8	-	-	68	-	-
12/04/2013	3.8	0.0	-	0.012	-	-	1.5	-	-	0.016	-	-	0.18	-	-	26	-	-

Notes:

[a] DRE calculated using half of the analytical reporting limit when the post-treatment sample is not detected above reporting limits

mg/m^3 = Milligrams per cubic meter of air

DRE = Destruction and Removal Efficiency

U = Not detected at the reporting limit shown

NA = Not applicable, DRE could not be calculated since Pre- and Post-Treatment concentration were below reporting limits.

- = Not analyzed, or not able to be calculated

TABLE 8
Vacuum Monitoring Data
Plaid Pantry No. 112
Vancouver, Washington

Test Well Name	Date	Time	Test Well Vacuum (" W.C.)	Test Well Velocity (fpm)	Test Well Flow (scfm)	Test Well PID (ppmv)	Vacuum Monitoring Results at Well (" W.C.)					Notes
							SVE-1 (5-10 ft bgs)	SVE-2 (15-20 ft bgs)	SVE-3 (5-10 ft bgs)	SVE-4 (15-20 ft bgs)	SVE-5 (5-10 ft bgs)	
-	8/21/2013	9:40	-	-	-	-	0.0050	+	0.0050	+	0.010	Baseline prior to startup testing
SVE-1		10:47	24	580	27	-	-	-	-	-	-	Startup intiated at well SVE-1
		11:00	20	520	24	-	20	0.010	0.030	0.0050	0.0050	SVE-1 wellhead vacuum = 20.0" W.C.
		11:10	20	525	24	1,154	-	-	-	-	-	PID level measured in extraction vapors
		11:20	-	-	-	-	-	+	0.030	0.0050	0.0050	
		11:30	20	-	-	-	-	+	0.025	+	0.0050	SVE-1 test end at 11:40
SVE-3		11:45	20	532	24		0.040	0.015	-	0.010	0.0050	Startup initiated at well SVE-3
		12:00	-	-	-	-	0.035	+	-	0.010	0.0050	
		12:10	20	535	25	110	-	-	20	-	-	PID level measured in extraction vapors; SVE-3 test end at 12:15
SVE-5		12:15	20	533	25	-	0.010	0.005	0.005	NR	-	Startup initiated at well SVE-5
		12:20	-	-	-	-	0.020	+	0.015	+	20	SVE-5 wellhead vacuum = 20.0" W.C.
		12:30	20	520	24	10	0.0050	+	0.015	+	-	PID level measured in extraction vapors; SVE-5 test end at 12:45
SVE-2		12:45	10	-	-	-	0.015	-	0.020	0.045	0.010	Startup initiated at well SVE-2
		12:50	10	1,150	53	-	0.015	2.0	0.025	0.020	0.0050	SVE-2 wellhead vacuum = 2.0" W.C.
		13:00	12	1,240	57	5.6	0.015	-	0.020	0.020	0.0050	PID level measured in extraction vapors; SVE-2 test end at 13:05
SVE-4		13:05	10	1,840	85	-	0.020	0.030	0.020	2.1	0.010	Startup initiated at well SVE-4; wellhead vacuum = 2.1" W.C.
		13:15	-	-	-	-	0.015	0.020	0.020	-	0.010	
		13:25	12	1,928	89	3.1	0.015	0.030	0.020	-	0.015	PID level measured in extraction vapors; SVE-4 test end at 13:30
SVE-1, SVE-4 and SVE-5	11/13/2013	9:00	48	-	54	30	-	-	0.045	-	-	Full system operating with SVE-2 and SVE-3 turned off
SVE-5	11/21/2013	11:50	0.0	0.0	0.0	-	0.010	+	0.01	+0.010	-	System shutdown prior to week-long isolation test at well SVE-5
	11/27/2013	13:15	49	1,288	59	3.7	NR	0.030	NR	0.040	-	Response readings after week-long isolation test at well SVE-5

Notes:
"W.C. = inches of water column
ppmv = parts per million by volume
fpm = feet per minute
scfm = standard cubic feet per minute
bgs = below ground surface
- = not measured
+ = positive pressure observed

Figures

SOURCE:
USGS, VANCOUVER QUADRANGLE
WASHINGTON–OREGON
7.5 MINUTE SERIES (TOPOGRAPHIC)

N

APPROXIMATE SCALE IN FEET

0 1000 2000 4000

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VICINITY MAP

PLAID PANTRY #112
1002 W. FOURTH PLAIN BLVD.
VANCOUVER, WA.

DATE:	12–18–13	PROJECT NO.	
FILE:	1179–01		1179–01
DRAWN:	JJT	FIGURE NO.	
APPROVED:	CR		1

Y:\EES-Autocad\1179-01 Plaid Pantry #112\2013\Nov 2013\1179-01_VM.dwg, Layout3-VM, 12/18/2013 10:31:27 AM

LEGEND

Property Boundary

Catch Basin

Dry Well

SITE FEATURES ARE APPROXIMATE.

APPROXIMATE SCALE IN FEET

0 250 500 1000

N

DATE:	12-18-13
FILE:	1179-01
DRAWN:	JJT
APPROVED:	CR
PROJECT NO.	1179-01
FIGURE NO.	2

SITE FEATURES

PLAID PANTRY #112
1002 W. FOURTH PLAIN BLVD.
VANCOUVER, WA.

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LEGEND

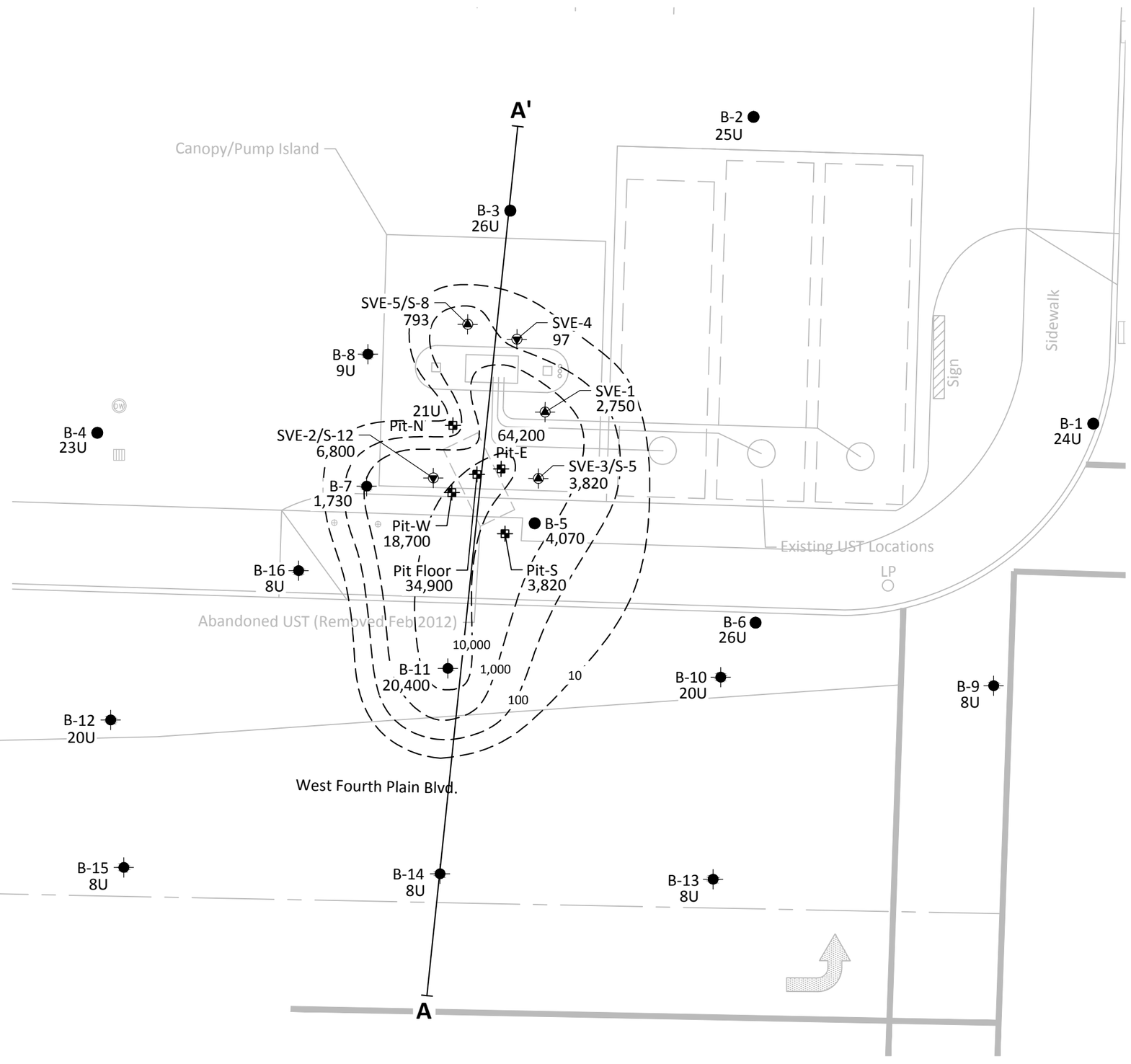
- Property Boundary
- Direct–Push Boring Location (Sept 2011)
- Direct–Push Boring Location (Aug 2012)
- Catch Basin
- Dry Well
- Bollards
- SVE-1 — Shallow SVE test well (screened 5–10' bgs)
- SVE-2 — Deep SVE test well (screened 15–20' bgs)
- 793 — Maximum Detected Gasoline Concentration in Soil (mg/kg)
- 24U — Not Detected at Method Reporting Limits Shown
- 10 — Gasoline Isoconcentration Contour (mg/kg)
- A — A' — Cross Section A–A' Location (See Figure 4)

SITE FEATURES ARE APPROXIMATE.

APPROXIMATE SCALE IN FEET

0 5 10 20

N



DATE:	1–7–14
FILE:	1179–01
DRAWN:	JJT
APPROVED:	CR
PROJECT NO.	1179–01
FIGURE NO.	3

MAXIMUM GASOLINE CONCENTRATION IN SOIL

PLAID PANTRY #112
1002 W. FOURTH PLAIN BLVD.
VANCOUVER, WA.

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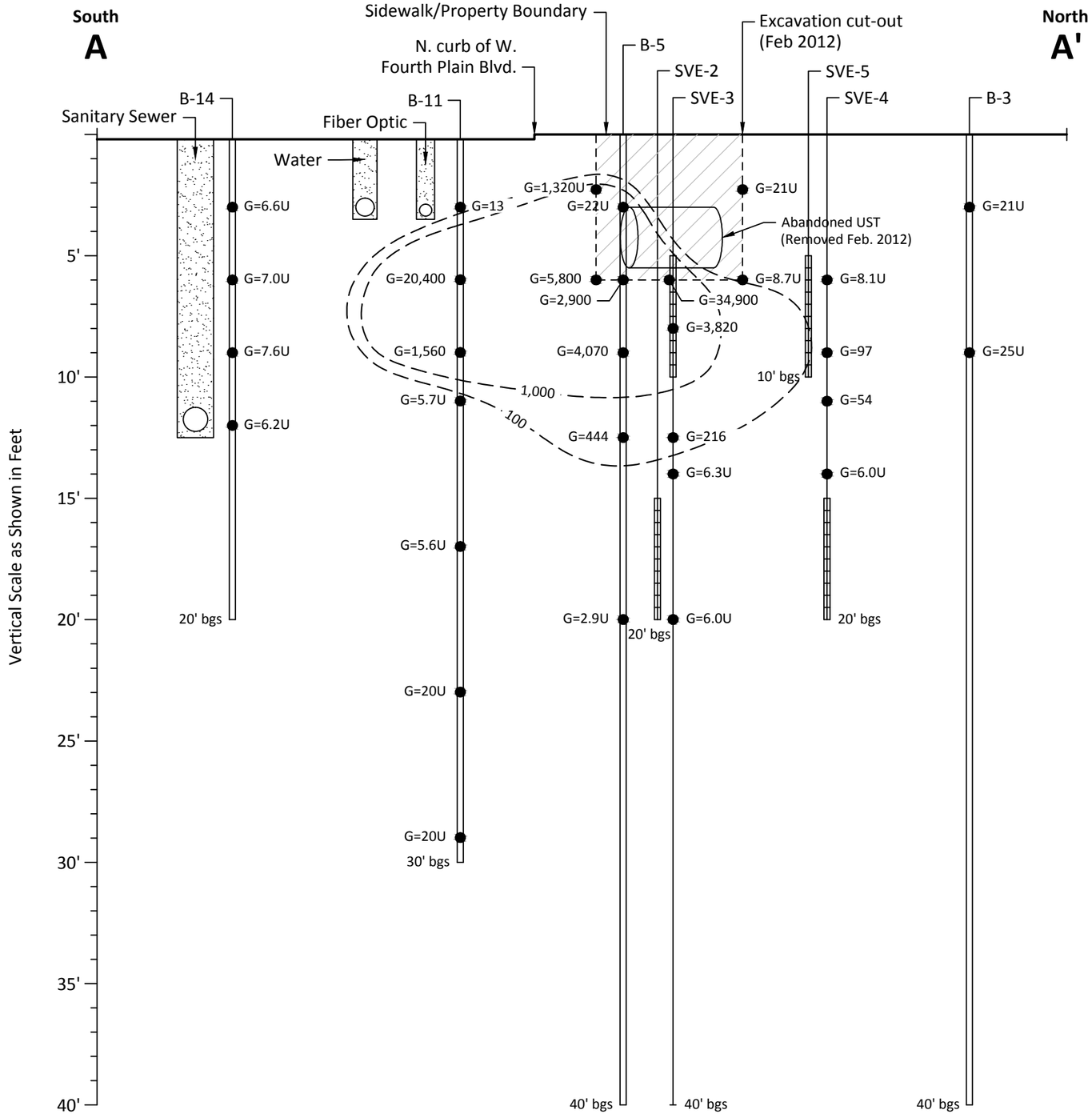

LEGEND

- Soil Sample (January 2009)
- SVE – Soil Vapor Extraction Well and Screened Interval
- G= Gasoline Concentration (mg/kg)
- U= Not Dectected Above Method Reporting Limit

SITE FEATURES ARE APPROXIMATE.

APPROXIMATE SCALE IN FEET

0 5 10 20

PROJECT NO.	1179-01
DATE: 1-7-14	FIGURE NO. 4
FILE: 1179-01	
DRAWN: JJT	
APPROVED: CR	

SOUTH-NORTH CROSS SECTION A-A'

PLAID PANTRY #112
1002 W. FOURTH PLAIN BLVD.
VANCOUVER, WA.

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LEGEND

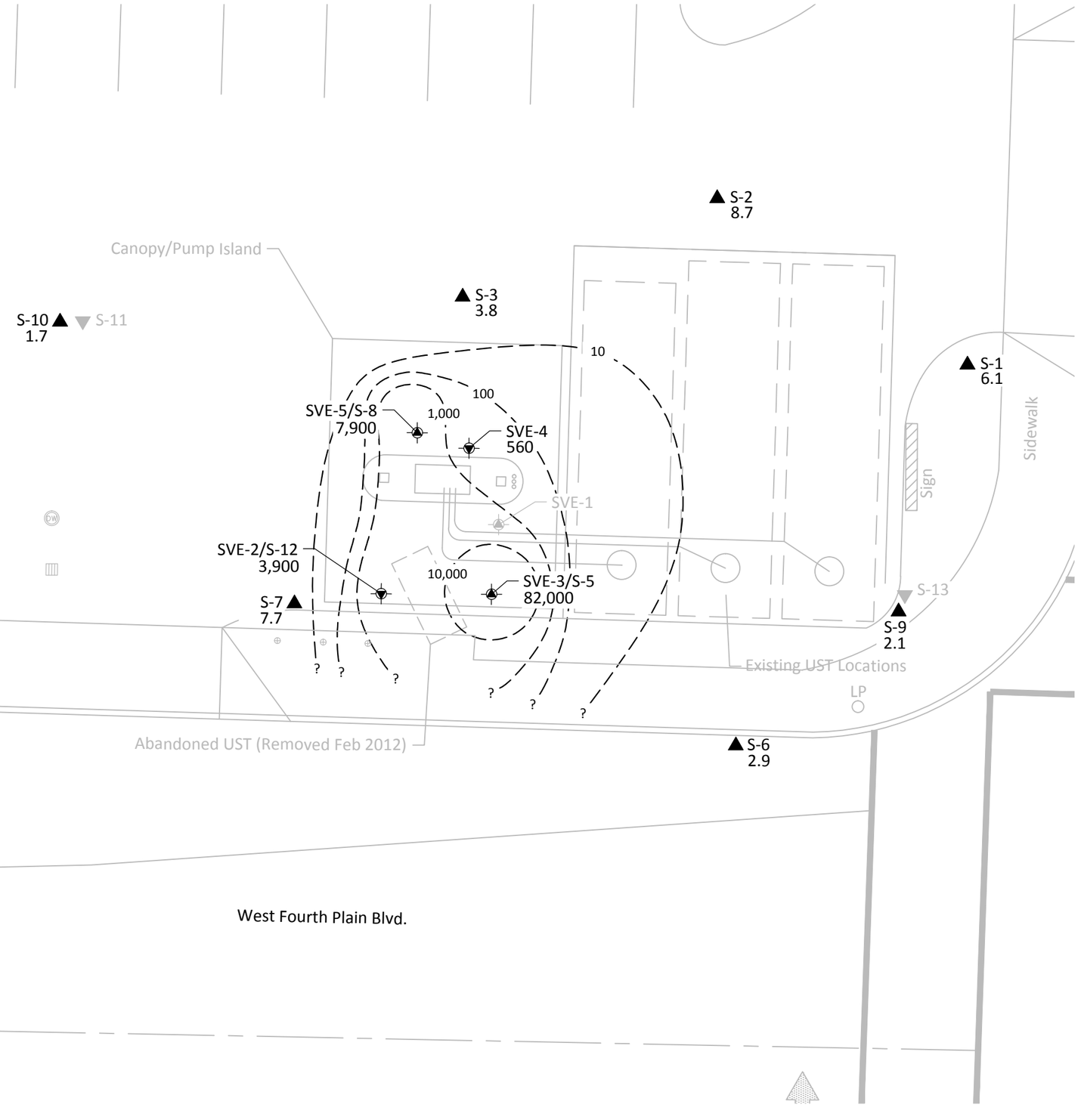
- Property Boundary
- Catch Basin
- Dry Well
- Bollards
- ▲ Soil Gas Sample Location (5' depth) (Aug 2012)
- ▼ Soil Gas Sample Location (15' depth) (Aug 2012)
- SVE-1 — Shallow SVE test well (screened 5–10' bgs)
- SVE-2 — Deep SVE test well (screened 15–20' bgs)
- 3.8 — Benzene Concentrations in Soil Vapor (ug/m³)
- 10 — Benzene Vapor Isoconcentration Contour (ug/m³)

SITE FEATURES ARE APPROXIMATE.

APPROXIMATE SCALE IN FEET

0 5 10 20

N



PROJECT NO.	1179-01
DATE:	1-7-14
FILE:	1179-01
FIGURE NO.	5
DRAWN:	JJT
APPROVED:	CR

BENZENE CONCENTRATION IN SOIL VAPOR (2012)

PLAID PANTRY #112
1002 W. FOURTH PLAIN BLVD.
VANCOUVER, WA.

