June 9, 2014

Diane Escobedo
Department of Ecology
Toxics Cleanup Program, MWRO
3190 160th Avenue SE
Bellevue, Washington 98008

Re: Progress Report – Classic Cleaners – Cascade Plaza
7601 Evergreen Way, Everett, Washington
Cleanup Site ID: 4690
Facility/Site No.: 1382746
VCP Project No.: NW2745

Ms. Escobedo:

This letter report has been prepared by Apex Companies, LLC (Apex) on behalf of Columbia Cascade Plaza, LLC (the current Site owner) to provide the Washington State Department of Ecology (Ecology) with updated information for the former Classic Cleaners facility (Site; now occupied by a Domino's Pizza franchise), located at 7601 Evergreen Way, Everett, Washington (Figure 1). The Site was enrolled in the Voluntary Cleanup Program (VCP) in March 2002 due to release(s) from historical dry cleaning operations by Classic Cleaners at Cascade Plaza tenant space B004. Soil and groundwater investigations and groundwater monitoring activities were completed at the Site from 1997 through 2002. Reports describing these site investigation activities were submitted to Ecology in a VCP application package that was submitted in 2002. The Site was re-enrolled in the VCP on June 24, 2013 and Ecology issued an opinion letter for the Site on September 18, 2013.

This report presents Regency's response to Ecology's request for information in the opinion letter and summarizes the results of historical soil and groundwater investigation activities performed at the Site prior to the 2013 re-enrollment in the VCP. The report also describes groundwater and soil gas sampling completed at the Site since the 2013 re-enrollment, and proposes a scope of work and schedule for additional investigation activities.

Collectively, the proposed scope of work and site investigation data (historical and recent) are intended to meet Ecology requirements for site characterization and ultimately be sufficient to obtain a no further action (NFA) opinion from Ecology.

SITE SETTING

The Site is located at Cascade Plaza, which is a single-story shopping mall constructed on two parcels totaling approximately 19.26 acres. The parcels were a woodland that was first developed in the 1940s as residential properties, and in the 1950s as a drive-in movie theater. The shopping mall was constructed in the 1980s and includes five buildings and a retail gas station. The five buildings have historically housed various retail stores, offices, restaurants, an automobile rental agency, and a dry cleaning facility. Classic Cleaners operated in unit B004 from the early 1980s through 1999. Unit B004 is currently occupied by a Domino's Pizza franchise. The current layout of Cascade Plaza and the historical location of Classic Cleaners are shown on Figure 2.

HISTORICAL SOIL AND GROUNDWATER INVESTIGATION AND GROUNDWATER MONITORING

Soil and groundwater investigations and groundwater monitoring were completed at the Site from 1997 through 2002 by ATC Associates (ATC) and Whitman Environmental Services (WES). These activities are summarized below. Sampling locations are shown on Figure 2. Soil sampling data and corresponding Model Toxics Control Act (MTCA) Cleanup Levels (CULs) are listed in Table 1. Groundwater elevation data are listed in Table 2. Groundwater sampling data and corresponding CULs and Ground Water Screening Levels (SLs) for soil vapor intrusion (VI)[1] are listed in Table 3.

1997 Soil and Groundwater Investigation

Three borings (HB-1 through HB-3) were advanced inside unit B004 near the dry cleaning equipment, and three borings (B-1 through B-3) were advanced in the parking areas east and west of unit B004. Borings HB-1 through HB-3 were completed through the concrete slab using a core drill and a hand auger. The borings were terminated when dense soils were encountered; therefore, the borings were not completed to the depth of groundwater. Soil samples were collected from borings HB-1 and HB-2 at a depth of approximately 8 inches below the Portland cement concrete (PCC) slab, and from HB-3 at depths of 8 inches and 3 feet below the PCC slab. Borings B-1 through B-3 were completed to a depth of 15 feet below ground surface (bgs) using a drilling rig equipped with a hollow stem auger. Soil samples were collected at depths of 5, 7.5, and 10 feet bgs in each boring and groundwater was first encountered at depths between 10 and 11 feet bgs. Groundwater samples were collected from borings B-2 and B-3. Soil and groundwater samples were analyzed for halogenated volatile organic compounds (HVOCs). Tetrachloroethene (PCE) was detected in the 8-inch-deep soil samples collected from borings HB-1 and HB-3 (0.32 and 0.13 milligrams per kilogram [mg/kg]) at concentrations that exceed the MTCA Method A CUL of 0.05 mg/kg. PCE was detected in groundwater samples collected from borings B-2 and B-3 at concentrations that were below the MTCA Method A CUL and SL. HVOCs were not detected in the other soil and groundwater samples.

1997 Monitoring Well Installation and Groundwater Sampling

Three monitoring wells (MW-1, MW-2, and MW-3) were installed and sampled to evaluate the extent of HVOC impacts in groundwater at the Site. Well MW-1 was installed in the parking area west of unit B004. Wells MW-2 and MW-3 were installed in the parking area east of unit B004. The wells were constructed to a depth of 20 feet bgs. One soil sample was collected from each boring at a depth of 10 feet bgs, which was approximately one to two feet below the depth of groundwater. HVOCs were not detected in any of the soil samples. PCE was detected in the groundwater samples collected from wells MW-2 and MW-3 at concentrations that exceed the SL, but were below the CUL. HVOCs were not detected in the other groundwater samples.

1999 Monitoring Well Installation, Groundwater Sampling, and Soil Sampling

Monitoring well MW-4 was installed in the parking area northeast of unit B004 to further evaluate HVOC impacts in groundwater downgradient of the unit B004. The well was constructed to a depth of approximately 18 feet. Soil samples were collected at 5-foot intervals and field screened for HVOCs. A soil sample collected at a depth of 12.5 feet bgs, which was approximately 0.5 foot below the groundwater surface, was submitted for laboratory analysis of HVOCs. HVOCs were not detected in the soil sample. PCE was detected in the groundwater sample collected from well MW-4 at concentrations below the CUL.

The 1999 site investigation activities also included advancing three borings (Core 1 through Core 3) inside unit B003, which is located adjacent north of unit B004. The borings were completed through the PCC slab using a core drill

[1] Listed in *Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action* (VI Guidance; Ecology, 2009).

and a hand auger. One soil sample was collected from each boring at a depth of one foot. HVOCs were not detected in the soil samples.

1998-2000 Groundwater Monitoring

Groundwater in wells MW-1 through MW-3 was monitored approximately semi-annually from February 1998 through August 2000 (7 events) to evaluate HVOC concentration trends over time. Well MW-4 was monitored approximately semi-annually in 1999 and 2000 (5 events). The depth to groundwater at the Site ranged from approximately 7.8 to 10.5 feet. The inferred groundwater flow direction was towards the northeast. The average flow gradient was 0.008 foot per foot (ft/ft). Historical groundwater elevation maps are included in Attachment A. PCE, chloroform, and 1,1,1-trichloroethane (TCA) were detected in one or more wells (MW-2 through MW-4) during at least one sampling event. The detected concentrations were below CULs, but concentrations of PCE and chloroform in wells MW-2 and MW-3 occasionally exceeded the SLs. No other HVOCs were detected in the groundwater samples.