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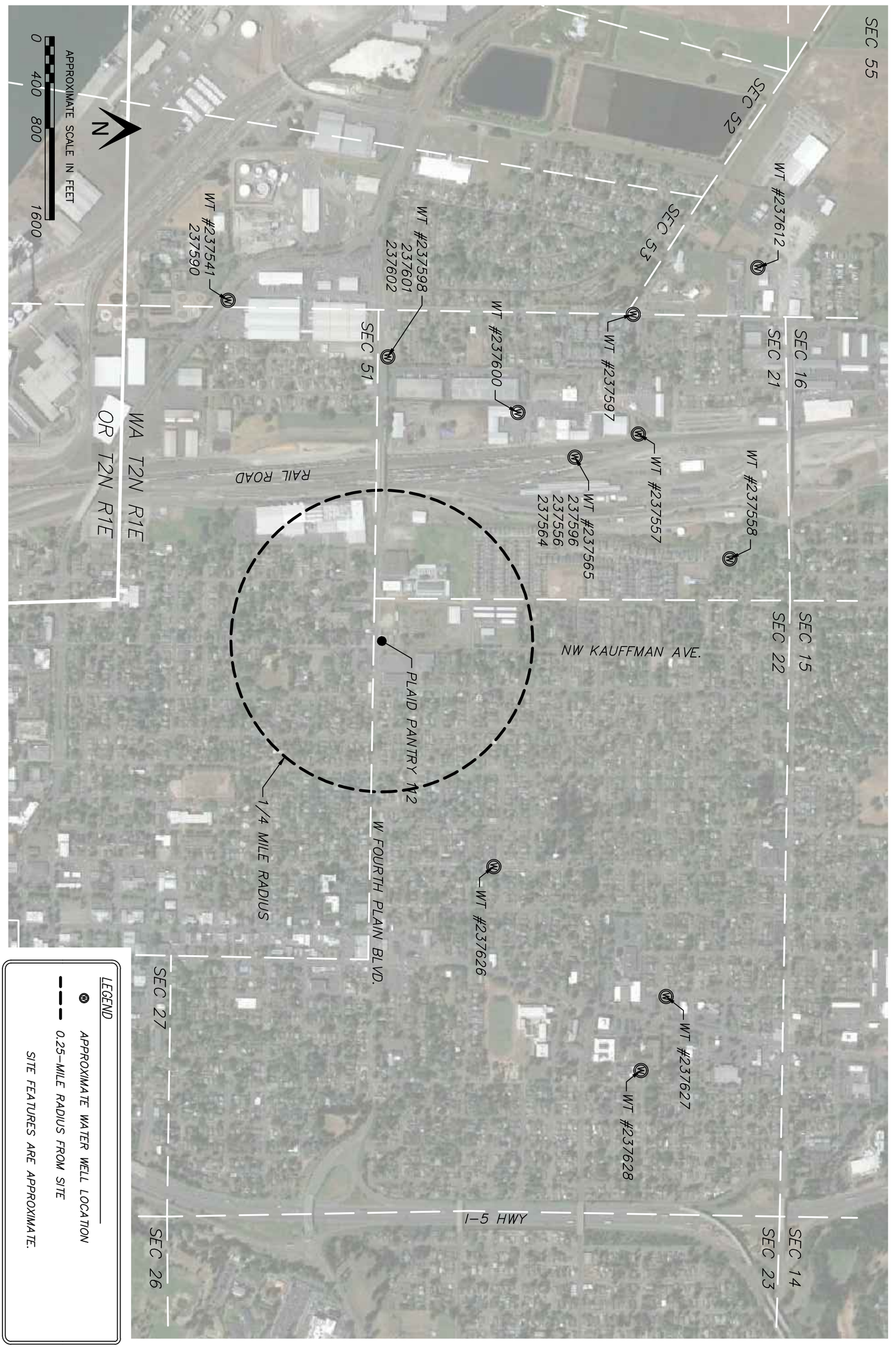

LEGEND

- APPROXIMATE WATER WELL LOCATION
- 0.25-MILE RADIUS FROM SITE

SITE FEATURES ARE APPROXIMATE.

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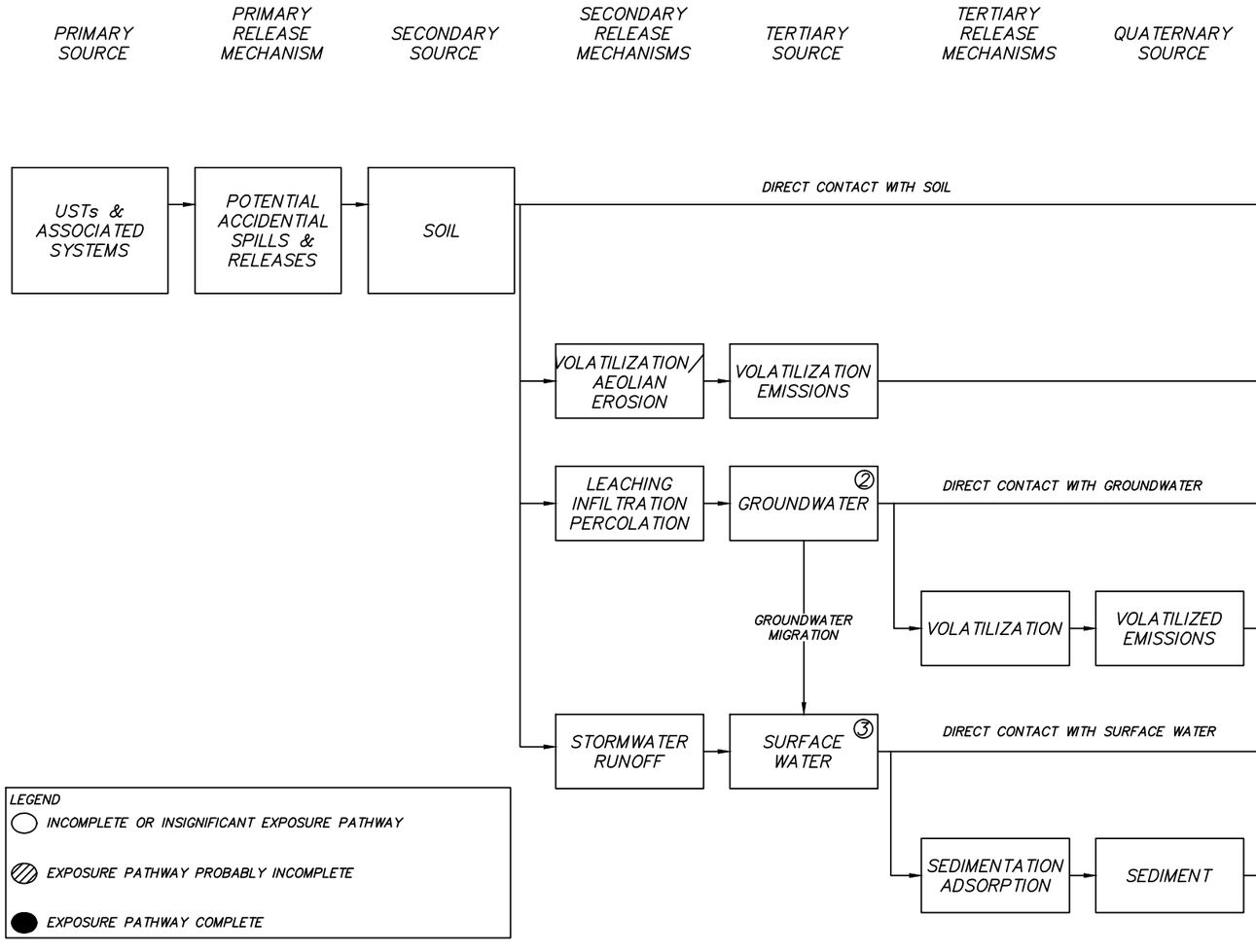
PLAID PANTRY #112
1002 W FOURTH PLAIN BLVD.
VANCOUVER, WA.

WATER WELL LOCATIONS

DATE:	12-18-13	PROJECT NO.	
FILE:	1179-01		1179-01
DRAWN:	JJT	FIGURE NO.	
APPROVED:	CR		6

CONCEPTUAL SITE MODEL OF COMPLETE EXPOSURE PATHWAYS



Exposure Route	Commercial Workers	Construction Workers	Excavation Workers
DERMAL ABSORPTION	○	●	●
INGESTION	▨	●	●
INHALATION OF FUGITIVE DUST PARTICLES	▨	●	●
INHALATION OF INDOOR AIR (1)	●	○	○
INHALATION OF OUTDOOR AIR	●	●	●
DERMAL ABSORPTION	○	○	○
INGESTION	○	○	○
INHALATION OF INDOOR AIR	○	○	○
INHALATION OF OUTDOOR AIR	○	○	○
DERMAL ABSORPTION	○	○	○
INGESTION	○	○	○
DERMAL ABSORPTION	○	○	○
INGESTION	○	○	○

1. VAPOR INTRUSION PATHWAY IS COMPLETE BUT NOT APPLICABLE AT THIS ACTIVE RETAIL GASOLINE FUELING STATION PER ECOLOGY "GUIDANCE FOR EVALUATING SOIL VAPOR INTRUSION IN WASHINGTON STATE INVESTIGATION AND REMEDIAL ACTION" OCTOBER 2009.
2. GROUNDWATER IS NOT AN AFFECTED MEDIA AT THIS SITE.
3. THE SITE IS ENTIRELY PAVED. NO SURFACE WATER CONTACT WITH CONTAMINATED MEDIA IS ANTICIPATED.

PROJECT NO. 1179-01
FIGURE NO. 7
DATE: 12-18-13
FILE: 1179-01
DRAWN: JJT
APPROVED: CR

CONCEPTUAL SITE MODEL

PLAID PANTRY #112
1002 W FOURTH PLAIN BLVD.
VANCOUVER, WA.

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LEGEND

- Property Boundary
- Catch Basin
- Dry Well
- Bollards
- SVE-1 — Shallow SVE test well (screened 5–10' bgs)
- SVE-2 — Deep SVE test well (screened 15–20' bgs)
- Fiber Optic Manhole
- Water Valves
- Signal Control
- SS — Sanitary Sewer
- STRM — Storm
- W — Water
- FO — Fiber Optic
- SVE Piping

APPROXIMATE SCALE IN FEET

0 7.5 15 30

N

EXISTING COMPRESSORS/MECHANICAL

Skid-Mounted Equipment

Air/Water Separator

Well Manifold

Carbon Vessels

Plaid Pantry Store and Dominoes Pizza

EXISTING DUMPSTER

Sidewalk

ESTIMATED ZONE OF INFLUENCE

Vault

Canopy/Pump Island

CURBLINE

FORMER TELEPHONE BOOTH

SVE-5/S-8

SVE-4

UST Vent Pipes

Fuel Dispenser

Vault

SVE-1

Fuel Supply Lines

Sign

SVE-2/S-12

SVE-3/S-5

LANDSCAPING

Abandoned UST (Removed Feb 2012)

Existing UST Locations

Kauffman Ave.

Sidewalk

West Fourth Plain Blvd.

PROJECT NO.	1179-02
FIGURE NO.	8
DATE:	1-7-14
FILE:	1179-02
DRAWN:	JJT
APPROVED:	CR

SVE SYSTEM LAYOUT

PLAID PANTRY #112
1002 W. FOURTH PLAIN BLVD.
VANCOUVER, WASHINGTON

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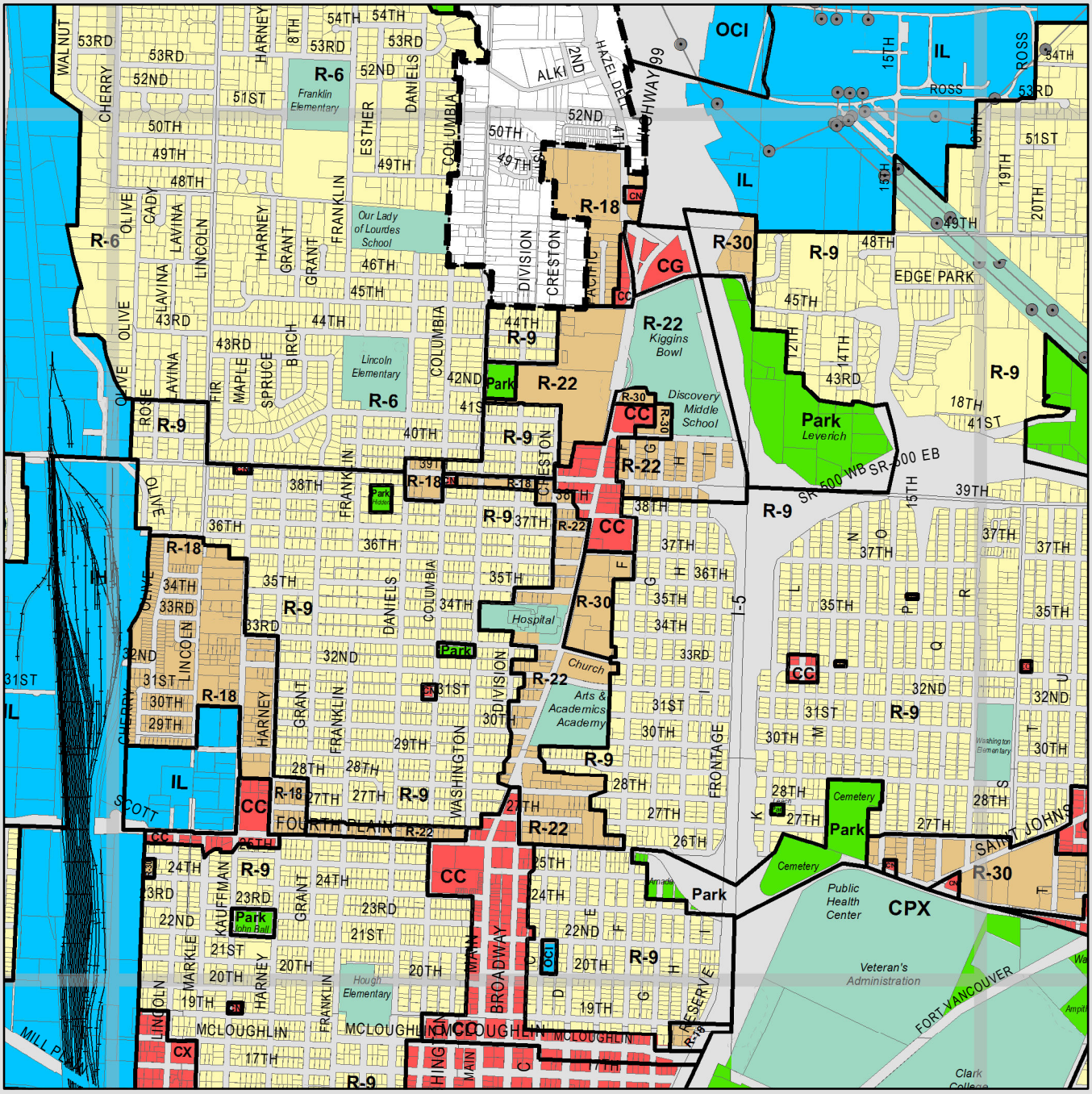
D:\Client Autocad\EES-Autocad\1179-02\2014\Jan 2014\1179-02_BM.dwg, SVE Layout

Appendix A



Map Section: C-4

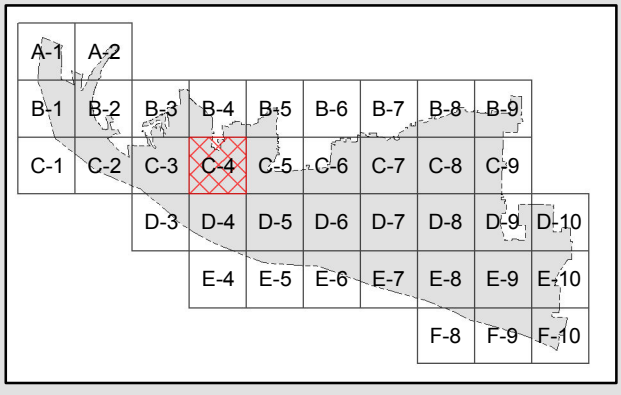
Comprehensive Plan Designations

- Urban Lower Density Residential
- Urban Higher Density Residential
- Commercial & Mixed Use
- Industrial
- Public Facility
- Open Space
- Water

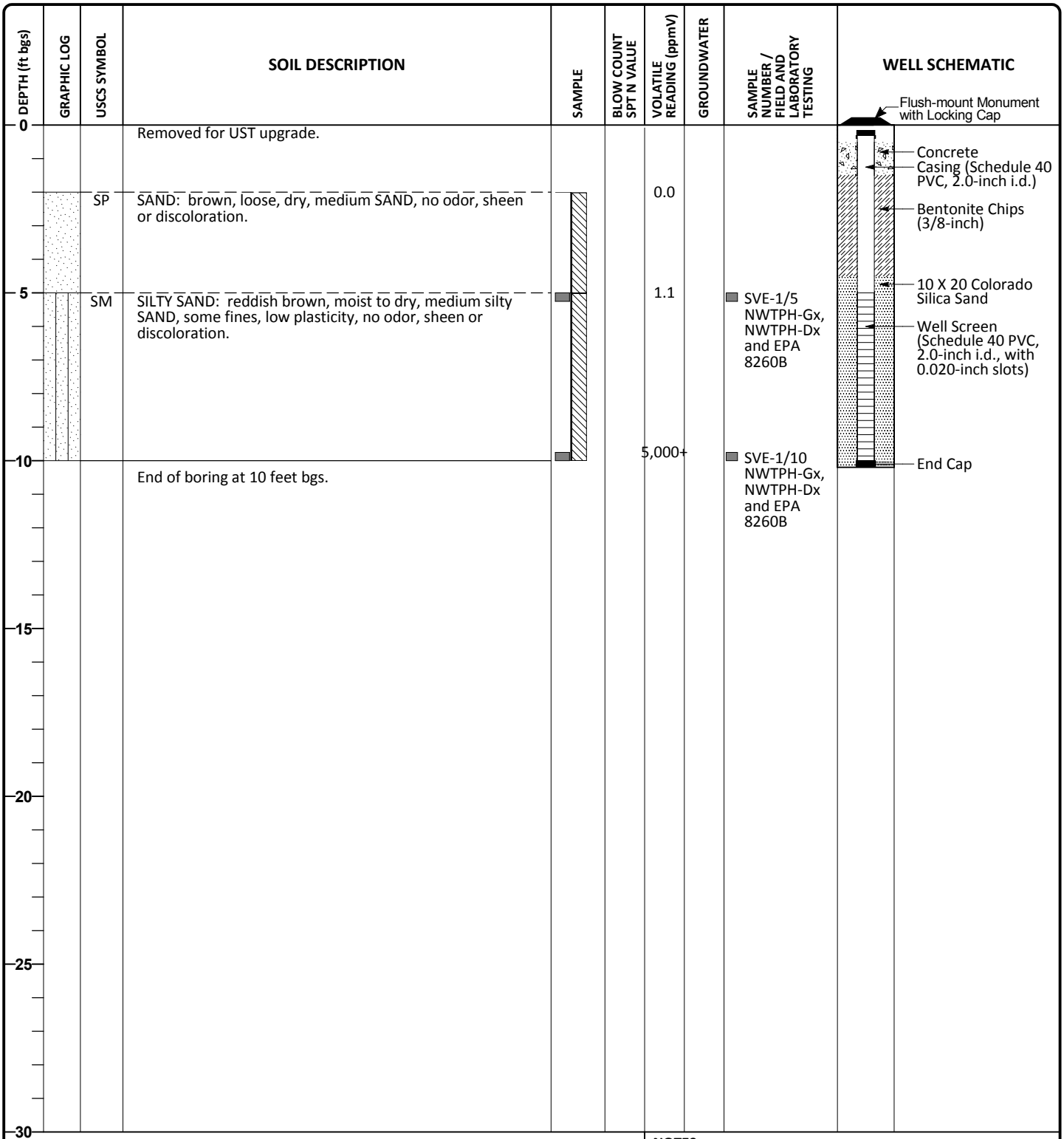
0 0.25 0.5 Miles

N

Updated by Ord M-3994
Effective December 7, 2011



Appendix B



BORING METHOD: Direct Push
BOREHOLE DIAMETER:
DRILL RIG: NA
CONTRACTOR: Major Drilling/KV
LOGGED BY/REVIEWED BY: JG/LF

ELEVATION REFERENCE: NA
GROUND SURFACE ELEVATION: NA
CASING ELEVATION: NA
START CARD/TAG ID: NA
DRILLING DATES: 2/3/2012 - 2/3/2012

NOTES:

Plaid Pantry #112
1002 W. Fourth Plain Blvd
Vancouver, WA

E-1179-01

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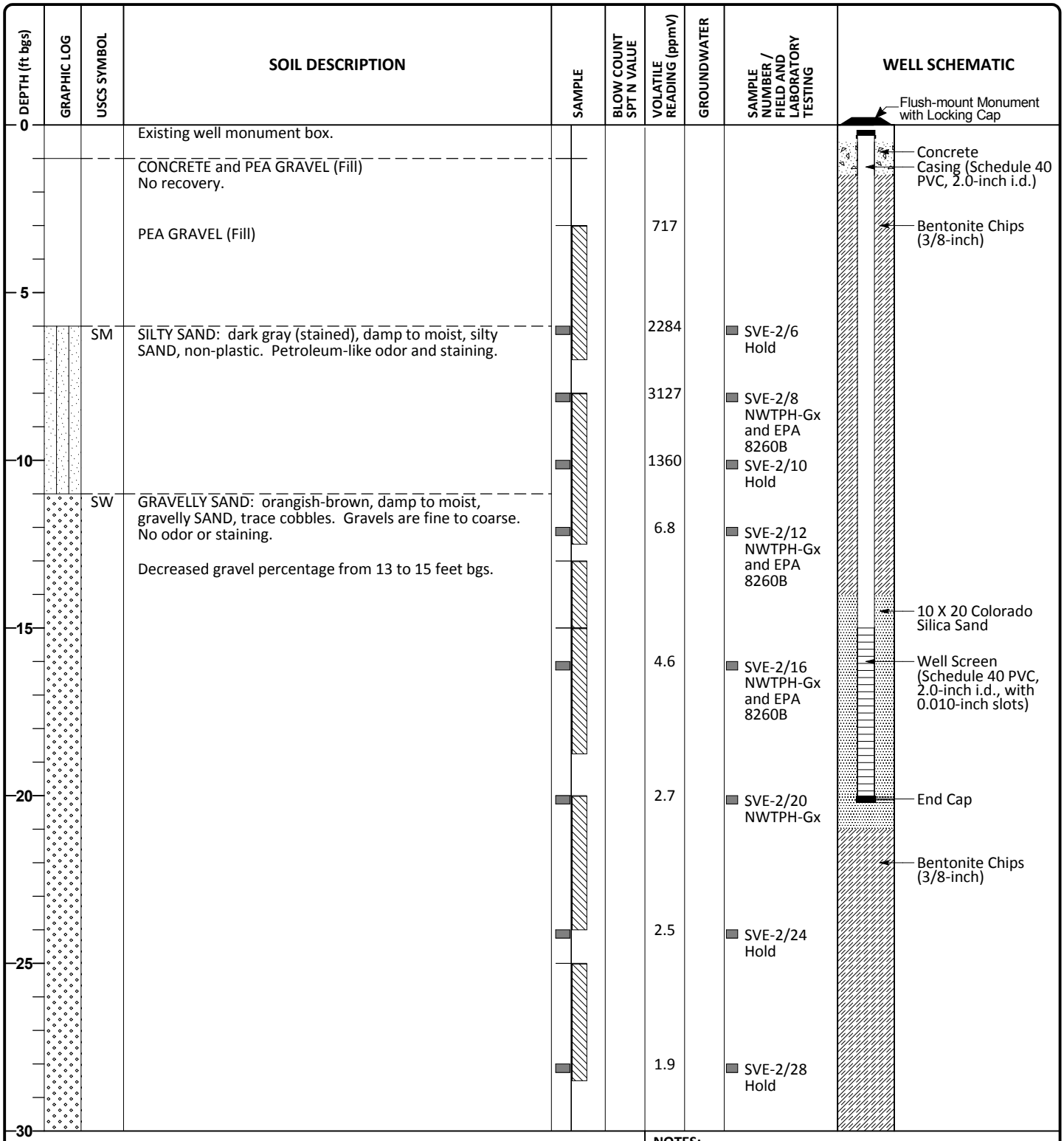
LOG OF BORING SVE-1



BORING METHOD: Direct Push
BOREHOLE DIAMETER:
DRILL RIG: NA
CONTRACTOR: Pacific Soil & Water/NK
LOGGED BY/REVIEWED BY: AC/LF

ELEVATION REFERENCE: NA
GROUND SURFACE ELEVATION: NA
CASING ELEVATION: NA
START CARD/TAG ID: NA
DRILLING DATES: 8/17/2012 - 8/17/2012

NOTES:

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Vancouver, WA

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LOG OF BORING SVE-2

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppmV)	GROUNDWATER	SAMPLE NUMBER / FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		SW							
		SP	SAND: light brown, dry to damp, fine SAND, trace fines.			1.7		SVE-2/32 Hold	Bentonite Chips (3/8-inch)
35			No recovery. Sample liner melted in sampler.						
			End of boring at 39 feet bgs due to refusal.						
40									
45									
50									
55									
60									

BORING METHOD: Direct Push
BOREHOLE DIAMETER:
DRILL RIG: NA
CONTRACTOR: Pacific Soil & Water/NK
LOGGED BY/REVIEWED BY: AC/LF

ELEVATION REFERENCE: NA
GROUND SURFACE ELEVATION: NA
CASING ELEVATION: NA
START CARD/TAG ID: NA
DRILLING DATES: 8/17/2012 - 8/17/2012

NOTES:

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1002 W. Fourth Plain Blvd
Vancouver, WA

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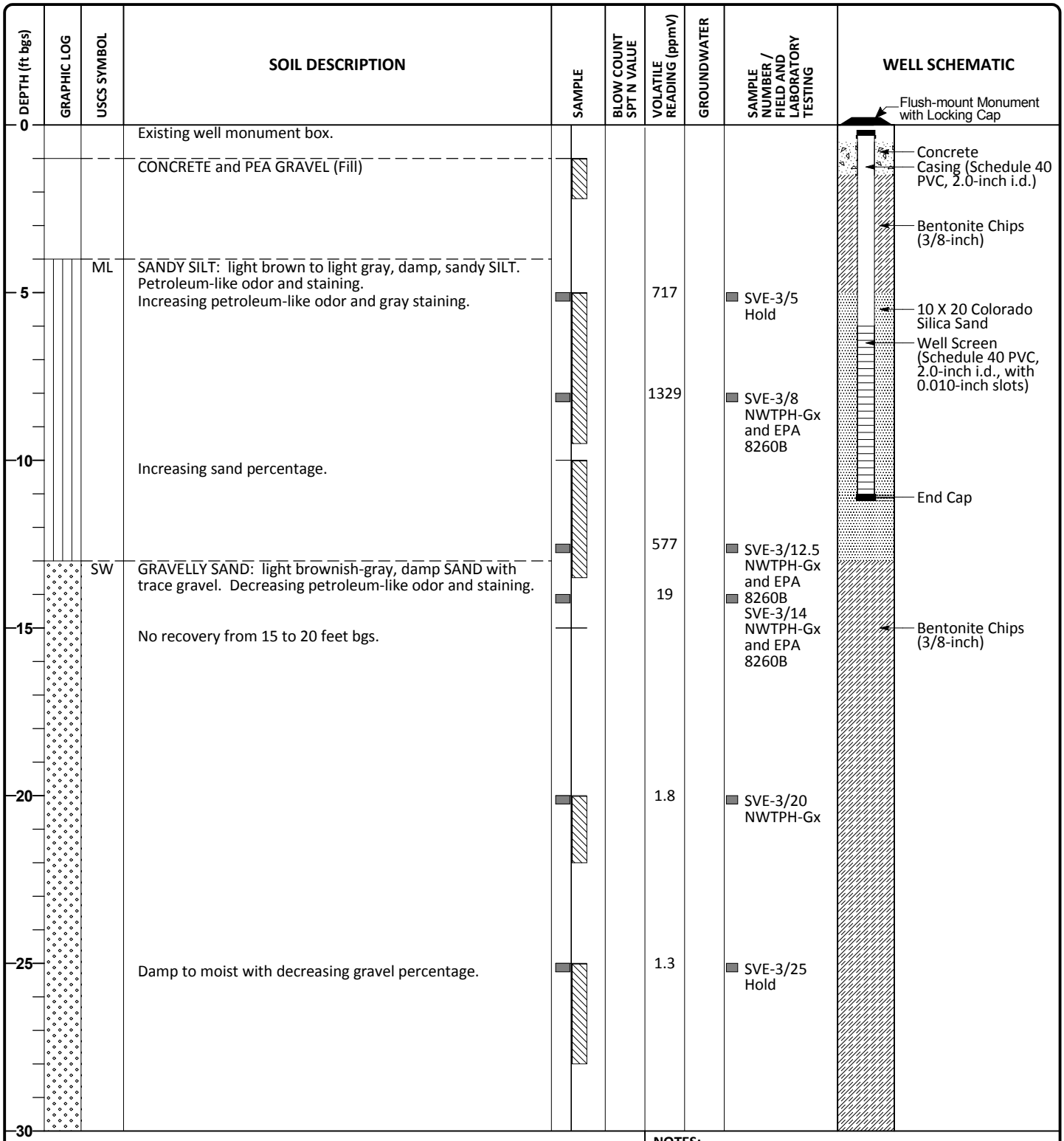
LOG OF BORING SVE-2



BORING METHOD: Direct Push
BOREHOLE DIAMETER:
DRILL RIG: NA
CONTRACTOR: Pacific Soil & Water/NK
LOGGED BY/REVIEWED BY: AC/LF

ELEVATION REFERENCE: NA
GROUND SURFACE ELEVATION: NA
CASING ELEVATION: NA
START CARD/TAG ID: NA
DRILLING DATES: 8/16/2012 - 8/16/2012

NOTES:

Plaid Pantry #112
1002 W. Fourth Plain Blvd
Vancouver, WA

E-1179-01

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LOG OF BORING SVE-3

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppmV)	GROUNDWATER	SAMPLE NUMBER / FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		SW				17		SVE-3/31 Hold	Bentonite Chips (3/8-inch)
35			Increased grain-size up to coarse and trace fine subrounded gravel.			3.7		SVE-3/37 Hold	
40			End of boring at 40 feet bgs due to refusal.						
45									
50									
55									
60									

BORING METHOD: Direct Push
BOREHOLE DIAMETER:
DRILL RIG: NA
CONTRACTOR: Pacific Soil & Water/NK
LOGGED BY/REVIEWED BY: AC/LF

ELEVATION REFERENCE: NA
GROUND SURFACE ELEVATION: NA
CASING ELEVATION: NA
START CARD/TAG ID: NA
DRILLING DATES: 8/16/2012 - 8/16/2012

NOTES:

Plaid Pantry #112
1002 W. Fourth Plain Blvd
Vancouver, WA

E-1179-01

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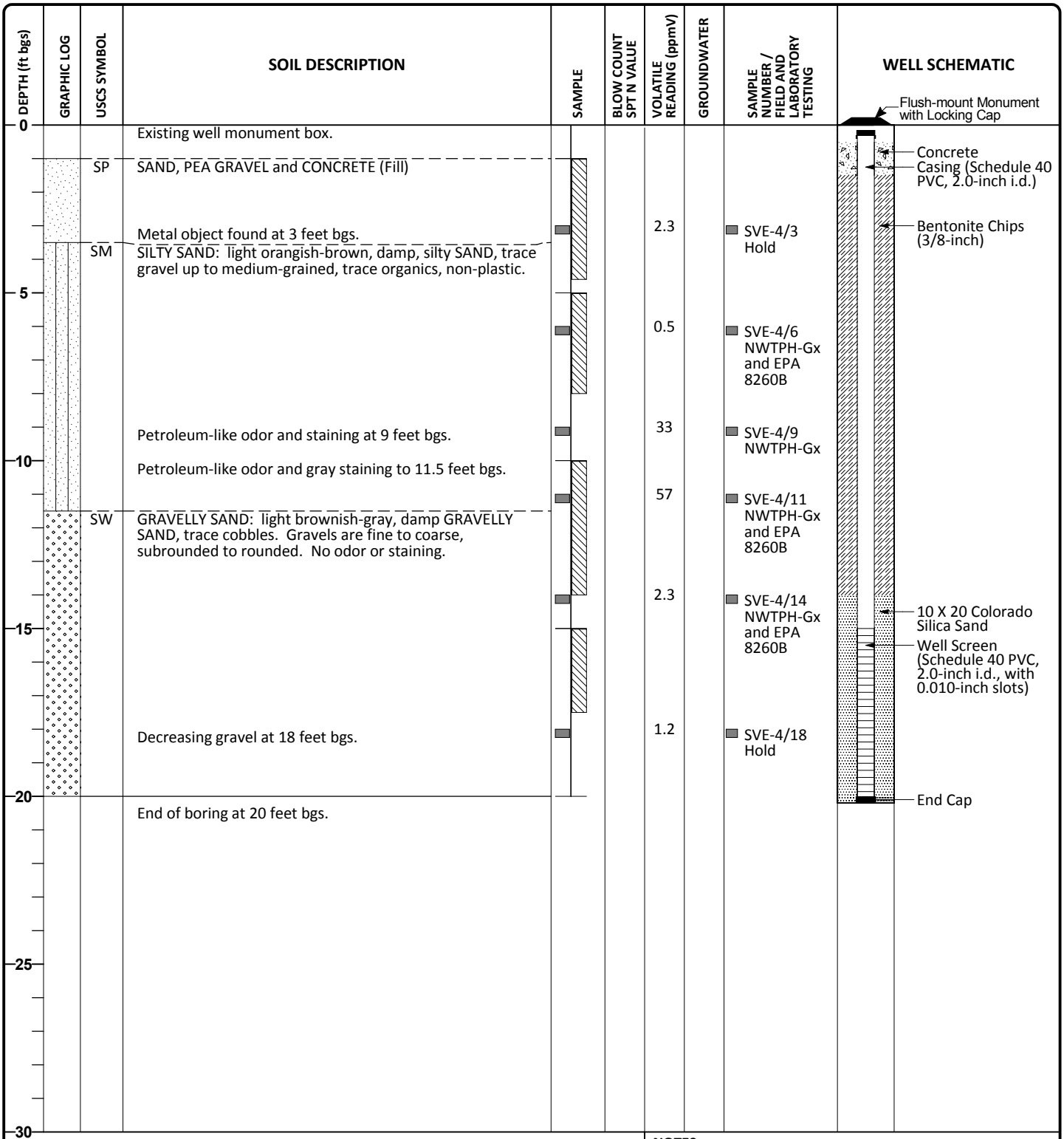
Tel (503) 847-2740

LOG OF BORING SVE-3



BORING METHOD: Direct Push
BOREHOLE DIAMETER:
DRILL RIG: NA
CONTRACTOR: Pacific Soil & Water/NK
LOGGED BY/REVIEWED BY: AC/LF

ELEVATION REFERENCE: NA
GROUND SURFACE ELEVATION: NA
CASING ELEVATION: NA
START CARD/TAG ID: NA
DRILLING DATES: 8/17/2012 - 8/17/2012

NOTES:

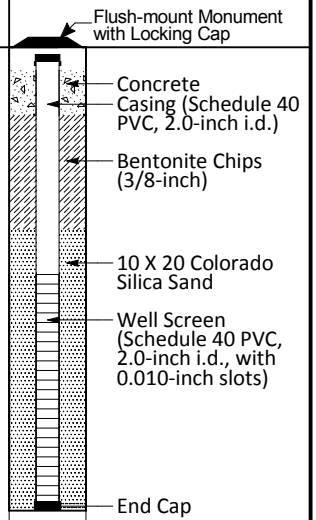
Plaid Pantry #112
1002 W. Fourth Plain Blvd
Vancouver, WA

E-1179-01

EES Environmental Consulting, Inc.
240 N Broadway, Suite 115
Portland, Oregon 97227
Tel (503) 847-2740

LOG OF BORING SVE-4

DEPTH (ft bgs)	USCS SYMBOL	SOIL DESCRIPTION	VOLATILE READING (ppmV)	SAMPLE NUMBER / FIELD AND LABORATORY TESTING
0		Existing well monument box.		
	ML	SANDY SILT: light brown, damp, sandy SILT, low plasticity. Poor recovery.		
5		Petroleum-like odor and gray staining at 6 feet bgs.	12	SVE-5/5 NWTPH-Gx and EPA 8260B
			1379	SVE-5/7.5 NWTPH-Gx and EPA 8260B
	SM	SILTY SAND: gray, damp, silty SAND, non-plastic.		
10		End of boring at 10 feet bgs.	323	
15				
20				
25				
30				



BORING METHOD: Direct Push
BOREHOLE DIAMETER:
DRILL RIG: NA
CONTRACTOR: Pacific Soil & Water/d
LOGGED BY/REVIEWED BY: AC/LF

ELEVATION REFERENCE: NA
GROUND SURFACE ELEVATION: NA
CASING ELEVATION: NA
START CARD/TAG ID: NA
DRILLING DATES: 8/16/2012 - 8/16/2012

NOTES:

Plaid Pantry #112
1002 W. Fourth Plain Blvd
Vancouver, WA

E-1179-01

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LOG OF BORING SVE-5

Appendix C

Technical Assessment Services, Inc.

MEMORANDUM

To: Chris Rhea, EES Environmental

From: Regina Skarzinskas, TAS

Date: 13 December 2013

Re: Terrestrial Ecological Evaluation (TEE) – Plaid 112

Technical Assessment Services, Inc. (TAS) was tasked to complete a TEE for the Plaid Pantry Store 112 (Site). The purpose of the TEE is to evaluate the potential for unacceptable impacts to land-based plants and animals from exposure to contaminated soil.

The first step in the TEE process is to determine if a terrestrial evaluation is needed or if the site qualifies for an exemption. The primary exclusions are based on the location and concentration of potentially hazardous substances and the potential for complete pathways of exposure on-site and off-site. The TEE Documentation Form is attached and discussed below.

Exclusion 1 – Contaminant Analysis – Location

The site consists of a commercial building and fueling station. The fueling station is associated with Plaid Pantries, Inc. which has been in operation since 1983. During a fuel system upgrade in early 2012 an abandoned and previously unknown underground fuel tank was discovered, just south of the current fuel dispensing island. This tank was removed in February 2012. Confirmation sampling determined the presence of some residual soil contamination.

Of the seventeen analytes tested, twelve were not detected. The chemicals of potential concern (COPCs) were identified as gasoline, diesel, heavy oil, ethyl benzene and xylenes. With the exception of gasoline, none of the constituents exceeded MTCA A Cleanup Levels. Concentrations of gasoline exceeded MTCA A values only at the south and west walls of the excavation pit at 2 ft. A Dixon Test for outliers determined that these concentrations were considered to be outliers.

The abandoned UST is located near the fuel stations and all soil is covered. Because of the asphalt cover, proximity to the fuel pumping stations and commercial activity in the vicinity of the abandoned tank, contact with any wildlife receptors is highly unlikely. Concentrations of gasoline at all other locations on the Site did not exceed MTCA A cleanup values.

The biologically active zone for ecological receptors is considered to be 0 – 6 ft. below ground surface (bgs) under MTCA guidance. This Site is an active commercial site, located off of a busy urban street. MTCA Guidance stipulates that for commercial and industrial sites, plants and biota need not be considered. The ecological receptor of concern to be protected is wildlife. The Site is generally covered with a commercial building or asphalt

parking lot. Although there are some landscaped areas, these areas are too small to be considered suitable habitat for most wildlife. Therefore, for this site, it is unlikely that wildlife will come in contact with soil below 2 ft. bgs.

The Site qualifies for this exclusion.

Exclusion 2 – Pathway Analysis – Complete pathways.

The Site is a retail location which contains a commercial building, fuel island and paved parking. Small areas of landscaping bound the Site on the East and South along Kauffman Avenue and West Fourth Plain Blvd respectively. These areas are relatively small and located alongside busy city streets. They are neither sufficiently large enough to support significant ecological habitat, nor in a location where ecological receptors would congregate in large quantities or for an extended length of time. Based on the location, the Site qualifies for this exclusion.

Concentrations throughout the site, with the exception of S/2 and W/2, are below MTCA A Cleanup Levels and protective of wildlife. The two exceedances are located 2 ft. bgs along the south and west walls of the excavation. Because of the location, cover and commercial activity on site reasonably likely pathways of exposure are incomplete and contact with wildlife is highly unlikely. The Site qualifies for this exclusion.

Exclusion 3 – Pathway Analysis – contiguous undeveloped land

None of the chemicals listed in the Table of Hazardous Substances of Concern have been detected on Site. The Site is a retail location in a developed, commercially-zoned area. The Site is 0.26 acres in size. There is no undeveloped land on the Site.

Approximately 50 ft. from the contaminated area is a vacant lot. Although the property is not developed, it is highly disturbed. The eastern boundary of the vacant lot is actively used as a parking lot and regularly occupied by cars. The central portion of the lot is generally devoid of vegetation as it is used as a truck turnaround. The western portion consists of a grassy area with no trees or cover bounded by West 4thh Plain Blvd and Lincoln Avenue. The size, location and disturbed nature of this vacant lot significantly limits the potential use of the overall area by wildlife (WAC 173-340-7490(1)(c)(iii)). Therefore, significant development of ecological habitat and numbers of ecological receptors in this area is highly unlikely. The Site qualifies for this exclusion.

Exclusion 4 – Contaminant Analysis – Natural Background

Concentrations of lead at the point of compliance (biologically active zone) do not exceed the background concentration for lead in Washington soil (17 ppm).

Based on an evaluation of pathways and potential chemicals of concern, the Site qualifies for each of the four potential exclusions. Therefore, a TEE is not required for this Site. Concentrations of chemicals of concern are low at the point of compliance, meet MTCA Method A requirements for unrestricted land use and do not exceed wildlife criteria where applicable.

ATTACHMENTS

TEE – Primary Exclusions

Site Photos

Data and Screening Table

ATTACHMENT 2

PHOTOS

Aerial Photo of Site -

Right – commercial building with the fuel station on the corner

Left – vacant lot with truck turnaround visible.

Commercial Site with parking lot

Commercial building and parking lot area north of fueling station

Fueling station.

Abandoned tank located just south of canopied fueling station.