2002 Supplemental Soil and Groundwater Sampling

A supplemental investigation was completed in December 2002 to provide additional information regarding soil and groundwater concentrations at and near unit B004. Two borings (HB-4 and HB-5) were advanced inside the building where the dry cleaning equipment had been located[2]. A third boring (HB-6) was advanced outside the building near the sanitary sewer lines that convey waste from the building. Borings HB-4 and HB-5 were completed to depths of 12 and 15 feet below the PCC slab, respectively, which were the approximate depths at which groundwater was first encountered. Boring HB-6 was terminated at 5 feet bgs, which, reportedly, is approximately the depth of the sanitary sewer pipe. Soil samples were collected over the entire depth of each of the borings and field screened for HVOCs. Two samples collected from borings HB-4 and HB-5, at a depth of approximately one to two feet beneath the PCC slab, and one soil sample, collected from HB-6 at a depth of 3 feet bgs, were submitted for laboratory analysis of HVOCs based on the results of field screening. The soil samples collected from borings HB-4 through HB-6 contained PCE at concentrations below the CUL. No other HVOCs were detected in the soil samples. Groundwater samples were collected from borings HB-4 and HB-5 and submitted for laboratory analysis of HVOCs. The PCE concentration (9.36 micrograms per liter [µg/L]) in the groundwater sample collected from boring HB-4 exceeded the CUL.

2013 and 2014 Groundwater Monitoring and Soil Vapor Intrusion Assessment Sampling

Groundwater monitoring and a soil vapor intrusion investigation were completed by Apex in 2013 and 2014. These activities were performed to obtain information about current groundwater conditions, evaluate potential vapor intrusion using the Tier I/II screening method described in the Ecology VI Guidance, and determine what, if any, additional investigation and/or remedial activities could be required to obtain a NFA opinion from Ecology. These activities are summarized below. The data obtained from these investigation activities has not previously been provided to Ecology.

Groundwater Monitoring. Monitoring wells MW-1 through MW-4 were redeveloped on July 15, 2013 using a peristaltic pump. The wells were allowed to equilibrate for approximately 24 hours following redevelopment. Groundwater levels were measured in, and samples were collected from, wells MW-1 through MW-4 on July 16, 2013. A second round of groundwater monitoring was completed on March 27, 2014. Groundwater level measurement was performed following Apex Standard Operating Procedure (SOP) 2.14 (Attachment B). Groundwater was approximately 8.2 to 10.1 feet bgs, which is within the historical range. The inferred groundwater flow direction was to the northeast at a gradient of approximately 0.008 ft/ft, which is consistent with historical

[2] The dry cleaning equipment was removed from the facility in approximately 2006. The facility has not been used for dry cleaning since that time.

measurements. Groundwater elevation data are listed in Table 2 and groundwater elevations and elevation contours for July 16, 2013 and March 27, 2014 are shown on Figures 3 and 4, respectively. Groundwater samples were collected using low-flow methods following Apex SOP 2.5 (Attachment B), placed into laboratory-provided containers, and submitted to TestAmerica in Tacoma, Washington under chain-of-custody procedures. Samples were analyzed for HVOCs by U.S. Environmental Protection Agency (EPA) Method 8260B. HVOCs were not detected in the groundwater samples. Groundwater sampling data and corresponding CULs and SLs are listed in Table 3. The laboratory report and a QA/QC data review are provided in Attachment B.

Tier I Vapor Intrusion Assessment Sampling. Soil gas sampling was performed by Apex on October 4, 2013 to complete the Tier I vapor intrusion evaluation for unit B004. The first part of the Tier I evaluation process was completed using the July 2013 groundwater sampling data, which indicate that there is no vapor intrusion risk from current groundwater conditions beneath unit B004. Soil gas sampling activities included installation of soil gas probes VS-1 and VS-2 within unit B004 in the vicinity of historical boring HB-1. Sampling locations are shown on Figure 2. Soil gas in the vicinity of boring HB-1 was targeted because soil collected at a depth of eight inches in that boring historically exhibited the highest PCE soil concentration (0.32 micrograms per cubic meter [$\mu g/m^3$]) detected at the Site. Soil gas probes VS-1 and VS-2 were installed at a depth of approximately 3 inches below the base of the PCC slab using hand tools (e.g., slide hammer probe/roto-hammer). Each soil gas probe was leak tested to ensure probe integrity, using helium gas as a tracer with a shroud, and a real-time helium gas monitor. After leak testing, a soil gas sample was collected from each probe at a rate of approximately 200 milliliters per minute, using one-liter Summa canisters. Each soil gas sample was analyzed for HVOCs by EPA method TO-15. PCE was detected in the samples collected from soil gas probes VS-1 (2,500 $\mu g/m^3$) and VS-2 (3,600 $\mu g/m^3$) at concentrations that exceed the SL.[3] No other HVOCs were detected in the soil gas samples. Soil gas data and soil gas SLs are listed in Table 4. The laboratory report and a QA/QC data review are provided in Attachment C.

Tier II Vapor Intrusion Assessment Sampling at Unit B004. The soil gas results from the Tier I assessment indicated that a Tier II assessment would be necessary to further evaluate potential vapor intrusion risks. Apex collected soil gas samples, indoor air samples, and outdoor air samples for the Tier II assessment on November 20, 2013 and December 6, 2013.

Soil gas sampling activities were completed on November 20, 2013 and included installation of soil gas probes VS-3 and VS-4 in unit B004 near probes VS-1 and VS-2 (Figures 2 and 5). The probes were installed approximately 3 inches below the base of the PCC slab and leak tested using the same methods that were used for sampling during the Tier I evaluation. A soil gas sample was collected from each probe at a rate of approximately 200 milliliters per minute using one-liter Summa canisters and each sample was analyzed for HVOCs by EPA method TO-15. PCE was detected in the samples collected from soil gas probes VS-3 (2,400 $\mu g/m^3$) and VS-4 (990 $\mu g/m^3$) at concentrations that exceed the SL. No other HVOCs were detected in the soil gas samples.

Two indoor air samples (AA-2 and AA-3) were collected from within unit B004 on November 20, 2013 concurrent with the soil gas samples. One outdoor (background) air sample (AA-1) was collected from the parking area east and upwind of unit B004 on December 6, 2013. Soil gas and air sampling locations are shown on Figures 2 and 5. The outdoor sample was collected approximately six feet above the ground surface, and away from trees, airflow obstructions, and potential point sources of volatile organic compound emissions, such as exhaust fans and vehicles. The air samples were collected during an 8-hour interval in 6-liter Summa canisters. The air samples were collected when indoor air temperatures were significantly higher than outdoor temperatures. Each air sample was analyzed for

[3] EPA released new toxicity factors for PCE in 2011, following releases of *Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action.* The MTCA Method B CUL for indoor air (unrestricted land use) for PCE, based on the new toxicity factors, is 9.6 $\mu g/m^3$. Using the attenuation factors presented in *Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action*, the corresponding modified soil gas SLs for shallow and deep intervals are 96 and 960 $\mu g/m^3$.

HVOCs by EPA method TO-15. HVOCs were not detected in the air samples. Soil gas and air sampling data, soil gas SLs and air CULs are listed in Table 4. Laboratory reports are provided in Attachment C.

Additional Tier I Vapor Intrusion Assessment Sampling. Eleven additional soil probes (VS-5 through VS-15) were installed at the Site on December 6 and 19, 2013 to evaluate potential vapor intrusion risks at other units resulting from conditions beneath unit B004. Probes VS-5, VS-6, and VS-7 were installed in units B003, B005A, and B006 to a depth of approximately 3 inches below the base of the PCC slab using hand methods. Probes VS-8 through VS-15 were installed, using a Geoprobe®, in the parking areas east and west of unit B004 and in close proximity to nearby retail spaces B001, B002, B005, B006, and B007 to a depth of five feet below the PCC slab (which is below the presumed depth of the building foundation system). The probes were leak tested and samples were collected using the same methods used for the Tier I evaluation sampling. Sampling locations are shown on Figures 2 and 5. The soil gas samples were analyzed for HVOCs by EPA method TO-15. PCE was detected in the sample collected from soil gas probe VS-6 at a concentration below the SL. VS-6 was constructed in unit B005A, which is the vacant space adjacent south of unit B004. Trichloroethene (TCE) was detected in the sample collected from soil gas probe VS-14 at a concentration (10 $\mu g/m^3$) that exceeds the SL. No other HVOCs were detected in the soil gas samples. Soil gas and air sampling data and soil gas SLs are listed in Table 4. The laboratory report is provided in Attachment C.