TABLE 1
Soil Analytical Results - Gasoline, Diesel, and Related Constituents (mg/kg)
Plaid Pantry No. 112
Vancouver, Washington

Location	Date	Sample Depth (feet)	Gasoline	Diesel	Heavy Oil/Lube	Benzene	Toluene	Ethylbenzene	Xylenes	EDB	EDC	MTBE	Naphthalene	Lead	PCE	TCE	2-Butanone	Carbon Tetrachloride	1,1,1-Trichloroethane
MTCA Method A[c] Soil Cleanup Levels Unrestricted Use			100,30[d]	2,000	2,000	0.03	7	6	9	0.005	NA	0.1	5	250	0.05	0.03	NA	NA	2
B1-3	09/08/2011	3	24 U	59 U	118 U	0.0061 U	0.022 U	0.014 J	0.040 J	0.013 U	0.011 U	0.026 U	0.044 U	-	0.011 U	0.016 U	0.22 U	0.011 U	0.011 U
B1-9	09/08/2011	9	22 U	54 U	108 U	0.0072 U	0.026 U	0.013 U	0.039 U	0.016 U	0.013 U	0.031 U	0.051 U	8.3	0.013 U	0.019 U	0.26 U	0.013 U	0.013 U
B1-15	09/08/2011	15	21 U	52 U	103 U	0.0073 U	0.026 U	0.013 U	0.039 U	0.016 U	0.013 U	0.031 U	0.052 U	-	0.013 U	0.019 U	0.26 U	0.013 U	0.013 U
B2-3	09/07/2011	3	21 U	53 U	107 U	0.0061 U	0.022 U	0.011 U	0.032 U	0.013 U	0.011 U	0.026 U	0.043 U	-	0.011 U	0.016 U	0.22 U	0.011 U	0.011 U
B2-9	09/07/2011	9	25 U	12 U[b1]	54 [b1]	0.0049 U	0.018 U	0.0088 U	0.026 U	0.011 U	0.0088 U	0.021 U	0.005 U[f]	-	0.009 U	0.013 U	0.18 U	0.009 U	0.0088 U
B2-15	09/09/2011	15	21 U	53 U	105 U	0.0038 U	0.014 U	0.0068 U	0.020 U	0.0082 U	0.0068 U	0.016 U	0.027 U	-	0.007 U	0.010 U	0.14 U	0.007 U	0.0068 U
B3-3	09/07/2011	3	23 U	57 U	113 U	0.0066 U	0.024 U	0.012 U	0.035 U	0.014 U	0.012 U	0.028 U	0.047 U	-	0.012 U	0.017 U	0.24 U	0.012 U	0.012 U
B3-9	09/07/2011	9	26 U	64 U	128 U	0.0076 U	0.028 U	0.014 U	0.042 U	0.017 U	0.014 U	0.033 U	0.055 U	12	0.014 U	0.020 U	0.28 U	0.014 U	0.014 U
B4-3	09/07/2011	3	23 U	57 U	114 U	0.0071 U	0.026 U	0.013 U	0.038 U	0.015 U	0.013 U	0.030 U	0.051 U	-	0.013 U	0.018 U	0.26 U	0.013 U	0.013 U
B4-9	09/07/2011	9	21 U	53 U	106 U	0.0068 U	0.024 U	0.012 U	0.036 U	0.015 U	0.012 U	0.029 U	0.049 U	-	0.012 U	0.018 U	0.24 U	0.012 U	0.012 U
B5-3	09/08/2011	3	22 U	56 U	112 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B5-6	09/08/2011	6	2,900 [a]	>57 [e]	114 U	0.16 U	0.56 U	12	74	0.34 U	0.28 U	0.67 U	14	21	0.28 U	0.41 U	5.6 U	0.28 U	0.28 U
B5-9	09/08/2011	9	4,070 [a]	>54 [e]	108 U	0.13 U	0.82 J	29	121	0.29 U	0.24 U	0.57 U	8.8	11	0.24 U	0.34 U	4.8 U	0.24 U	0.24 U
B5-12.5	09/08/2011	12.5	444 [a]	638 [b,e]	22.9 U[b]	2.1	0.12 J	5.3	21	0.038 U	0.031 U	0.082 U	1.1	13	0.031 U	0.045 U	1.3 U	0.038 U	0.063 U
B5-20	09/08/2011	20	1.5 U[a]	-	-	0.0041 U	0.015 U	0.0073 U	0.022 U	0.0088 U	0.0073 U	0.017 U	0.029 U	-	0.007 U	0.011 U	0.15 U	0.007 U	0.0073 U
B6-3	09/08/2011	3	22 U	54 U	107 U	0.0054 U	0.019 U	0.0096 U	0.029 U	0.012 U	0.010 U	0.023 U	0.039 U	-	0.010 U	0.014 U	0.19 U	0.010 U	0.010 U
B6-9	09/08/2011	9	23 U	58 U	116 U	0.0052 U	0.019 U	0.0093 U	0.028 U	0.011 U	0.0093 U	0.022 U	0.037 U	-	0.010 U	0.013 U	0.19 U	0.009 U	0.0093 U
B6-12	09/09/2011	12	26 U	64 U	128 U	0.0061 U	0.022 U	0.011 U	0.033 U	0.013 U	0.011 U	0.026 U	0.044 U	-	0.011 U	0.016 U	0.22 U	0.011 U	0.011 U
SVE-1/5.0	02/03/2012	5	22 U	55 U	110 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SVE-1/10.0	02/03/2012	10	2,750 [a]	>56 [e]	112 U	0.39	48	40	301	0.19 U	0.16 U	0.37 U	13	7.6	0.16 U	0.22 U	3.1 U	0.31 U	0.16 U
PIT S/1.5	02/14/2012	1.5	23 U	20 J[b]	116 [b]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tank Sludge	02/14/2012	N/A	2,410 [a]	>172 [e]	345 U	0.040 J	1.9	2.7	19	0.057 U	0.047 U	0.11 U	7.1 [f]	-	0.047 U	0.068 U	2.8 U	0.094 U	0.047 U
PIT N/2	02/14/2012	2	21 U	52 U	104 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PIT N/6	02/14/2012	6	4.3 U[a]	>57 [e]	113 U	0.012 U	0.043 U	0.022 U	0.14	0.026 U	0.022 U	0.052 U	0.095 J	-	0.022 U	0.031 U	0.43 U	0.022 U	0.022 U
PIT S/2	02/14/2012	2	1,320 [a]	>54 [e]	109 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PIT S/6	02/14/2012	6	5,800 [a]	>62 [e]	124 U	3.4	23	78	411	0.49 U	0.40 U	0.96 U	34	-	0.40 U	0.58 U	16 U	0.40 U	0.40 U
PIT E/2	02/14/2012	2	24 U	60 U	120 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PIT E/6	02/14/2012	6	64,200 [a]	>62 [e]	123 U	93	3,570	1,350	9,090	4.0 U	3.3 U	7.8 U	241	-	3.3 U	4.7 U	182 U	6.5 U	3.3 U
PIT W/2	02/14/2012	2	1,210 [a]	>59 [e]	118 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PIT W/6	02/14/2012	6	18,700 [a]	>61 [e]	122 U	26	572	296	1,693	0.98 U	0.81 U	1.9 U	67	-	0.81 U	1.2 U	48 U	1.6 U	0.81 U
PIT Floor/6	02/14/2012	6	34,900 [a]	2,660 [b]	81 U[b]	56	1,460	609	3,605	0.49 U	0.40 U	0.96 U	27 [f]	-	0.40 U	0.58 U	105 U	0.81 U	0.40 U

TABLE 1
Soil Analytical Results - Gasoline, Diesel, and Related Constituents (mg/kg)
Plaid Pantry No. 112
Vancouver, Washington

Location	Date	Sample Depth (feet)	Gasoline	Diesel	Heavy Oil/Lube	Benzene	Toluene	Ethylbenzene	Xylenes	EDB	EDC	MTBE	Naphthalene	Lead	PCE	TCE	2-Butanone	Carbon Tetrachloride	1,1,1-Trichloroethane
MTCA Method A[c] Soil Cleanup Levels Unrestricted Use			100,30[d]	2,000	2,000	0.03	7	6	9	0.005	NA	0.1	5	250	0.05	0.03	NA	NA	2
B-7/6	08/16/2012	6	473 [a]	-	-	0.12 U	0.43 U	2.1	12	0.011 U[g]	0.21 U	0.51 U	0.85 U	-	0.21 U	0.31 U	4.3 U	0.21 U	0.21 U
B-7/9	08/16/2012	9	1,730 [a]	-	-	0.80	0.41 U	0.89	0.62 U	0.25 U	0.21 U	0.49 U	0.82 U	-	0.21 U	0.30 U	4.1 U	0.21 U	0.21 U
B-7/13	08/16/2012	13	303 [a]	-	-	0.15	0.045 U	0.17	0.25	0.0089 U[g]	0.022 U	0.053 U	0.30	-	0.022 U	0.032 U	0.89 U	0.022 U	0.022 U
B-7/14	08/16/2012	14	2.9 U [a]	-	-	0.0081 U	0.029 U	0.015 U	0.044 U	0.0029 U[g]	0.015 U	0.035 U	0.058 U	-	0.015 U	0.021 U	0.29 U	0.015 U	0.015 U
B-8/6	08/16/2012	6	4.2 U [a]	-	-	0.026	0.042 U	0.072	0.29	0.0042 U[g]	0.021 U	0.050 U	0.084 U	-	0.021 U	0.031 U	0.42 U	0.021 U	0.021 U
B-8/9	08/16/2012	9	3.7 U [a]	-	-	0.042	0.037 U	0.019 U	0.25	0.023 U	0.019 U	0.044 U	0.074 U	-	0.019 U	0.027 U	0.37 U	0.019 U	0.019 U
B-8/13	08/16/2012	13	4.4 U [a]	-	-	0.012 U	0.044 U	0.022 U	0.067 U	0.0043 U[g]	0.022 U	0.053 U	0.089 U	-	0.022 U	0.032 U	0.44 U	0.022 U	0.022 U
B-9/3	08/13/2012	3	2.9 U[a]	59 U	117 U	0.0080 U	0.029 U	0.014 U	0.043 U	0.017 U	0.014 U	0.034 U	0.057 U	-	0.014 U	0.021 U	0.29 U	0.014 U	0.014 U
B-9/6	08/13/2012	6	2.6 U[a]	-	-	0.0072 U	0.026 U	0.013 U	0.039 U	0.016 U	0.013 U	0.031 U	0.052 U	-	0.013 U	0.019 U	0.26 U	0.013 U	0.013 U
B-9/9	08/13/2012	9	4.1 U[a]	-	-	0.011 U	0.041 U	0.020 U	0.061 U	0.025 U	0.020 U	0.049 U	0.082 U	-	0.020 U	0.030 U	0.41 U	0.020 U	0.020 U
B-9/13	08/13/2012	13	2.9 U[a]	-	-	0.0082 U	0.029 U	0.015 U	0.044 U	0.018 U	0.015 U	0.035 U	0.059 U	-	0.015 U	0.021 U	0.29 U	0.015 U	0.015 U
B-10/3	08/13/2012	3	2.7 U[a]	55 U	109 U	0.0075 U	0.027 U	0.013 U	0.040 U	0.016 U	0.013 U	0.032 U	0.054 U	-	0.013 U	0.019 U	0.27 U	0.013 U	0.013 U
B-10/6	08/13/2012	6	4.6 U[a]	-	-	0.013 U	0.046 U	0.023 U	0.069 U	0.028 U	0.023 U	0.055 U	0.092 U	-	0.023 U	0.033 U	0.46 U	0.023 U	0.023 U
B-10/9	08/13/2012	9	5.6 U[a]	-	-	0.016 U	0.056 U	0.028 U	0.084 U	0.034 U	0.028 U	0.067 U	0.11 U	-	0.028 U	0.041 U	0.56 U	0.028 U	0.028 U
B-10/13	08/13/2012	13	2.4 U[a]	-	-	0.0061 U	0.024 U	0.012 U	0.035 U	0.014 U	0.012 U	0.028 U	0.047 U	-	0.012 U	0.017 U	0.24 U	0.012 U	0.012 U
B-10/18	08/13/2012	18	20 U	51 U	102 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-11/3	08/14/2012	3	13 [a]	56 U	113 U	0.010 U	0.034 U	0.017 U	0.051 U	0.021 U	0.017 U	0.041 U	0.068 U	-	0.017 U	0.025 U	0.34 U	0.017 U	0.017 U
B-11/6	08/14/2012	6	20,400 [a]	62 X	123 U	3.7	0.81 U	3.9	1.4 U	0.25 U	0.20 U	0.49 U	57	24	0.20 U	0.30 U	4.1 U	0.204 U	0.20 U
B-11/9	08/14/2012	9	1,560 [a]	-	-	0.47	0.10 U	0.62	0.12 U	0.029 U	0.024 U	0.057 U	1.9	-	0.024 U	0.035 U	2.7 U	0.024 U	0.024 U
B-11/11	08/14/2012	11	5.7 U[a]	-	-	0.0080 U	0.029 U	0.014 U	0.043 U	0.0029 U[g]	0.014 U	0.034 U	0.057 U	3.3	0.014 U	0.021 U	0.29 U	0.014 U	0.014 U
B-11/17	08/14/2012	17	2.8 U[a]	-	-	0.0079 U	0.028 U	0.014 U	0.042 U	0.017 U	0.014 U	0.034 U	0.056 U	-	0.014 U	0.020 U	0.28 U	0.014 U	0.014 U
B-11/23	08/14/2012	23	20 U	51 U	102 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-11/29	08/14/2012	29	20 U	51 U	102 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-12/3	08/14/2012	3	2.6 U[a]	58 U	116 U	0.0073 U	0.026 U	0.013 U	0.039 U	0.016 U	0.013 U	0.031 U	0.052 U	-	0.013 U	0.019 U	0.26 U	0.013 U	0.013 U
B-12/6	08/14/2012	6	4.0 U[a]	-	-	0.011 U	0.040 U	0.020 U	0.060 U	0.024 U	0.020 U	0.048 U	0.081 U	-	0.020 U	0.029 U	0.40 U	0.020 U	0.020 U
B-12/9	08/14/2012	9	4.8 U[a]	-	-	0.013 U	0.048 U	0.024 U	0.072 U	0.029 U	0.024 U	0.057 U	0.096 U	-	0.024 U	0.035 U	0.48 U	0.024 U	0.024 U
B-12/13	08/14/2012	13	4.0 U[a]	-	-	0.011 U	0.040 U	0.020 U	0.061 U	0.025 U	0.020 U	0.048 U	0.081 U	-	0.020 U	0.029 U	0.40 U	0.020 U	0.020 U
B-12/18	08/14/2012	18	20 U	50 U	100 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-13/3	08/15/2012	3	3.9 U[a]	-	-	0.011 U	0.039 U	0.019 U	0.058 U	0.024 U	0.019 U	0.046 U	0.078 U	-	0.019 U	0.028 U	0.39 U	0.019 U	0.019 U
B-13/6	08/15/2012	6	3.2 U[a]	-	-	0.0091 U	0.032 U	0.016 U	0.049 U	0.020 U	0.016 U	0.039 U	0.065 U	-	0.016 U	0.023 U	0.32 U	0.016 U	0.016 U
B-13/9	08/15/2012	9	3.4 U[a]	-	-	0.0096 U	0.034 U	0.017 U	0.051 U	0.021 U	0.017 U	0.041 U	0.069 U	-	0.017 U	0.025 U	0.34 U	0.017 U	0.017 U
B-13/13	08/15/2012	13	4.0 U[a]	-	-	0.011 U	0.040 U	0.020 U	0.060 U	0.024 U	0.020 U	0.048 U	0.080 U	-	0.020 U	0.029 U	0.40 U	0.020 U	0.020 U
B-14/3	08/15/2012	3	3.3 U[a]	-	-	0.0092 U	0.033 U	0.017 U	0.049 U	0.020 U	0.017 U	0.039 U	0.066 U	-	0.017 U	0.024 U	0.33 U	0.017 U	0.017 U
B-14/6	08/15/2012	6	3.5 U[a]	-	-	0.0098 U	0.035 U	0.018 U	0.053 U	0.021 U	0.018 U	0.042 U	0.070 U	-	0.018 U	0.025 U	0.35 U	0.018 U	0.018 U
B-14/9	08/15/2012	9	3.8 U[a]	-	-	0.011 U	0.038 U	0.019 U	0.057 U	0.023 U	0.019 U	0.045 U	0.076 U	-	0.019 U	0.027 U	0.38 U	0.019 U	0.019 U
B-14/13	08/15/2012	13	3.1 U[a]	-	-	0.0087 U	0.031 U	0.016 U	0.047 U	0.019 U	0.016 U	0.037 U	0.062 U	-	0.016 U	0.023 U	0.31 U	0.016 U	0.016 U
B-15/3	08/15/2012	3	3.3 U[a]	-	-	0.0092 U	0.033 U	0.017 U	0.049 U	0.020 U	0.017 U	0.039 U	0.066 U	-	0.017 U	0.024 U	0.33 U	0.017 U	0.017 U
B-15/6	08/15/2012	6	4.0 U[a]	-	-	0.011 U	0.040 U	0.020 U	0.059 U	0.024 U	0.020 U	0.047 U	0.079 U	-	0.020 U	0.029 U	0.40 U	0.020 U	0.020 U
B-15/9	08/15/2012	9	3.8 U[a]	-	-	0.011 U	0.038 U	0.019 U	0.057 U	0.023 U	0.019 U	0.045 U	0.076 U	-	0.019 U	0.027 U	0.38 U	0.019 U	0.019 U
B-15/13	08/15/2012	13	3.1 U[a]	-	-	0.0087 U	0.031 U	0.016 U	0.047 U	0.019 U	0.016 U	0.037 U	0.062 U	-	0.016 U	0.023 U	0.31 U	0.016 U	0.016 U
B-16/6	08/16/2012	6	2.9 U[a]	-	-	0.0081 U	0.029 U	0.015 U	0.044 U	0.0029 U[g]	0.015 U	0.035 U	0.058 U	11	0.015 U	0.021 U	0.29 U	0.015 U	0.015 U
B-16/9	08/16/2012	9	4.0 U[a]	-	-	0.011 U	0.040 U	0.020 U	0.060 U	0.024 U	0.020 U	0.048 U	0.080 U	12	0.020 U	0.029 U	0.40 U	0.020 U	0.020 U
B-16/13	08/16/2012	13	3.0 U[a]	-	-	0.0083 U	0.030 U	0.015 U	0.044 U	0.0030 U[g]	0.015 U	0.035 U	0.059 U	-	0.015 U	0.021 U	0.30 U	0.015 U	0.015 U

TABLE 1
Soil Analytical Results - Gasoline, Diesel, and Related Constituents (mg/kg)
Plaid Pantry No. 112
Vancouver, Washington

Location	Date	Sample Depth (feet)	Gasoline	Diesel	Heavy Oil/Lube	Benzene	Toluene	Ethylbenzene	Xylenes	EDB	EDC	MTBE	Naphthalene	Lead	PCE	TCE	2-Butanone	Carbon Tetrachloride	1,1,1-Trichloroethane
MTCA Method A[c] Soil Cleanup Levels Unrestricted Use			100,30[d]	2,000	2,000	0.03	7	6	9	0.005	NA	0.1	5	250	0.05	0.03	NA	NA	2
SVE-2/8	08/16/2012	8	6,800 [a]	-	-	14	48	96	436	0.27 U	0.22 U	0.54 U	27	11	0.24 U	0.32 U	4.5 U	0.22 U	0.22 U
SVE-2/12	08/16/2012	12	2.9 U[a]	-	-	0.0080 U	0.029 U	0.014 U	0.043 U	0.0029 U[g]	0.014 U	0.034 U	0.057 U	2.8	0.014 U	0.021 U	0.29 U	0.014 U	0.014 U
SVE-2/16	08/16/2012	16	3.5 U[a]	-	-	0.0098 U	0.035 U	0.018 U	0.053 U	0.0035 U[g]	0.018 U	0.042 U	0.070 U	-	0.018 U	0.025 U	0.35 U	0.018 U	0.018 U
SVE-2/20	08/16/2012	20	3.0 U[a]	-	-	0.0083 U	0.030 U	0.015 U	0.044 U	0.018 U	0.015 U	0.035 U	0.059 U	-	0.015 U	0.021 U	0.30 U	0.015 U	0.015 U
SVE-3/5	08/16/2012	5	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	-	-
SVE-3/8	08/16/2012	8	3,820 [a]	-	-	6.5	117	70	389	0.36 U	0.30 U	0.72 U	16	10	0.30 U	0.43 U	12 U	0.30 U	0.30 U
SVE-3/12.5	08/16/2012	12.5	216 [a]	-	-	1.5	4.8	3.9	21	0.0036 U[g]	0.18 U	0.43 U	0.72 U	-	0.18 U	0.26 U	3.6 U	0.18 U	0.18 U
SVE-3/14	08/16/2012	14	3.1 U[a]	-	-	0.0087 U	0.031 U	0.016 U	0.047 U	0.0031 U[g]	0.016 U	0.037 U	0.063 U	-	0.016 U	0.023 U	0.31 U	0.016 U	0.016 U
SVE-3/20	08/16/2012	20	3.0 U[a]	-	-	0.0083 U	0.030 U	0.015 U	0.075 U	0.018 U	0.015 U	0.036 U	0.060 U	-	0.015 U	0.022 U	0.30 U	0.015 U	0.015 U
SVE-4/6	08/16/2012	6	4.0 U[a]	-	-	0.011 U	0.040 U	0.020 U	0.060 U	0.0040 U[g]	0.020 U	0.048 U	0.081 U	-	0.020 U	0.029 U	0.40 U	0.020 U	0.020 U
SVE-4/9	08/16/2012	9	97 [a]	-	-	0.018	0.036 U	0.30	0.58	0.022 U	0.018 U	0.043 U	1.4	-	0.018 U	0.026 U	0.36 U	0.018 U	0.018 U
SVE-4/11	08/16/2012	11	54 [a]	-	-	0.034	0.15	0.82	1.5	0.0038 U[g]	0.019 U	0.045 U	1.4	-	0.019 U	0.028 U	0.38 U	0.019 U	0.019 U
SVE-4/14	08/16/2012	14	3.0 U[a]	-	-	0.0084 U	0.030 U	0.015 U	0.045 U	0.0030 U[g]	0.015 U	0.036 U	0.060 U	-	0.015 U	0.022 U	0.30 U	0.015 U	0.015 U
SVE-5/5	08/16/2012	5	3.1 U[a]	-	-	0.0086 U	0.031 U	0.015 U	0.046 U	0.0031 U[g]	0.015 U	0.037 U	0.061 U	7.5	0.015 U	0.022 U	0.31 U	0.015 U	0.015 U
SVE-5/7.5	08/16/2012	7.5	793 [a]	-	-	0.149	9.0	7.4	57	0.098 U	0.081 U	0.19 U	21	11	0.081 U	0.12 U	1.6 U	0.081 U	0.081 U

Notes:
Results reported to the Method Detection Limit (MDL).
Gasoline, Diesel, and Heavy Oil/Lube by Method by NWTPH-HCID unless otherwise noted.
Volatiles by EPA Method 8260B
[a] Gasoline by Method NWTPH-Gx/EPA 8260B
[b] Diesel and Heavy Oil/Lube by Method NWTPH-Dx
[b1] Diesel and Heavy Oil/Lube by Method NWTPH-Dx with silica-gel cleanup
[c] Model Toxics Control Act (MTCA) Cleanup Amendments, Method A Soil Cleanup Levels (WDOE, October 12, 2007)
[d] Per MTCA, the cleanup value for gasoline is 30 mg/kg if benzene is detected and/or if the sum of the toluene, ethylbenzene, and xylenes is greater than one percent of the gasoline concentration, and 100 mg/kg for all other gasoline mixtures.
[e] Results in the diesel organics range are due to overlap from a gasoline range product.
[f] Naphthalene analyzed by EPA Method 8270D SIM.
[g] 1,2-Dibromoethane (EDB) analyzed by EPA 8260B SIM.
MTBE = Methyl tert-butyl ether
EDB = 1,2-Dibromoethane
EDC = 1,2-Dichloroethane
PCE = Tetrachloroethene
TCE = Trichloroethene
mg/kg = milligrams per kilogram
U = Undetected at method detection limit shown
J = Estimated value. Result was below the method reporting limit, but above the method detection limit.
X = The detection in the diesel range is due to overlap from a gasoline range product.
- = Not analyzed for this parameter
Values in bold indicate compound was detected at a concentration exceeding the most stringent MTCA Method A standard

MTCA Screening Soil Samples 0 - 3 ft bgs
Plaid 112
Vancouver, WA

Analytical Data Surface Soils 0 - 3 ft bgs (mg/Kg)																				MTCA A Screening Results																			
COPC	MTCA Method A Soil Unrestricted Use (mg/kg)	B1-3	B2-3	B3-3	B4-3	B5-3	B6-3	PIT S/1.5	PIT N/2	PIT S/2	PIT E/2	PIT W/2	B-9/3	B-10/3	B-11/3	B-12/3	B-13/3	B-14/3	B-15/3	B1-3	B2-3	B3-3	B4-3	B5-3	B6-3	PIT S/1.5	PIT N/2	PIT S/2	PIT E/2	PIT W/2	B-9/3	B-10/3	B-11/3	B-12/3	B-13/3	B-14/3	B-15/3
Gasoline	30	24	21	23	23	22	22	23	21	1,320	24	1,210	2.9	2.7	13	2.6	3.9	3.3	3.3	no	no	no	no	no	no	no	no	**YES[1]**	no	**YES[1]**	no	no	no	no	no	no	no
Diesel	2,000	59	53	57	57	56	54	20	52	-	60	-	59	55	56	58	-	-	-	no	no	no	no	no	no	no	no	-	no	-	no	no	no	no	-	-	-
Heavy Oil/Lube	2,000	118	107	113	114	112	107	116	104	109	120	118	117	109	113	116	-	-	-	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	-	-	-
Ethylbenzene	6	0.014	0.011	0.012	0.013	-	0.0096	-	-	-	-	-	0.014	0.013	0.017	0.013	0.019	0.017	0.017	no	no	no	no	-	no	-	-	-	-	-	no	no	no	no	no	no	no
Xylenes	9	0.040	0.032	0.035	0.038	-	0.029	-	-	-	-	-	0.043	0.040	0.051	0.039	0.058	0.049	0.049	no	no	no	no	-	no	-	-	-	-	-	no	no	no	no	no	no	no

YES[1] = identified as outliers using the Dixon Test

Units shown are mg/kg

COPC = Chemical of Potential Concern

Dixon's Outlier Test for gasoline

Number of data = 18
10% critical value: 0.424
5% critical value: 0.475
1% critical value: 0.561

1. Data Value 1320 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.991

For 10% significance level, 1320 is an outlier.
For 5% significance level, 1320 is an outlier.
For 1% significance level, 1320 is an outlier.

2. Data Value 1.3 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.011

For 10% significance level, 1.3 is not an outlier.
For 5% significance level, 1.3 is not an outlier.
For 1% significance level, 1.3 is not an outlier.

Number of data = 17
10% critical value: 0.438
5% critical value: 0.49
1% critical value: 0.577

1. Data Value 1210 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.991

For 10% significance level, 1210 is an outlier.
For 5% significance level, 1210 is an outlier.
For 1% significance level, 1210 is an outlier.

2. Data Value 1.3 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.012

For 10% significance level, 1.3 is not an outlier.
For 5% significance level, 1.3 is not an outlier.
For 1% significance level, 1.3 is not an outlier.

ATTACHMENT 1 - PLAID 112

Washington State Department of Ecology
Toxics Cleanup Program

Terrestrial Ecological Evaluation Process - Primary Exclusions

Documentation Form

Exclusion #	Exclusion Detail	Yes or No?	Are Institutional Controls Required If The Exclusion Applies?
1	Will soil contamination be located at least 6 feet beneath the ground surface and less than 15 feet?	Yes / (No)	Yes
	Will soil contamination located at least 15 feet beneath the ground surface?	Yes / (No)	No
	Will soil contamination located below the conditional point of compliance?	(Yes) / No	Yes
2	Will soil contamination be covered by buildings, paved roads, pavement, or other physical barriers that will prevent plants or wildlife from being exposed?	(Yes) / No	Yes
3	Is there less than 1.5 acres of contiguous undeveloped land on the site, or within 500 feet of any area of the site affected by hazardous substances **other than** those listed in the table of Hazardous Substances of Concern? And Is there less than 0.25 acres of contiguous undeveloped land on or within 500 feet of any area of the site affected by hazardous substances **listed in** the table of Hazardous Substances of Concern?	(Yes) / No (Yes) / No	Other factors determine
4	Are concentrations of hazardous substances in the soil less than or equal to natural background concentrations of those substances at the point of compliance	(Yes) / No	No

[Exclusions Main] [TEE Definitions] [Simplified or Site-Specific?] [Simplified Ecological Evaluation] [Site-Specific Ecological Evaluation] [WAC 173-340-7493]

[TEE Home]

Appendix D

TABLE D-1

SVE-1 Monitoring Data: PID vs. Flow

Plaid Pantry No. 112

Vancouver, Washington

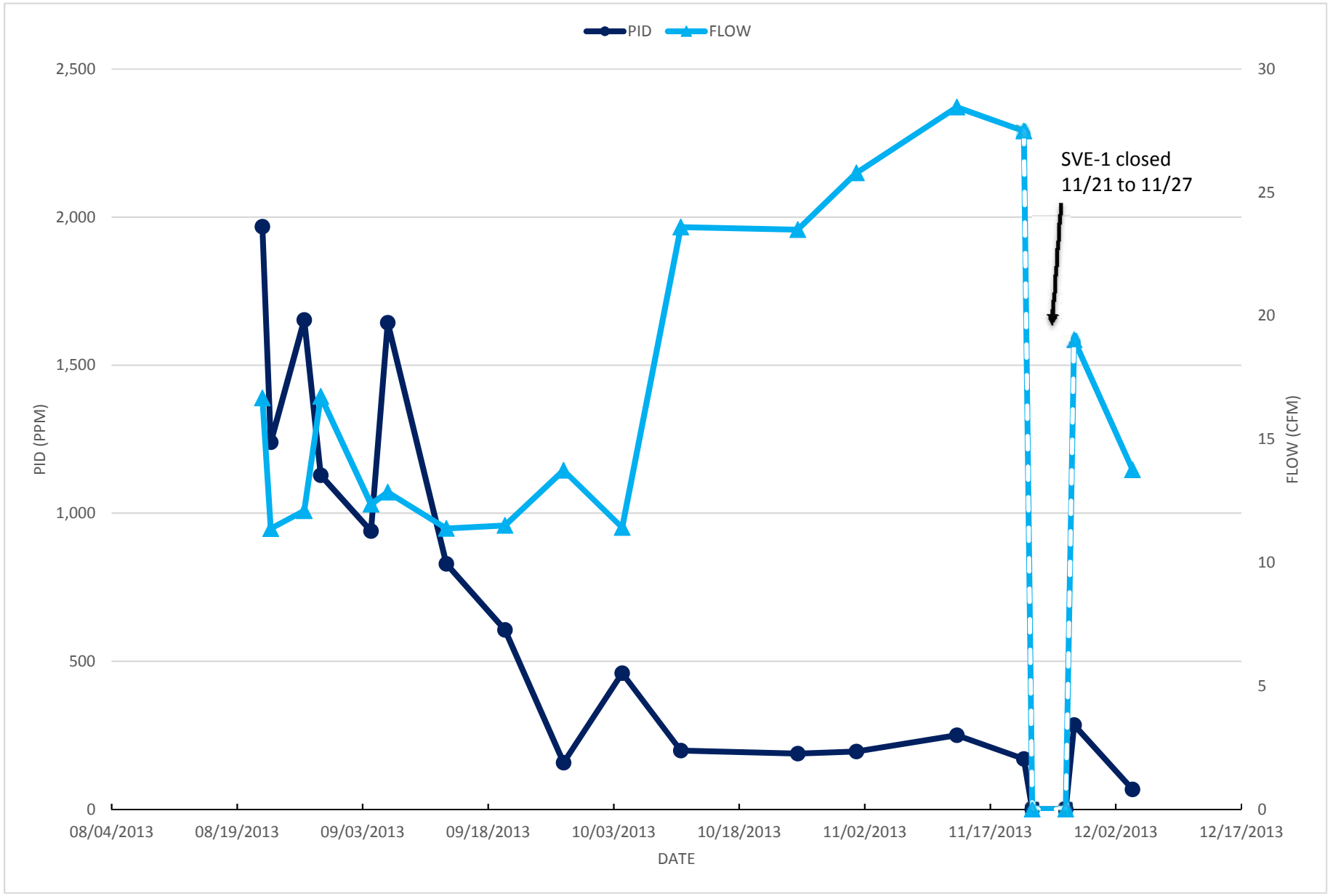


TABLE D-2
SVE-2 Monitoring Data: PID vs. Flow
Plaid Pantry No. 112
Vancouver, Washington

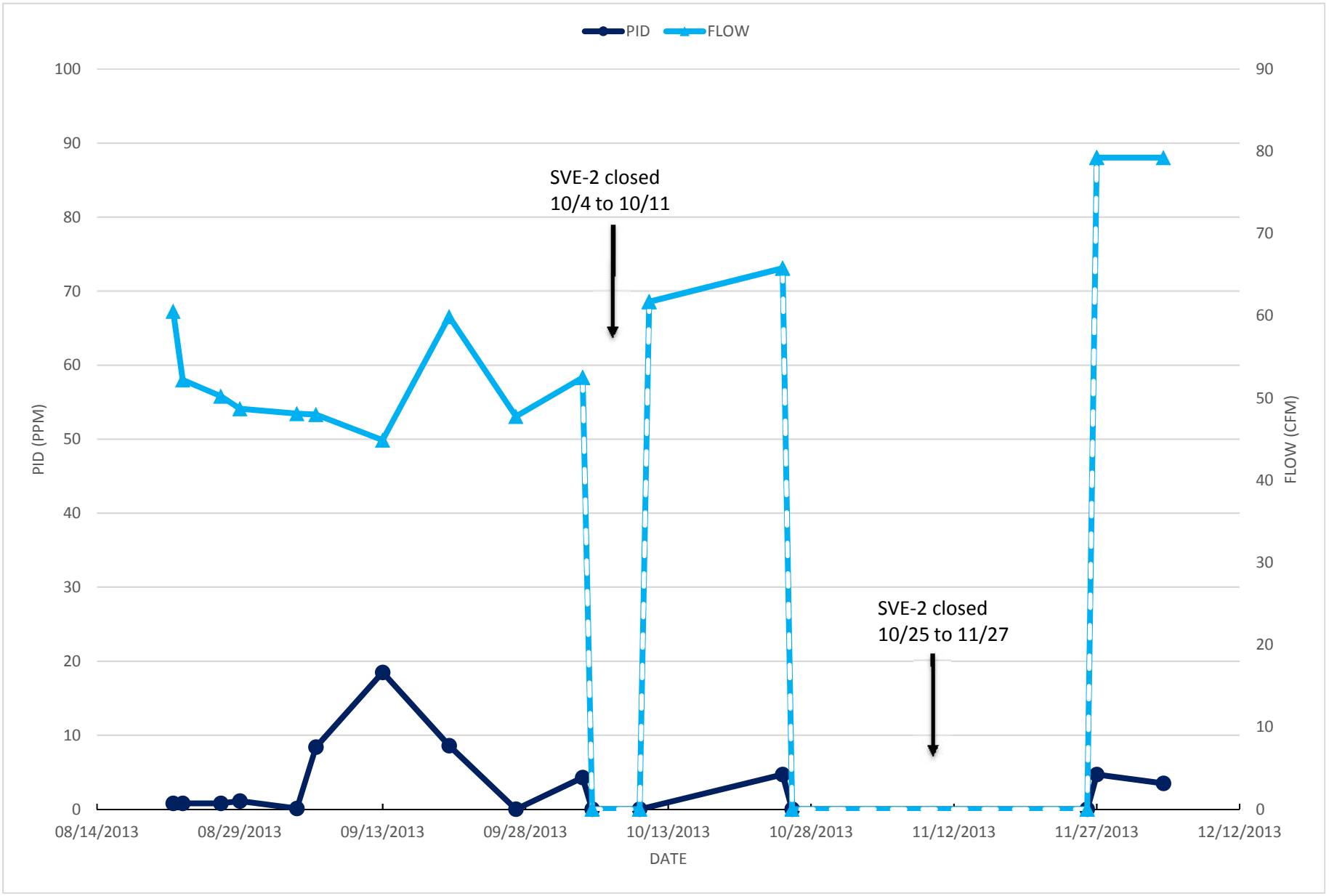


TABLE D-3
SVE-3 Monitoring Data: PID vs. Flow
Plaid Pantry No. 112
Vancouver, Washington