SUMMARY OF SITE CONDITIONS

The following information is based on groundwater, soil, soil gas, and air sampling data collected between 1997 and 2014.

Groundwater

The depth to groundwater at the Site is approximately 8 to 10 feet, and groundwater flows to the northeast at an average gradient of approximately 0.008 ft/ft. HVOCs have not been not detected at concentrations exceeding CULs in any of the permanent groundwater monitoring wells at the Site. PCE has historically been detected in groundwater samples collected from borings and monitoring wells downgradient of unit B004; however, the concentrations have been below the CUL and have generally decreased over time. Furthermore, PCE was not detected in groundwater samples from any site wells in 2013 or 2014. These data indicate that groundwater conditions at the Site are stable and HVOCs are no longer present in Site groundwater.

Soil

Sampling data indicate that soil beneath a limited portion of unit B004 was historically impacted with PCE at concentrations exceeding the CUL. No PCE degradation products (e.g., TCE, cis-1,2-DCE, and vinyl chloride) were detected in soil samples. PCE was detected in soil samples collected from only two borings, HB-1 and HB-3, in 1997. These borings were advanced within unit B004 in close proximity to the former location of the dry cleaning equipment, and samples were collected from these borings at a depth of approximately eight inches below the floor.

PCE was not detected in the soil samples collected from borings HB-3, HB-4, and HB-5, which were located within unit B004 near the former dry cleaning equipment. PCE was also not detected in the soil samples collected at depths ranging from one to ten feet from borings Core-1, Core-2, Core-3, B-2, B-3, and HB-6, or the borings for monitoring wells MW-2 and MW-3, which are all located downgradient of the former dry cleaning machine. These data indicate that the historical areal extent of PCE in soil that exceeded the CUL was limited to the subsurface near borings HB-1 and HB-3. It is likely that PCE concentrations in soil have attenuated since 1997; therefore, the areal extent of PCE that exceeds the CUL has likely decreased since the most recent soil samples were collected in 2002.

Tier I and Tier II Vapor Intrusion Assessment

HVOCs were not detected at concentrations exceeding the respective SLs in any of the soil gas samples collected at the Site in October and December 2013, with the exception of PCE in the samples collected from borings VS-1 through VS-4, and TCE in sample the sample collected from boring VS-14. Probes VS-1 through VS-4 were advanced inside unit B004 in close proximity to the former location of the dry cleaning equipment. The apparent source of PCE in soil gas is residual PCE in soil, as PCE was not detected in the groundwater samples collected at the Site in July 2013 and March 2014. PCE was not detected in the indoor air samples (AA-2 and AA-3) collected concurrent with soil gas samples VS-3 and VS-4; therefore, PCE concentrations in soil gas do not appear to pose an unacceptable vapor intrusion risk. TCE was not detected in the soil, groundwater, and soil gas samples collected near the former dry cleaning equipment, or at any other locations at the Site, with the exception of the soil gas sample collected from upgradient boring VS-14.

PROPOSED ACTIVITIES TO OBTAIN AN NFA OPINION

The following additional work is planned to further define the nature and extent of hazardous substance impacts at the Site. The scope of work was developed based on our understanding of MTCA requirements and the Opinion Letter issued by the Ecology on September 18, 2013. We anticipate that these activities will meet the MTCA requirements for site characterization and, pending the results, be sufficient to obtain a NFA opinion from Ecology. The planned scope of work includes investigation activities that will be performed following Apex SOPs. These SOPs are referenced below and included in Attachment B.

Groundwater

Groundwater monitoring well data collected between 1997 and 2014 indicate that HVOCs are no longer present in groundwater; therefore, no additional work is proposed to characterize groundwater conditions.