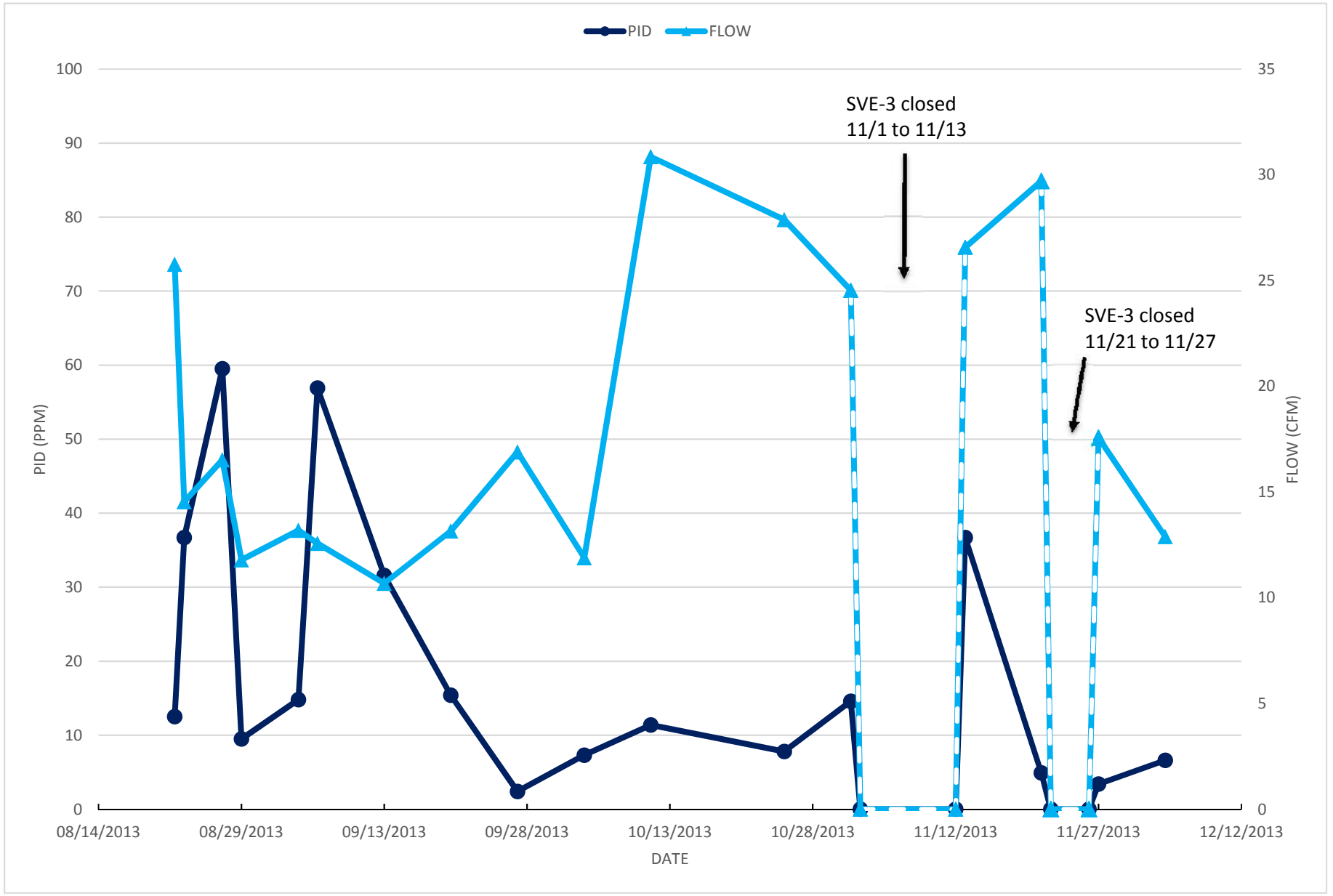


TABLE D-4

SVE-4 Monitoring Data: PID vs. Flow

Plaid Pantry No. 112

Vancouver, Washington

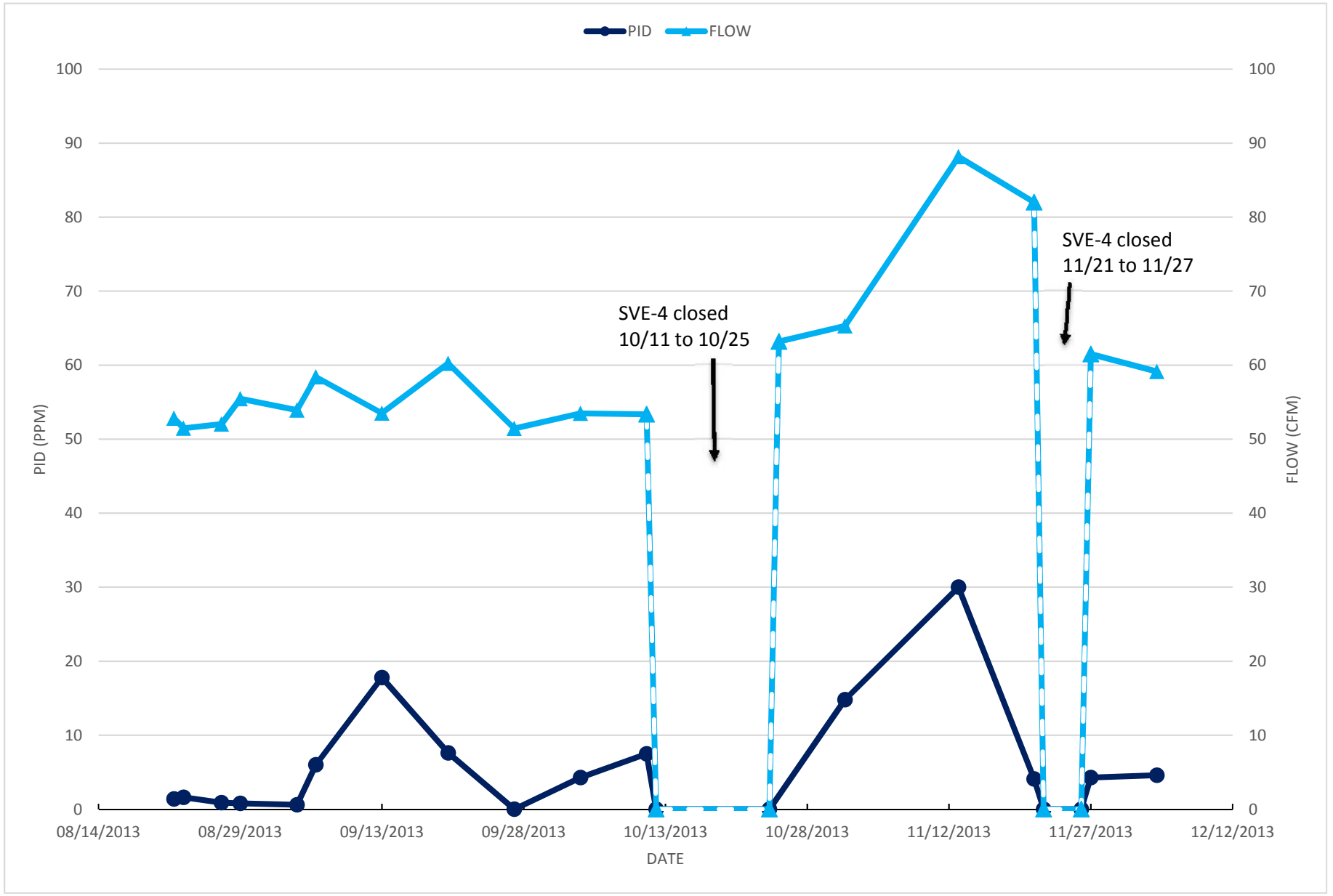
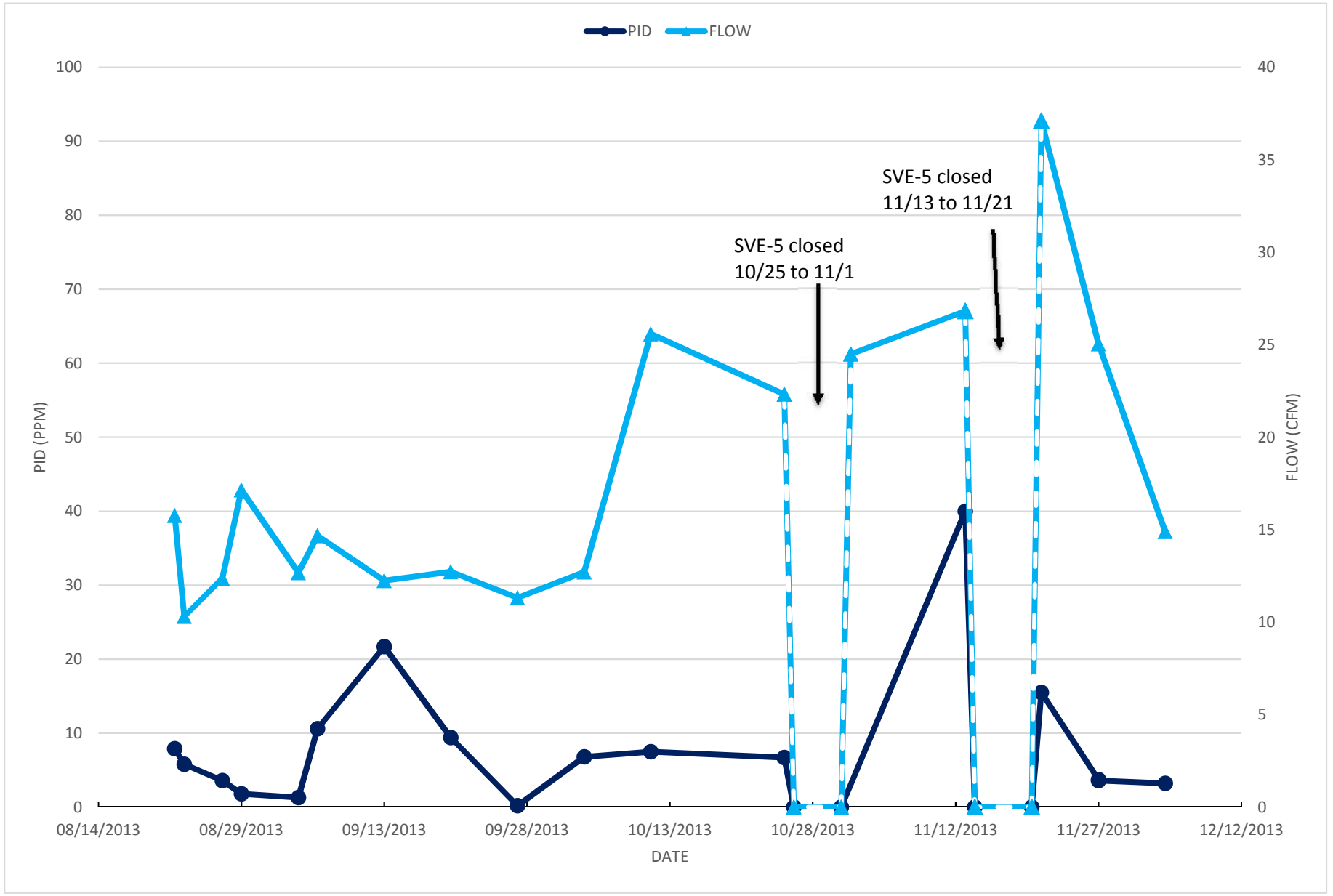


TABLE D-5

SVE-5 Monitoring Data: PID vs. Flow

Plaid Pantry No. 112

Vancouver, Washington



Appendix E

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12/19/2013
Mr. Chris Rhea
EES Environmental Consulting, Inc.
240 N Broadway
Suite 203
Portland OR 97227

Project Name: Plaid Pantry 112
Project #: 1179-02
Workorder #: 1312089

Dear Mr. Chris Rhea

The following report includes the data for the above referenced project for sample(s) received on 12/6/2013 at Air Toxics Ltd.

The data and associated QC analyzed by 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

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WORK ORDER #: 1312089

Work Order Summary

CLIENT:	Mr. Chris Rhea EES Environmental Consulting, Inc. 240 N Broadway Suite 203 Portland, OR 97227	**BILL TO:**	Mr. Chris Rhea EES Environmental Consulting, Inc. 240 N Broadway Suite 203 Portland, OR 97227
PHONE:	530-847-2740	**P.O. #**	
FAX:		**PROJECT #**	1179-02 Plaid Pantry 112
DATE RECEIVED:	12/06/2013	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	12/19/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	SVE-4	TO-15	4.5 "Hg	15 psi
02A	SVE-5	TO-15	3.5 "Hg	15 psi
03A	SVE-3	TO-15	4.5 "Hg	15 psi
04A	SVE-1	TO-15	3.0 "Hg	15 psi
05A	SVE Blower Inlet	TO-15	3.5 "Hg	15 psi
06A	Lab Blank	TO-15	NA	NA
06B	Lab Blank	TO-15	NA	NA
07A	CCV	TO-15	NA	NA
07B	CCV	TO-15	NA	NA
08A	LCS	TO-15	NA	NA
08AA	LCSD	TO-15	NA	NA
08B	LCS	TO-15	NA	NA
08BB	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 12/19/13

Technical Director

Certification numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-13-6, UT NELAP CA009332013-4, VA NELAP - 460197, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2013, Expiration date: 10/17/2014.
Eurofins Air Toxics Inc.. 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
EPA Method TO-15
EES Environmental Consulting, Inc.
Workorder# 1312089

Five 1 Liter Summa Canister samples were received on December 06, 2013. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

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.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Dilution was performed on sample SVE-1 due to the presence of high level target and non-target species.

Dilution was performed on sample SVE-4 due to the presence of high level non-target species.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

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, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

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

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: SVE-4

Lab ID#: 1312089-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	19	25	36	47
Acetone	48	260	110	620
Hexane	4.8	60	17	210
Cyclohexane	4.8	27	16	93
2,2,4-Trimethylpentane	4.8	20	22	94
Toluene	4.8	120	18	460
Tetrachloroethene	4.8	540	32	3600
TPH ref. to Gasoline (MW=100)	240	13000	970	53000

Client Sample ID: SVE-5

Lab ID#: 1312089-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	4.6	57	8.6	110
2-Propanol	4.6	9.0	11	22
Hexane	1.1	12	4.0	42
2-Butanone (Methyl Ethyl Ketone)	4.6	6.8	14	20
Tetrahydrofuran	1.1	7.3	3.4	21
Cyclohexane	1.1	16	3.9	54
2,2,4-Trimethylpentane	1.1	49	5.3	230
Benzene	1.1	6.1	3.6	19
Heptane	1.1	17	4.7	71
Toluene	1.1	170	4.3	640
Tetrachloroethene	1.1	2.6	7.8	18
Ethyl Benzene	1.1	12	5.0	53
m,p-Xylene	1.1	41	5.0	180
o-Xylene	1.1	21	5.0	92
Propylbenzene	1.1	4.0	5.6	19
4-Ethyltoluene	1.1	18	5.6	89
1,3,5-Trimethylbenzene	1.1	7.7	5.6	38
1,2,4-Trimethylbenzene	1.1	17	5.6	85
TPH ref. to Gasoline (MW=100)	57	2000	230	8100

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: SVE-3

Lab ID#: 1312089-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	12	14	28	33
Hexane	1.2	280	4.2	1000
2-Butanone (Methyl Ethyl Ketone)	4.8	13	14	38
Tetrahydrofuran	1.2	13	3.5	40
Cyclohexane	1.2	220	4.1	740
2,2,4-Trimethylpentane	1.2	750 E	5.6	3500 E
Benzene	1.2	22	3.8	72
Heptane	1.2	340	4.9	1400
Toluene	1.2	190	4.5	720
Ethyl Benzene	1.2	13	5.2	57
m,p-Xylene	1.2	170	5.2	730
o-Xylene	1.2	83	5.2	360
Propylbenzene	1.2	2.8	5.8	14
4-Ethyltoluene	1.2	39	5.8	190
1,3,5-Trimethylbenzene	1.2	38	5.8	190
1,2,4-Trimethylbenzene	1.2	23	5.8	110
TPH ref. to Gasoline (MW=100)	60	40000	240	160000

Client Sample ID: SVE-1

Lab ID#: 1312089-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	110	1100	390	3700
Cyclohexane	110	840	380	2900
2,2,4-Trimethylpentane	110	4500	520	21000
Heptane	110	2900	460	12000
Toluene	110	530	420	2000
Ethyl Benzene	110	500	490	2200
m,p-Xylene	110	14000	490	62000
o-Xylene	110	7100	490	31000
Propylbenzene	110	230	550	1100
4-Ethyltoluene	110	5900	550	29000
1,3,5-Trimethylbenzene	110	3200	550	16000

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: SVE-1

Lab ID#: 1312089-04A

1,2,4-Trimethylbenzene	110	5400	550	26000
TPH ref. to Gasoline (MW=100)	5600	480000	23000	2000000

Client Sample ID: SVE Blower Inlet

Lab ID#: 1312089-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	2.4	5.7	12
Freon 11	1.1	2.8	6.4	16
Ethanol	4.6	100	8.6	200
Acetone	11	18	27	43
2-Propanol	4.6	32	11	78
Hexane	1.1	73	4.0	260
Chloroform	1.1	1.9	5.6	9.4
Cyclohexane	1.1	57	3.9	200
2,2,4-Trimethylpentane	1.1	60	5.3	280
Benzene	1.1	3.9	3.6	12
Heptane	1.1	42	4.7	170
Toluene	1.1	400	4.3	1500
Tetrachloroethene	1.1	170	7.8	1200
Ethyl Benzene	1.1	3.8	5.0	16
m,p-Xylene	1.1	30	5.0	130
o-Xylene	1.1	12	5.0	52
Styrene	1.1	1.2	4.9	4.9
4-Ethyltoluene	1.1	6.7	5.6	33
1,3,5-Trimethylbenzene	1.1	3.4	5.6	17
1,2,4-Trimethylbenzene	1.1	5.6	5.6	28
TPH ref. to Gasoline (MW=100)	57	6200	230	26000

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Client Sample ID: SVE-4

Lab ID#: 1312089-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2121617**	**Date of Collection:**	**12/4/13 12:19:00 PM**
Dil. Factor:	**9.52**	**Date of Analysis:**	**12/16/13 07:03 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	4.8	Not Detected	24	Not Detected
Freon 114	4.8	Not Detected	33	Not Detected
Chloromethane	48	Not Detected	98	Not Detected
Vinyl Chloride	4.8	Not Detected	12	Not Detected
1,3-Butadiene	4.8	Not Detected	10	Not Detected
Bromomethane	48	Not Detected	180	Not Detected
Chloroethane	19	Not Detected	50	Not Detected
Freon 11	4.8	Not Detected	27	Not Detected
Ethanol	19	25	36	47
Freon 113	4.8	Not Detected	36	Not Detected
1,1-Dichloroethene	4.8	Not Detected	19	Not Detected
Acetone	48	260	110	620
2-Propanol	19	Not Detected	47	Not Detected
Carbon Disulfide	19	Not Detected	59	Not Detected
3-Chloropropene	19	Not Detected	60	Not Detected
Methylene Chloride	48	Not Detected	160	Not Detected
Methyl tert-butyl ether	4.8	Not Detected	17	Not Detected
trans-1,2-Dichloroethene	4.8	Not Detected	19	Not Detected
Hexane	4.8	60	17	210
1,1-Dichloroethane	4.8	Not Detected	19	Not Detected
2-Butanone (Methyl Ethyl Ketone)	19	Not Detected	56	Not Detected
cis-1,2-Dichloroethene	4.8	Not Detected	19	Not Detected
Tetrahydrofuran	4.8	Not Detected	14	Not Detected
Chloroform	4.8	Not Detected	23	Not Detected
1,1,1-Trichloroethane	4.8	Not Detected	26	Not Detected
Cyclohexane	4.8	27	16	93
Carbon Tetrachloride	4.8	Not Detected	30	Not Detected
2,2,4-Trimethylpentane	4.8	20	22	94
Benzene	4.8	Not Detected	15	Not Detected
1,2-Dichloroethane	4.8	Not Detected	19	Not Detected
Heptane	4.8	Not Detected	20	Not Detected
Trichloroethene	4.8	Not Detected	26	Not Detected
1,2-Dichloropropane	4.8	Not Detected	22	Not Detected
1,4-Dioxane	19	Not Detected	69	Not Detected
Bromodichloromethane	4.8	Not Detected	32	Not Detected
cis-1,3-Dichloropropene	4.8	Not Detected	22	Not Detected
4-Methyl-2-pentanone	4.8	Not Detected	19	Not Detected
Toluene	4.8	120	18	460
trans-1,3-Dichloropropene	4.8	Not Detected	22	Not Detected
1,1,2-Trichloroethane	4.8	Not Detected	26	Not Detected
Tetrachloroethene	4.8	540	32	3600
2-Hexanone	19	Not Detected	78	Not Detected

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Client Sample ID: SVE-4

Lab ID#: 1312089-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2121617**	**Date of Collection: 12/4/13 12:19:00 PM**	
Dil. Factor:	**9.52**	**Date of Analysis: 12/16/13 07:03 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	4.8	Not Detected	40	Not Detected
1,2-Dibromoethane (EDB)	4.8	Not Detected	36	Not Detected
Chlorobenzene	4.8	Not Detected	22	Not Detected
Ethyl Benzene	4.8	Not Detected	21	Not Detected
m,p-Xylene	4.8	Not Detected	21	Not Detected
o-Xylene	4.8	Not Detected	21	Not Detected
Styrene	4.8	Not Detected	20	Not Detected
Bromoform	4.8	Not Detected	49	Not Detected
Cumene	4.8	Not Detected	23	Not Detected
1,1,2,2-Tetrachloroethane	4.8	Not Detected	33	Not Detected
Propylbenzene	4.8	Not Detected	23	Not Detected
4-Ethyltoluene	4.8	Not Detected	23	Not Detected
1,3,5-Trimethylbenzene	4.8	Not Detected	23	Not Detected
1,2,4-Trimethylbenzene	4.8	Not Detected	23	Not Detected
1,3-Dichlorobenzene	4.8	Not Detected	29	Not Detected
1,4-Dichlorobenzene	4.8	Not Detected	29	Not Detected
alpha-Chlorotoluene	4.8	Not Detected	25	Not Detected
1,2-Dichlorobenzene	4.8	Not Detected	29	Not Detected
1,2,4-Trichlorobenzene	19	Not Detected UJ	140	Not Detected UJ
Hexachlorobutadiene	19	Not Detected	200	Not Detected
TPH ref. to Gasoline (MW=100)	240	13000	970	53000

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	87	70-130

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Client Sample ID: SVE-5

Lab ID#: 1312089-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2121615**	**Date of Collection:**	**12/4/13 12:25:00 PM**
Dil. Factor:	**2.29**	**Date of Analysis:**	**12/16/13 05:55 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.7	Not Detected
Freon 114	1.1	Not Detected	8.0	Not Detected
Chloromethane	11	Not Detected	24	Not Detected
Vinyl Chloride	1.1	Not Detected	2.9	Not Detected
1,3-Butadiene	1.1	Not Detected	2.5	Not Detected
Bromomethane	11	Not Detected	44	Not Detected
Chloroethane	4.6	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.4	Not Detected
Ethanol	4.6	57	8.6	110
Freon 113	1.1	Not Detected	8.8	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Acetone	11	Not Detected	27	Not Detected
2-Propanol	4.6	9.0	11	22
Carbon Disulfide	4.6	Not Detected	14	Not Detected
3-Chloropropene	4.6	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	40	Not Detected
Methyl tert-butyl ether	1.1	Not Detected	4.1	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Hexane	1.1	12	4.0	42
1,1-Dichloroethane	1.1	Not Detected	4.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.6	6.8	14	20
cis-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Tetrahydrofuran	1.1	7.3	3.4	21
Chloroform	1.1	Not Detected	5.6	Not Detected
1,1,1-Trichloroethane	1.1	Not Detected	6.2	Not Detected
Cyclohexane	1.1	16	3.9	54
Carbon Tetrachloride	1.1	Not Detected	7.2	Not Detected
2,2,4-Trimethylpentane	1.1	49	5.3	230
Benzene	1.1	6.1	3.6	19
1,2-Dichloroethane	1.1	Not Detected	4.6	Not Detected
Heptane	1.1	17	4.7	71
Trichloroethene	1.1	Not Detected	6.2	Not Detected
1,2-Dichloropropane	1.1	Not Detected	5.3	Not Detected
1,4-Dioxane	4.6	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.7	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.2	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.7	Not Detected
Toluene	1.1	170	4.3	640
trans-1,3-Dichloropropene	1.1	Not Detected	5.2	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.2	Not Detected
Tetrachloroethene	1.1	2.6	7.8	18
2-Hexanone	4.6	Not Detected	19	Not Detected

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Client Sample ID: SVE-5

Lab ID#: 1312089-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2121615**	**Date of Collection: 12/4/13 12:25:00 PM**	
Dil. Factor:	**2.29**	**Date of Analysis: 12/16/13 05:55 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.8	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.8	Not Detected
Chlorobenzene	1.1	Not Detected	5.3	Not Detected
Ethyl Benzene	1.1	12	5.0	53
m,p-Xylene	1.1	41	5.0	180
o-Xylene	1.1	21	5.0	92
Styrene	1.1	Not Detected	4.9	Not Detected
Bromoform	1.1	Not Detected	12	Not Detected
Cumene	1.1	Not Detected	5.6	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.9	Not Detected
Propylbenzene	1.1	4.0	5.6	19
4-Ethyltoluene	1.1	18	5.6	89
1,3,5-Trimethylbenzene	1.1	7.7	5.6	38
1,2,4-Trimethylbenzene	1.1	17	5.6	85
1,3-Dichlorobenzene	1.1	Not Detected	6.9	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.9	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.9	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.9	Not Detected
1,2,4-Trichlorobenzene	4.6	Not Detected UJ	34	Not Detected UJ
Hexachlorobutadiene	4.6	Not Detected	49	Not Detected
TPH ref. to Gasoline (MW=100)	57	2000	230	8100

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	104	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: SVE-3