Implementation of Institutional Controls

Ecology files suggest that the property owner (Regency) proposed institutional controls for soil at the Classic Cleaners (beneath unit B004) in the form of a restrictive covenant as early as 2004. The draft restrictive covenant was reviewed and revised by Ecology, and returned to Regency. Unfortunately, the VCP enrollment was terminated by Ecology later in 2004 before the final restrictive covenant could be filed. Recent sampling data indicates that Site conditions are stable, but PCE concentrations in soil beneath unit B004 likely remain above the corresponding CUL. Removal of residual impacted soil from beneath unit B004 would not be practicable. The Tier II vapor intrusion assessment indicates that HVOCs in the subsurface do not pose an unacceptable vapor intrusion risk. Assuming that data collected during proposed characterization activities is consistent with previously collected data, institutional controls, in the form of a restrictive covenant, will be implemented as a remedial measure for residual PCE in soil.

HVOC-impacted soil at the Site currently meets exclusion criteria number 2 for MTCA Terrestrial Ecological Evaluations (TEE). Specifically, the soil contamination is covered with buildings, paved roads, pavement, or other physical barriers that will prevent plants or wildlife from being exposed; therefore, the Site is exempt from the MTCA requirements to complete a site-specific TEE. The restrictive covenant will specify that: (1) the soil contamination will remain covered such that the exemption from a TEE is maintained in the future; and (2) if future development calls for the removal of covering materials (i.e., buildings, pavement, etc.) or soil disturbance then PCE-impacted soil exceeding the CUL will be properly managed and disposed in accordance with applicable regulatory requirements.

Supplemental Tier II Vapor Intrusion Evaluation

Data collected during the Tier I and Tier II vapor intrusion evaluation indicate that HVOCs in the subsurface do not pose an unacceptable vapor intrusion risk. In accordance with the Ecology VI guidance, a limited amount of

additional characterization is necessary to refine the understanding of potential vapor intrusion exposure pathways at the Site and to confirm the results of the previous vapor intrusion assessment. The supplemental Tier II evaluation will include: (1) preparation of a Conceptual Site Model (CSM) for the building; (2) additional air and soil gas sampling; and (3) screening of the air and soil gas data to confirm that PCE concentrations in soil gas do not pose an unacceptable vapor intrusion risk and mitigation measures will not be necessary to ensure protection of workers. The tasks for completion of the supplemental Tier II vapor intrusion evaluation are described below.

- Preparation of a Conceptual Site Model. The CSM will provide a summary of potential indoor vapor exposure scenarios based on the sources of contamination, the transport media, and likely intrusion routes. The CSM will include: (1) a plan view drawing of unit B004 and adjacent retail units, showing their spatial relationship to the HVOC source and how air moves within the building; (2) a cross-sectional view of the building depicting the building foundation, approximate depth of the source, and depth to the shallowest groundwater; and (3) a narrative section describing the drawings and explaining any critical assumptions made in depicting site conditions.

- Air and Soil Gas Sampling at Unit B004. Tier II sampling indicate that the PCE concentrations in soil gas do not pose a vapor intrusion risk at unit B004. However, soil gas and indoor air concentrations can be affected by a number of factors, including atmospheric pressure, HVAC system operations, soil moisture, etc. Samples for the Tier II evaluation were collected on November 20, 2013 and December 6, 2013 when indoor air temperatures were significantly higher than outdoor temperatures. Additional soil gas and ambient air sampling will be completed to evaluate vapor intrusion risk for unit B004 when indoor air temperatures are lower than outdoor temperatures. Two soil gas samples will be collected from two soil gas probes (one sample per probe) that will be installed in space B004. One probe will be installed in close proximity to the sanitary sewer line, if practicable. The second probe will be installed near historical boring VS-2, which exhibited the highest concentrations of PCE. The planned sample locations are shown on Figure 2. The soil gas probes will be installed approximately three inches below the base of the PCC slab using hand methods. Soil gas samples will be collected using 1-liter Summa canisters. Concurrent with soil gas sampling, two indoor air samples will be collected from space B004 and one outdoor air sample will be collected upwind of and close to unit B004. The outdoor sample will be collected at least five feet above the ground surface, and away from trees, airflow obstructions, and potential point sources of volatile organic compound emissions, such as exhaust fans and vehicles. The indoor air samples will be collected during an 8-hour interval in a 6-liter Summa canister. Each air sample will be analyzed for the HVOCs of concern (PCE, TCE, cis-DCE, and vinyl chloride) by EPA Method TO-15.