Lab ID#: 1312089-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2121616**	**Date of Collection:**	**12/4/13 12:38:00 PM**
Dil. Factor:	**2.38**	**Date of Analysis:**	**12/16/13 06:33 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	5.9	Not Detected
Freon 114	1.2	Not Detected	8.3	Not Detected
Chloromethane	12	Not Detected	24	Not Detected
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
1,3-Butadiene	1.2	Not Detected	2.6	Not Detected
Bromomethane	12	Not Detected	46	Not Detected
Chloroethane	4.8	Not Detected	12	Not Detected
Freon 11	1.2	Not Detected	6.7	Not Detected
Ethanol	4.8	Not Detected	9.0	Not Detected
Freon 113	1.2	Not Detected	9.1	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Acetone	12	14	28	33
2-Propanol	4.8	Not Detected	12	Not Detected
Carbon Disulfide	4.8	Not Detected	15	Not Detected
3-Chloropropene	4.8	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	41	Not Detected
Methyl tert-butyl ether	1.2	Not Detected	4.3	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Hexane	1.2	280	4.2	1000
1,1-Dichloroethane	1.2	Not Detected	4.8	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.8	13	14	38
cis-1,2-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Tetrahydrofuran	1.2	13	3.5	40
Chloroform	1.2	Not Detected	5.8	Not Detected
1,1,1-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Cyclohexane	1.2	220	4.1	740
Carbon Tetrachloride	1.2	Not Detected	7.5	Not Detected
2,2,4-Trimethylpentane	1.2	750 E	5.6	3500 E
Benzene	1.2	22	3.8	72
1,2-Dichloroethane	1.2	Not Detected	4.8	Not Detected
Heptane	1.2	340	4.9	1400
Trichloroethene	1.2	Not Detected	6.4	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.5	Not Detected
1,4-Dioxane	4.8	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	8.0	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	4.9	Not Detected
Toluene	1.2	190	4.5	720
trans-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Tetrachloroethene	1.2	Not Detected	8.1	Not Detected
2-Hexanone	4.8	Not Detected	19	Not Detected

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Client Sample ID: SVE-3

Lab ID#: 1312089-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2121616**	**Date of Collection: 12/4/13 12:38:00 PM**	
Dil. Factor:	**2.38**	**Date of Analysis: 12/16/13 06:33 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.1	Not Detected
Chlorobenzene	1.2	Not Detected	5.5	Not Detected
Ethyl Benzene	1.2	13	5.2	57
m,p-Xylene	1.2	170	5.2	730
o-Xylene	1.2	83	5.2	360
Styrene	1.2	Not Detected	5.1	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.8	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.2	Not Detected
Propylbenzene	1.2	2.8	5.8	14
4-Ethyltoluene	1.2	39	5.8	190
1,3,5-Trimethylbenzene	1.2	38	5.8	190
1,2,4-Trimethylbenzene	1.2	23	5.8	110
1,3-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.2	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,2,4-Trichlorobenzene	4.8	Not Detected UJ	35	Not Detected UJ
Hexachlorobutadiene	4.8	Not Detected	51	Not Detected
TPH ref. to Gasoline (MW=100)	60	40000	240	160000

E = Exceeds instrument calibration range.
UJ = Non-detected compound associated with low bias in the CCV and/or LCS.
Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	107	70-130
4-Bromofluorobenzene	104	70-130

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Client Sample ID: SVE-1

Lab ID#: 1312089-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2121618**	**Date of Collection:**	**12/4/13 12:45:00 PM**
Dil. Factor:	**224**	**Date of Analysis:**	**12/16/13 07:56 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	110	Not Detected	550	Not Detected
Freon 114	110	Not Detected	780	Not Detected
Chloromethane	1100	Not Detected	2300	Not Detected
Vinyl Chloride	110	Not Detected	290	Not Detected
1,3-Butadiene	110	Not Detected	250	Not Detected
Bromomethane	1100	Not Detected	4300	Not Detected
Chloroethane	450	Not Detected	1200	Not Detected
Freon 11	110	Not Detected	630	Not Detected
Ethanol	450	Not Detected	840	Not Detected
Freon 113	110	Not Detected	860	Not Detected
1,1-Dichloroethene	110	Not Detected	440	Not Detected
Acetone	1100	Not Detected	2700	Not Detected
2-Propanol	450	Not Detected	1100	Not Detected
Carbon Disulfide	450	Not Detected	1400	Not Detected
3-Chloropropene	450	Not Detected	1400	Not Detected
Methylene Chloride	1100	Not Detected	3900	Not Detected
Methyl tert-butyl ether	110	Not Detected	400	Not Detected
trans-1,2-Dichloroethene	110	Not Detected	440	Not Detected
Hexane	110	1100	390	3700
1,1-Dichloroethane	110	Not Detected	450	Not Detected
2-Butanone (Methyl Ethyl Ketone)	450	Not Detected	1300	Not Detected
cis-1,2-Dichloroethene	110	Not Detected	440	Not Detected
Tetrahydrofuran	110	Not Detected	330	Not Detected
Chloroform	110	Not Detected	550	Not Detected
1,1,1-Trichloroethane	110	Not Detected	610	Not Detected
Cyclohexane	110	840	380	2900
Carbon Tetrachloride	110	Not Detected	700	Not Detected
2,2,4-Trimethylpentane	110	4500	520	21000
Benzene	110	Not Detected	360	Not Detected
1,2-Dichloroethane	110	Not Detected	450	Not Detected
Heptane	110	2900	460	12000
Trichloroethene	110	Not Detected	600	Not Detected
1,2-Dichloropropane	110	Not Detected	520	Not Detected
1,4-Dioxane	450	Not Detected	1600	Not Detected
Bromodichloromethane	110	Not Detected	750	Not Detected
cis-1,3-Dichloropropene	110	Not Detected	510	Not Detected
4-Methyl-2-pentanone	110	Not Detected	460	Not Detected
Toluene	110	530	420	2000
trans-1,3-Dichloropropene	110	Not Detected	510	Not Detected
1,1,2-Trichloroethane	110	Not Detected	610	Not Detected
Tetrachloroethene	110	Not Detected	760	Not Detected
2-Hexanone	450	Not Detected	1800	Not Detected

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Client Sample ID: SVE-1

Lab ID#: 1312089-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2121618**	**Date of Collection: 12/4/13 12:45:00 PM**	
Dil. Factor:	**224**	**Date of Analysis: 12/16/13 07:56 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	110	Not Detected	950	Not Detected
1,2-Dibromoethane (EDB)	110	Not Detected	860	Not Detected
Chlorobenzene	110	Not Detected	520	Not Detected
Ethyl Benzene	110	500	490	2200
m,p-Xylene	110	14000	490	62000
o-Xylene	110	7100	490	31000
Styrene	110	Not Detected	480	Not Detected
Bromoform	110	Not Detected	1200	Not Detected
Cumene	110	Not Detected	550	Not Detected
1,1,2,2-Tetrachloroethane	110	Not Detected	770	Not Detected
Propylbenzene	110	230	550	1100
4-Ethyltoluene	110	5900	550	29000
1,3,5-Trimethylbenzene	110	3200	550	16000
1,2,4-Trimethylbenzene	110	5400	550	26000
1,3-Dichlorobenzene	110	Not Detected	670	Not Detected
1,4-Dichlorobenzene	110	Not Detected	670	Not Detected
alpha-Chlorotoluene	110	Not Detected	580	Not Detected
1,2-Dichlorobenzene	110	Not Detected	670	Not Detected
1,2,4-Trichlorobenzene	450	Not Detected UJ	3300	Not Detected UJ
Hexachlorobutadiene	450	Not Detected	4800	Not Detected
TPH ref. to Gasoline (MW=100)	5600	480000	23000	2000000

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	95	70-130

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Client Sample ID: SVE Blower Inlet

Lab ID#: 1312089-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121326**	**Date of Collection:**	**12/4/13 12:52:00 PM**
Dil. Factor:	**2.29**	**Date of Analysis:**	**12/14/13 09:40 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	2.4	5.7	12
Freon 114	1.1	Not Detected	8.0	Not Detected
Chloromethane	11	Not Detected	24	Not Detected
Vinyl Chloride	1.1	Not Detected	2.9	Not Detected
1,3-Butadiene	1.1	Not Detected	2.5	Not Detected
Bromomethane	11	Not Detected	44	Not Detected
Chloroethane	4.6	Not Detected	12	Not Detected
Freon 11	1.1	2.8	6.4	16
Ethanol	4.6	100	8.6	200
Freon 113	1.1	Not Detected	8.8	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Acetone	11	18	27	43
2-Propanol	4.6	32	11	78
Carbon Disulfide	4.6	Not Detected	14	Not Detected
3-Chloropropene	4.6	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	40	Not Detected
Methyl tert-butyl ether	1.1	Not Detected	4.1	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Hexane	1.1	73	4.0	260
1,1-Dichloroethane	1.1	Not Detected	4.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.6	Not Detected	14	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Tetrahydrofuran	1.1	Not Detected	3.4	Not Detected
Chloroform	1.1	1.9	5.6	9.4
1,1,1-Trichloroethane	1.1	Not Detected	6.2	Not Detected
Cyclohexane	1.1	57	3.9	200
Carbon Tetrachloride	1.1	Not Detected	7.2	Not Detected
2,2,4-Trimethylpentane	1.1	60	5.3	280
Benzene	1.1	3.9	3.6	12
1,2-Dichloroethane	1.1	Not Detected	4.6	Not Detected
Heptane	1.1	42	4.7	170
Trichloroethene	1.1	Not Detected	6.2	Not Detected
1,2-Dichloropropane	1.1	Not Detected	5.3	Not Detected
1,4-Dioxane	4.6	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.7	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.2	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.7	Not Detected
Toluene	1.1	400	4.3	1500
trans-1,3-Dichloropropene	1.1	Not Detected	5.2	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.2	Not Detected
Tetrachloroethene	1.1	170	7.8	1200
2-Hexanone	4.6	Not Detected	19	Not Detected

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Client Sample ID: SVE Blower Inlet

Lab ID#: 1312089-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121326**	**Date of Collection:**	**12/4/13 12:52:00 PM**
Dil. Factor:	**2.29**	**Date of Analysis:**	**12/14/13 09:40 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.8	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.8	Not Detected
Chlorobenzene	1.1	Not Detected	5.3	Not Detected
Ethyl Benzene	1.1	3.8	5.0	16
m,p-Xylene	1.1	30	5.0	130
o-Xylene	1.1	12	5.0	52
Styrene	1.1	1.2	4.9	4.9
Bromoform	1.1	Not Detected	12	Not Detected
Cumene	1.1	Not Detected	5.6	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.9	Not Detected
Propylbenzene	1.1	Not Detected	5.6	Not Detected
4-Ethyltoluene	1.1	6.7	5.6	33
1,3,5-Trimethylbenzene	1.1	3.4	5.6	17
1,2,4-Trimethylbenzene	1.1	5.6	5.6	28
1,3-Dichlorobenzene	1.1	Not Detected	6.9	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.9	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.9	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.9	Not Detected
1,2,4-Trichlorobenzene	4.6	Not Detected	34	Not Detected
Hexachlorobutadiene	4.6	Not Detected	49	Not Detected
TPH ref. to Gasoline (MW=100)	57	6200	230	26000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1312089-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121321**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/14/13 06:34 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1312089-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121321**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/14/13 06:34 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1312089-06B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2121606**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/16/13 11:23 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1312089-06B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2121606**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/16/13 11:23 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected UJ	15	Not Detected UJ
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	107	70-130
4-Bromofluorobenzene	90	70-130

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Client Sample ID: CCV

Lab ID#: 1312089-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121302**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/13/13 11:11 AM**	

Compound	%Recovery
Freon 12	98
Freon 114	97
Chloromethane	94
Vinyl Chloride	88
1,3-Butadiene	81
Bromomethane	126
Chloroethane	98
Freon 11	98
Ethanol	95
Freon 113	98
1,1-Dichloroethene	94
Acetone	94
2-Propanol	100
Carbon Disulfide	99
3-Chloropropene	97
Methylene Chloride	92
Methyl tert-butyl ether	100
trans-1,2-Dichloroethene	95
Hexane	108
1,1-Dichloroethane	100
2-Butanone (Methyl Ethyl Ketone)	106
cis-1,2-Dichloroethene	98
Tetrahydrofuran	103
Chloroform	98
1,1,1-Trichloroethane	98
Cyclohexane	108
Carbon Tetrachloride	98
2,2,4-Trimethylpentane	106
Benzene	103
1,2-Dichloroethane	101
Heptane	118
Trichloroethene	100
1,2-Dichloropropane	102
1,4-Dioxane	116
Bromodichloromethane	102
cis-1,3-Dichloropropene	102
4-Methyl-2-pentanone	114
Toluene	104
trans-1,3-Dichloropropene	103
1,1,2-Trichloroethane	100
Tetrachloroethene	100
2-Hexanone	107

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Client Sample ID: CCV

Lab ID#: 1312089-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121302**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/13/13 11:11 AM**	

Compound	%Recovery
Dibromochloromethane	101
1,2-Dibromoethane (EDB)	100
Chlorobenzene	100
Ethyl Benzene	106
m,p-Xylene	109
o-Xylene	107
Styrene	115
Bromoform	100
Cumene	109
1,1,2,2-Tetrachloroethane	100
Propylbenzene	105
4-Ethyltoluene	106
1,3,5-Trimethylbenzene	101
1,2,4-Trimethylbenzene	105
1,3-Dichlorobenzene	99
1,4-Dichlorobenzene	96
alpha-Chlorotoluene	103
1,2-Dichlorobenzene	100
1,2,4-Trichlorobenzene	94
Hexachlorobutadiene	97
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	106	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: CCV

Lab ID#: 1312089-07B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2121602**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/16/13 08:41 AM**	

Compound	%Recovery
Freon 12	81
Freon 114	74
Chloromethane	73
Vinyl Chloride	77
1,3-Butadiene	76
Bromomethane	85
Chloroethane	79
Freon 11	82
Ethanol	92
Freon 113	78
1,1-Dichloroethene	80
Acetone	89
2-Propanol	80
Carbon Disulfide	84
3-Chloropropene	86
Methylene Chloride	76
Methyl tert-butyl ether	79
trans-1,2-Dichloroethene	78
Hexane	80
1,1-Dichloroethane	79
2-Butanone (Methyl Ethyl Ketone)	83
cis-1,2-Dichloroethene	81
Tetrahydrofuran	82
Chloroform	82
1,1,1-Trichloroethane	83
Cyclohexane	78
Carbon Tetrachloride	83
2,2,4-Trimethylpentane	81
Benzene	80
1,2-Dichloroethane	86
Heptane	83
Trichloroethene	81
1,2-Dichloropropane	84
1,4-Dioxane	78
Bromodichloromethane	85
cis-1,3-Dichloropropene	86
4-Methyl-2-pentanone	86
Toluene	82
trans-1,3-Dichloropropene	89
1,1,2-Trichloroethane	80
Tetrachloroethene	78
2-Hexanone	81

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Client Sample ID: CCV

Lab ID#: 1312089-07B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2121602**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/16/13 08:41 AM**	

Compound	%Recovery
Dibromochloromethane	83
1,2-Dibromoethane (EDB)	82
Chlorobenzene	78
Ethyl Benzene	82
m,p-Xylene	81
o-Xylene	81
Styrene	81
Bromoform	82
Cumene	81
1,1,2,2-Tetrachloroethane	78
Propylbenzene	80
4-Ethyltoluene	81
1,3,5-Trimethylbenzene	80
1,2,4-Trimethylbenzene	84
1,3-Dichlorobenzene	73
1,4-Dichlorobenzene	78
alpha-Chlorotoluene	92
1,2-Dichlorobenzene	76
1,2,4-Trichlorobenzene	64 Q
Hexachlorobutadiene	70
TPH ref. to Gasoline (MW=100)	100

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	108	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: LCS

Lab ID#: 1312089-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121303**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/13/13 11:45 AM**	

Compound	%Recovery	Method Limits
Freon 12	93	70-130
Freon 114	94	70-130
Chloromethane	93	70-130
Vinyl Chloride	88	70-130
1,3-Butadiene	82	70-130
Bromomethane	121	70-130
Chloroethane	98	70-130
Freon 11	92	70-130
Ethanol	101	70-130
Freon 113	105	70-130
1,1-Dichloroethene	103	70-130
Acetone	92	70-130
2-Propanol	102	70-130
Carbon Disulfide	87	70-130
3-Chloropropene	94	70-130
Methylene Chloride	98	70-130
Methyl tert-butyl ether	94	70-130
trans-1,2-Dichloroethene	80	70-130
Hexane	107	70-130
1,1-Dichloroethane	96	70-130
2-Butanone (Methyl Ethyl Ketone)	103	70-130
cis-1,2-Dichloroethene	108	70-130
Tetrahydrofuran	99	70-130
Chloroform	94	70-130
1,1,1-Trichloroethane	92	70-130
Cyclohexane	104	70-130
Carbon Tetrachloride	93	70-130
2,2,4-Trimethylpentane	107	70-130
Benzene	99	70-130
1,2-Dichloroethane	94	70-130
Heptane	115	70-130
Trichloroethene	94	70-130
1,2-Dichloropropane	96	70-130
1,4-Dioxane	110	70-130
Bromodichloromethane	99	70-130
cis-1,3-Dichloropropene	102	70-130
4-Methyl-2-pentanone	107	70-130
Toluene	98	70-130
trans-1,3-Dichloropropene	94	70-130
1,1,2-Trichloroethane	96	70-130
Tetrachloroethene	98	70-130
2-Hexanone	105	70-130

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Client Sample ID: LCS

Lab ID#: 1312089-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121303**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/13/13 11:45 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	102	70-130
1,2-Dibromoethane (EDB)	95	70-130
Chlorobenzene	96	70-130
Ethyl Benzene	101	70-130
m,p-Xylene	105	70-130
o-Xylene	102	70-130
Styrene	112	70-130
Bromoform	101	70-130
Cumene	108	70-130
1,1,2,2-Tetrachloroethane	96	70-130
Propylbenzene	105	70-130
4-Ethyltoluene	104	70-130
1,3,5-Trimethylbenzene	98	70-130
1,2,4-Trimethylbenzene	102	70-130
1,3-Dichlorobenzene	96	70-130
1,4-Dichlorobenzene	93	70-130
alpha-Chlorotoluene	109	70-130
1,2-Dichlorobenzene	97	70-130
1,2,4-Trichlorobenzene	99	70-130
Hexachlorobutadiene	101	70-130
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	94	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: LCSD

Lab ID#: 1312089-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121304**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/13/13 12:08 PM**	

Compound	%Recovery	Method Limits
Freon 12	93	70-130
Freon 114	92	70-130
Chloromethane	92	70-130
Vinyl Chloride	87	70-130
1,3-Butadiene	79	70-130
Bromomethane	122	70-130
Chloroethane	95	70-130
Freon 11	92	70-130
Ethanol	101	70-130
Freon 113	106	70-130
1,1-Dichloroethene	105	70-130
Acetone	93	70-130
2-Propanol	101	70-130
Carbon Disulfide	88	70-130
3-Chloropropene	98	70-130
Methylene Chloride	97	70-130
Methyl tert-butyl ether	94	70-130
trans-1,2-Dichloroethene	80	70-130
Hexane	108	70-130
1,1-Dichloroethane	97	70-130
2-Butanone (Methyl Ethyl Ketone)	102	70-130
cis-1,2-Dichloroethene	104	70-130
Tetrahydrofuran	99	70-130
Chloroform	94	70-130
1,1,1-Trichloroethane	93	70-130
Cyclohexane	107	70-130
Carbon Tetrachloride	93	70-130
2,2,4-Trimethylpentane	109	70-130
Benzene	99	70-130
1,2-Dichloroethane	94	70-130
Heptane	116	70-130
Trichloroethene	94	70-130
1,2-Dichloropropane	97	70-130
1,4-Dioxane	121	70-130
Bromodichloromethane	98	70-130
cis-1,3-Dichloropropene	102	70-130
4-Methyl-2-pentanone	109	70-130
Toluene	98	70-130
trans-1,3-Dichloropropene	96	70-130
1,1,2-Trichloroethane	98	70-130
Tetrachloroethene	99	70-130
2-Hexanone	108	70-130

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Client Sample ID: LCSD

Lab ID#: 1312089-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121304**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/13/13 12:08 PM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	103	70-130
1,2-Dibromoethane (EDB)	98	70-130
Chlorobenzene	98	70-130
Ethyl Benzene	104	70-130
m,p-Xylene	108	70-130
o-Xylene	106	70-130
Styrene	112	70-130
Bromoform	103	70-130
Cumene	110	70-130
1,1,2,2-Tetrachloroethane	99	70-130
Propylbenzene	106	70-130
4-Ethyltoluene	108	70-130
1,3,5-Trimethylbenzene	100	70-130
1,2,4-Trimethylbenzene	105	70-130
1,3-Dichlorobenzene	97	70-130
1,4-Dichlorobenzene	96	70-130
alpha-Chlorotoluene	112	70-130
1,2-Dichlorobenzene	100	70-130
1,2,4-Trichlorobenzene	105	70-130
Hexachlorobutadiene	104	70-130
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	93	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: LCS

Lab ID#: 1312089-08B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2121603**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/16/13 09:33 AM**	

Compound	%Recovery	Method Limits
Freon 12	86	70-130
Freon 114	80	70-130
Chloromethane	81	70-130
Vinyl Chloride	82	70-130
1,3-Butadiene	80	70-130
Bromomethane	90	70-130
Chloroethane	82	70-130
Freon 11	82	70-130
Ethanol	99	70-130
Freon 113	92	70-130
1,1-Dichloroethene	90	70-130
Acetone	85	70-130
2-Propanol	90	70-130
Carbon Disulfide	77	70-130
3-Chloropropene	89	70-130
Methylene Chloride	86	70-130
Methyl tert-butyl ether	84	70-130
trans-1,2-Dichloroethene	70	70-130
Hexane	84	70-130
1,1-Dichloroethane	86	70-130
2-Butanone (Methyl Ethyl Ketone)	90	70-130
cis-1,2-Dichloroethene	98	70-130
Tetrahydrofuran	85	70-130
Chloroform	86	70-130
1,1,1-Trichloroethane	86	70-130
Cyclohexane	85	70-130
Carbon Tetrachloride	88	70-130
2,2,4-Trimethylpentane	85	70-130
Benzene	84	70-130
1,2-Dichloroethane	89	70-130
Heptane	88	70-130
Trichloroethene	85	70-130
1,2-Dichloropropane	86	70-130
1,4-Dioxane	85	70-130
Bromodichloromethane	90	70-130
cis-1,3-Dichloropropene	94	70-130
4-Methyl-2-pentanone	93	70-130
Toluene	84	70-130
trans-1,3-Dichloropropene	91	70-130
1,1,2-Trichloroethane	85	70-130
Tetrachloroethene	85	70-130
2-Hexanone	101	70-130

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Client Sample ID: LCS

Lab ID#: 1312089-08B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2121603**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/16/13 09:33 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	92	70-130
1,2-Dibromoethane (EDB)	87	70-130
Chlorobenzene	82	70-130
Ethyl Benzene	85	70-130
m,p-Xylene	85	70-130
o-Xylene	86	70-130
Styrene	90	70-130
Bromoform	91	70-130
Cumene	88	70-130
1,1,2,2-Tetrachloroethane	82	70-130
Propylbenzene	88	70-130
4-Ethyltoluene	88	70-130
1,3,5-Trimethylbenzene	86	70-130
1,2,4-Trimethylbenzene	87	70-130
1,3-Dichlorobenzene	77	70-130
1,4-Dichlorobenzene	82	70-130
alpha-Chlorotoluene	108	70-130
1,2-Dichlorobenzene	79	70-130
1,2,4-Trichlorobenzene	67 Q	70-130
Hexachlorobutadiene	72	70-130
TPH ref. to Gasoline (MW=100)	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: LCSD

Lab ID#: 1312089-08BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2121604**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/16/13 10:03 AM**	

Compound	%Recovery	Method Limits
Freon 12	88	70-130
Freon 114	84	70-130
Chloromethane	81	70-130
Vinyl Chloride	87	70-130
1,3-Butadiene	82	70-130
Bromomethane	92	70-130
Chloroethane	85	70-130
Freon 11	84	70-130
Ethanol	94	70-130
Freon 113	94	70-130
1,1-Dichloroethene	91	70-130
Acetone	85	70-130
2-Propanol	93	70-130
Carbon Disulfide	80	70-130
3-Chloropropene	91	70-130
Methylene Chloride	93	70-130
Methyl tert-butyl ether	87	70-130
trans-1,2-Dichloroethene	74	70-130
Hexane	87	70-130
1,1-Dichloroethane	88	70-130
2-Butanone (Methyl Ethyl Ketone)	90	70-130
cis-1,2-Dichloroethene	99	70-130
Tetrahydrofuran	89	70-130
Chloroform	89	70-130
1,1,1-Trichloroethane	88	70-130
Cyclohexane	87	70-130
Carbon Tetrachloride	91	70-130
2,2,4-Trimethylpentane	87	70-130
Benzene	86	70-130
1,2-Dichloroethane	89	70-130
Heptane	88	70-130
Trichloroethene	86	70-130
1,2-Dichloropropane	87	70-130
1,4-Dioxane	88	70-130
Bromodichloromethane	90	70-130
cis-1,3-Dichloropropene	94	70-130
4-Methyl-2-pentanone	95	70-130
Toluene	85	70-130
trans-1,3-Dichloropropene	90	70-130
1,1,2-Trichloroethane	85	70-130
Tetrachloroethene	85	70-130
2-Hexanone	100	70-130

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Client Sample ID: LCSD

Lab ID#: 1312089-08BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2121604**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/16/13 10:03 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	92	70-130
1,2-Dibromoethane (EDB)	87	70-130
Chlorobenzene	82	70-130
Ethyl Benzene	84	70-130
m,p-Xylene	83	70-130
o-Xylene	83	70-130
Styrene	88	70-130
Bromoform	91	70-130
Cumene	86	70-130
1,1,2,2-Tetrachloroethane	82	70-130
Propylbenzene	85	70-130
4-Ethyltoluene	86	70-130
1,3,5-Trimethylbenzene	83	70-130
1,2,4-Trimethylbenzene	85	70-130
1,3-Dichlorobenzene	75	70-130
1,4-Dichlorobenzene	81	70-130
alpha-Chlorotoluene	107	70-130
1,2-Dichlorobenzene	78	70-130
1,2,4-Trichlorobenzene	68 Q	70-130
Hexachlorobutadiene	72	70-130
TPH ref. to Gasoline (MW=100)	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	105	70-130
4-Bromofluorobenzene	98	70-130

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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 Chris Rhea

Collected by: (Print and Sign) Chris Rhea / Roxanne Russell

Company EES Environmental Email chris

Address 240 N Broadway, Ste 203 City Portland State OR Zip 97227

Phone 503-847-2740 Fax –

Project Info:

P.O. #

Project # ~~D29~~ 1179-02

Project Name Plaid Pantry 112

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	SVE-4	3056	12-4-13	1219	TO-15	30	6		
02A	SVE-5	37355	12-4-13	1225		30	6		
03A	SVE-3	8005	12-4-13	1238		30	6		
04A	SVE-1	34577	12-4-13	1245		30	6		
05A	SVE Blower Inlet	36398	12-4-13	1252		30	6		

Relinquished by: (signature) Date/Time: 1430 / 12-4-13
Received by: (signature) Date/Time: 12-6-13 1120

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 #
FedEx		NA	Good	Yes No None	1312089

Form 1293 rev.11

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1/7/2014
Mr. Chris Rhea
EES Environmental Consulting, Inc.
240 N Broadway
Suite 203
Portland OR 97227

Project Name: Plaid Pantry 112
Project #: 1179-02
Workorder #: 1312364A

Dear Mr. Chris Rhea

The following report includes the data for the above referenced project for sample(s) received on 12/20/2013 at Air Toxics Ltd.

The data and associated QC analyzed by 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

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WORK ORDER #: 1312364A

Work Order Summary

CLIENT:	Mr. Chris Rhea EES Environmental Consulting, Inc. 240 N Broadway Suite 203 Portland, OR 97227	**BILL TO:**	Mr. Chris Rhea EES Environmental Consulting, Inc. 240 N Broadway Suite 203 Portland, OR 97227
PHONE:	530-847-2740	**P.O. #**	
FAX:		**PROJECT #**	1179-02 Plaid Pantry 112
DATE RECEIVED:	12/20/2013	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	01/07/2014		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
02A	Post-GAC	TO-15	4.9 "Hg	14.8 psi
03A	Lab Blank	TO-15	NA	NA
04A	CCV	TO-15	NA	NA
05A	LCS	TO-15	NA	NA
05AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 01/07/14

Technical Director

Certification numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-13-6, UT NELAP CA009332013-4, VA NELAP - 460197, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2013, Expiration date: 10/17/2014.
Eurofins Air Toxics Inc.. 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
EPA Method TO-15
EES Environmental Consulting, Inc.
Workorder# 1312364A

One 1 Liter Summa Canister sample was received on December 20, 2013. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

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.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

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, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

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

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: Post-GAC

Lab ID#: 1312364A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	1.6	5.9	8.1
Freon 11	1.2	3.4	6.7	19
Ethanol	4.8	17 J	9.0	32 J
Cyclohexane	1.2	2.0	4.1	6.9
Toluene	1.2	1.4	4.5	5.4
TPH ref. to Gasoline (MW=100)	60	470	240	1900

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Client Sample ID: Post-GAC

Lab ID#: 1312364A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j122808**	**Date of Collection:**	**12/18/13 2:30:00 PM**
Dil. Factor:	**2.40**	**Date of Analysis:**	**12/28/13 10:15 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	1.6	5.9	8.1
Freon 114	1.2	Not Detected	8.4	Not Detected
Chloromethane	12	Not Detected	25	Not Detected
Vinyl Chloride	1.2	Not Detected	3.1	Not Detected
1,3-Butadiene	1.2	Not Detected	2.6	Not Detected
Bromomethane	12	Not Detected	47	Not Detected
Chloroethane	4.8	Not Detected	13	Not Detected
Freon 11	1.2	3.4	6.7	19
Ethanol	4.8	17 J	9.0	32 J
Freon 113	1.2	Not Detected	9.2	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Acetone	12	Not Detected	28	Not Detected
2-Propanol	4.8	Not Detected	12	Not Detected
Carbon Disulfide	4.8	Not Detected	15	Not Detected
3-Chloropropene	4.8	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	42	Not Detected
Methyl tert-butyl ether	1.2	Not Detected	4.3	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Hexane	1.2	Not Detected	4.2	Not Detected
1,1-Dichloroethane	1.2	Not Detected	4.8	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.8	Not Detected	14	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Tetrahydrofuran	1.2	Not Detected	3.5	Not Detected
Chloroform	1.2	Not Detected	5.8	Not Detected
1,1,1-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Cyclohexane	1.2	2.0	4.1	6.9
Carbon Tetrachloride	1.2	Not Detected	7.6	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.6	Not Detected
Benzene	1.2	Not Detected	3.8	Not Detected
1,2-Dichloroethane	1.2	Not Detected	4.8	Not Detected
Heptane	1.2	Not Detected	4.9	Not Detected
Trichloroethene	1.2	Not Detected	6.4	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.5	Not Detected
1,4-Dioxane	4.8	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	8.0	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	4.9	Not Detected
Toluene	1.2	1.4	4.5	5.4
trans-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Tetrachloroethene	1.2	Not Detected	8.1	Not Detected
2-Hexanone	4.8	Not Detected	20	Not Detected

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Client Sample ID: Post-GAC

Lab ID#: 1312364A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j122808**	**Date of Collection: 12/18/13 2:30:00 PM**	
Dil. Factor:	**2.40**	**Date of Analysis: 12/28/13 10:15 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.2	Not Detected
Chlorobenzene	1.2	Not Detected	5.5	Not Detected
Ethyl Benzene	1.2	Not Detected	5.2	Not Detected
m,p-Xylene	1.2	Not Detected	5.2	Not Detected
o-Xylene	1.2	Not Detected	5.2	Not Detected
Styrene	1.2	Not Detected	5.1	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.9	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.2	Not Detected
Propylbenzene	1.2	Not Detected	5.9	Not Detected
4-Ethyltoluene	1.2	Not Detected	5.9	Not Detected
1,3,5-Trimethylbenzene	1.2	Not Detected	5.9	Not Detected
1,2,4-Trimethylbenzene	1.2	Not Detected	5.9	Not Detected
1,3-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.2	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,2,4-Trichlorobenzene	4.8	Not Detected	36	Not Detected
Hexachlorobutadiene	4.8	Not Detected	51	Not Detected
TPH ref. to Gasoline (MW=100)	60	470	240	1900

J = Estimated value due to bias in the CCV.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	108	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1312364A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j122807**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/28/13 09:32 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected UJ	3.8	Not Detected UJ
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1312364A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j122807**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/28/13 09:32 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	108	70-130
4-Bromofluorobenzene	104	70-130

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Client Sample ID: CCV

Lab ID#: 1312364A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j122802**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/28/13 06:54 AM**	

Compound	%Recovery
Freon 12	101
Freon 114	93
Chloromethane	111
Vinyl Chloride	91
1,3-Butadiene	84
Bromomethane	89
Chloroethane	88
Freon 11	105
Ethanol	69 Q
Freon 113	87
1,1-Dichloroethene	91
Acetone	78
2-Propanol	87
Carbon Disulfide	89
3-Chloropropene	91
Methylene Chloride	89
Methyl tert-butyl ether	88
trans-1,2-Dichloroethene	93
Hexane	85
1,1-Dichloroethane	95
2-Butanone (Methyl Ethyl Ketone)	91
cis-1,2-Dichloroethene	88
Tetrahydrofuran	82
Chloroform	97
1,1,1-Trichloroethane	96
Cyclohexane	90
Carbon Tetrachloride	100
2,2,4-Trimethylpentane	87
Benzene	98
1,2-Dichloroethane	108
Heptane	97
Trichloroethene	96
1,2-Dichloropropane	100
1,4-Dioxane	93
Bromodichloromethane	104
cis-1,3-Dichloropropene	95
4-Methyl-2-pentanone	92
Toluene	100
trans-1,3-Dichloropropene	95
1,1,2-Trichloroethane	98
Tetrachloroethene	90
2-Hexanone	93

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Client Sample ID: CCV

Lab ID#: 1312364A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j122802**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/28/13 06:54 AM**	

Compound	%Recovery
Dibromochloromethane	97
1,2-Dibromoethane (EDB)	101
Chlorobenzene	85
Ethyl Benzene	101
m,p-Xylene	99
o-Xylene	101
Styrene	97
Bromoform	99
Cumene	98
1,1,2,2-Tetrachloroethane	102
Propylbenzene	96
4-Ethyltoluene	94
1,3,5-Trimethylbenzene	99
1,2,4-Trimethylbenzene	93
1,3-Dichlorobenzene	102
1,4-Dichlorobenzene	102
alpha-Chlorotoluene	97
1,2-Dichlorobenzene	100
1,2,4-Trichlorobenzene	119
Hexachlorobutadiene	118
TPH ref. to Gasoline (MW=100)	100

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	107	70-130
1,2-Dichloroethane-d4	105	70-130
4-Bromofluorobenzene	105	70-130

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Client Sample ID: LCS

Lab ID#: 1312364A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j122803**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/28/13 07:28 AM**	

Compound	%Recovery	Method Limits
Freon 12	104	70-130
Freon 114	98	70-130
Chloromethane	116	70-130
Vinyl Chloride	95	70-130
1,3-Butadiene	90	70-130
Bromomethane	92	70-130
Chloroethane	90	70-130
Freon 11	107	70-130
Ethanol	77	70-130
Freon 113	101	70-130
1,1-Dichloroethene	102	70-130
Acetone	81	70-130
2-Propanol	93	70-130
Carbon Disulfide	86	70-130
3-Chloropropene	95	70-130
Methylene Chloride	101	70-130
Methyl tert-butyl ether	92	70-130
trans-1,2-Dichloroethene	84	70-130
Hexane	90	70-130
1,1-Dichloroethane	102	70-130
2-Butanone (Methyl Ethyl Ketone)	96	70-130
cis-1,2-Dichloroethene	103	70-130
Tetrahydrofuran	83	70-130
Chloroform	103	70-130
1,1,1-Trichloroethane	100	70-130
Cyclohexane	95	70-130
Carbon Tetrachloride	105	70-130
2,2,4-Trimethylpentane	94	70-130
Benzene	99	70-130
1,2-Dichloroethane	106	70-130
Heptane	98	70-130
Trichloroethene	96	70-130
1,2-Dichloropropane	99	70-130
1,4-Dioxane	97	70-130
Bromodichloromethane	107	70-130
cis-1,3-Dichloropropene	98	70-130
4-Methyl-2-pentanone	94	70-130
Toluene	102	70-130
trans-1,3-Dichloropropene	90	70-130
1,1,2-Trichloroethane	95	70-130
Tetrachloroethene	87	70-130
2-Hexanone	91	70-130

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Client Sample ID: LCS

Lab ID#: 1312364A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j122803**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/28/13 07:28 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	100	70-130
1,2-Dibromoethane (EDB)	100	70-130
Chlorobenzene	82	70-130
Ethyl Benzene	98	70-130
m,p-Xylene	100	70-130
o-Xylene	97	70-130
Styrene	95	70-130
Bromoform	102	70-130
Cumene	99	70-130
1,1,2,2-Tetrachloroethane	98	70-130
Propylbenzene	97	70-130
4-Ethyltoluene	96	70-130
1,3,5-Trimethylbenzene	98	70-130
1,2,4-Trimethylbenzene	90	70-130
1,3-Dichlorobenzene	100	70-130
1,4-Dichlorobenzene	101	70-130
alpha-Chlorotoluene	102	70-130
1,2-Dichlorobenzene	100	70-130
1,2,4-Trichlorobenzene	123	70-130
Hexachlorobutadiene	119	70-130
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	105	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: LCSD

Lab ID#: 1312364A-05AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j122804**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/28/13 08:00 AM**	

Compound	%Recovery	Method Limits
Freon 12	102	70-130
Freon 114	96	70-130
Chloromethane	113	70-130
Vinyl Chloride	93	70-130
1,3-Butadiene	86	70-130
Bromomethane	92	70-130
Chloroethane	94	70-130
Freon 11	104	70-130
Ethanol	74	70-130
Freon 113	102	70-130
1,1-Dichloroethene	103	70-130
Acetone	83	70-130
2-Propanol	90	70-130
Carbon Disulfide	84	70-130
3-Chloropropene	93	70-130
Methylene Chloride	101	70-130
Methyl tert-butyl ether	91	70-130
trans-1,2-Dichloroethene	81	70-130
Hexane	89	70-130
1,1-Dichloroethane	101	70-130
2-Butanone (Methyl Ethyl Ketone)	93	70-130
cis-1,2-Dichloroethene	101	70-130
Tetrahydrofuran	84	70-130
Chloroform	101	70-130
1,1,1-Trichloroethane	100	70-130
Cyclohexane	94	70-130
Carbon Tetrachloride	103	70-130
2,2,4-Trimethylpentane	93	70-130
Benzene	100	70-130
1,2-Dichloroethane	107	70-130
Heptane	98	70-130
Trichloroethene	98	70-130
1,2-Dichloropropane	100	70-130
1,4-Dioxane	96	70-130
Bromodichloromethane	107	70-130
cis-1,3-Dichloropropene	100	70-130
4-Methyl-2-pentanone	96	70-130
Toluene	101	70-130
trans-1,3-Dichloropropene	88	70-130
1,1,2-Trichloroethane	93	70-130
Tetrachloroethene	87	70-130
2-Hexanone	93	70-130

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Client Sample ID: LCSD

Lab ID#: 1312364A-05AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j122804**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/28/13 08:00 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	98	70-130
1,2-Dibromoethane (EDB)	98	70-130
Chlorobenzene	82	70-130
Ethyl Benzene	97	70-130
m,p-Xylene	96	70-130
o-Xylene	96	70-130
Styrene	95	70-130
Bromoform	100	70-130
Cumene	97	70-130
1,1,2,2-Tetrachloroethane	98	70-130
Propylbenzene	96	70-130
4-Ethyltoluene	93	70-130
1,3,5-Trimethylbenzene	96	70-130
1,2,4-Trimethylbenzene	89	70-130
1,3-Dichlorobenzene	98	70-130
1,4-Dichlorobenzene	99	70-130
alpha-Chlorotoluene	101	70-130
1,2-Dichlorobenzene	98	70-130
1,2,4-Trichlorobenzene	122	70-130
Hexachlorobutadiene	119	70-130
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	106	70-130
4-Bromofluorobenzene	104	70-130

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Sample Transportation Notice
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180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager Chris Rhea, Paul Ecker
Collected by: (Print and Sign) Roxanne Russell / Roxanne Russell
Company EES Environmental Email chris@ees-enviro.com
Address 240 N Broadway, ste 203 City Portland State OR Zip 97227
Phone 503-847-2740 Fax

Project Info:
P.O. #
Project # 1179-02
Project Name Plaid Pantry 112

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	SVE-2	33650	12-18-13	1420	-HOLD-	30	7.5		
02A	Post-GAC	15733	12-18-13	1430	TO-15	30	6		

HK 12/20/13

Relinquished by: (signature) Date/Time: Roxanne Russell 12-18-13 1600
Received by: (signature) Date/Time: 12-20-13 1000
Relinquished by: (signature) Date/Time:
Received by: (signature) Date/Time:
Relinquished by: (signature) Date/Time:
Received by: (signature) Date/Time:

Notes:
Hold SVE-2 for potential future follow-up analysis

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fedex		NA	Good	Yes No None	1312364

Form 1293 rev.11