- Soil Gas Sampling at Unit B005A. Soil gas sampling completed at unit B005A on December 6, 2013 indicated that PCE concentrations in soil gas do not pose a vapor intrusion risk at unit B005A. However, the PCE concentration in the soil gas sample collected from unit B005A was 8.4 $\mu g/m^3$, which is only slightly below the SL of 9.6 $\mu g/m^3$. To confirm the absence of an unacceptable vapor intrusion risk at unit B0005A, an additional soil gas sample will be collected from unit B005A when indoor air temperatures are lower than outdoor temperatures. The sample will be collected from a probe installed in close proximity to the north wall of the facility, which adjoins unit B004. The soil gas probe will be installed approximately three inches below the base of the PCC slab using hand methods. Soil gas samples will be collected using 1-liter Summa canisters. Each air sample will be analyzed for the HVOCs of concern (PCE, TCE, cis-DCE, and vinyl chloride) by EPA method TO-15.

- Data Screening. Ambient air and soil gas sampling data will be evaluated using the Tier II decision matrices presented in the Ecology VI Guidance, Appendix E.

  Based on the decision matrices, there are three potential outcomes for unit B004:

  1) If PCE is not detected in indoor air samples at concentrations above the MTCA CUL, then additional sampling or mitigation will not be necessary;

2) If PCE is detected in indoor air samples at concentrations less than 10 times the MTCA CUL, then additional sampling may be required to complete the Tier II evaluation (if HVOC concentrations in multiple follow-up air samples exceed SLs, then mitigation would likely be necessary); or

3) If PCE is detected in indoor air samples collected from Dominos Pizza and/or space B005A at concentrations 10 times the CUL or greater, then mitigation may be necessary for that space.

Based on the decision matrices, there two potential outcomes for unit B005A:

1) If PCE is not detected in soil gas at a concentration at or above the SL, then PCE concentrations in soil gas do not pose a vapor intrusion risk at unit B005A and no additional sampling is necessary; or

2) If PCE is detected in soil gas at a concentration above the SL, additional Tier II evaluation steps are necessary (e.g., further soil gas sampling or indoor air sampling).

Site Investigation Report and NFA Request

Following the activities outlined above, a site investigation report will be submitted to Ecology. The report will document the investigation activities and include the following:

- An updated Site map showing historical sampling locations, floor drains, and sewer lines, as well as the locations of historical and new soil gas and air samples collected for the Tier II vapor intrusion evaluation at unit B004 and the Tier I vapor intrusion evaluation at unit B005A;
- A laboratory data quality review and laboratory analytical reports for the new soil gas and air samples;
- Updated analytical data tables (analytical data will be uploaded to the Ecology Electronic Information Management System [EIM]);
- A Tier II vapor intrusion evaluation for unit B004 and a Tier I vapor intrusion evaluation for unit B005A;
- Updated figures that delineate the approximate extents of hazardous substances in soil, groundwater, and soil gas that exceed CULs and SLs;
- A careful evaluation of the current and future risks to human health and the environment; and
- Assuming that the conditions are appropriate, this report would include a request for an NFA opinion.

SCHEDULE

Apex would like to review the project progress report and confirm that the planned additional actions and contingent outcomes will be sufficient to obtain an NFA opinion for the Site with Ecology during the upcoming meeting, which is scheduled for June 20, 2014. The schedule for submittal of a draft restrictive covenant will be discussed with Ecology at the meeting. Soil gas and air sampling for the Tier I/II vapor intrusion evaluation will be completed between July 1 and September 30, 2014.

Please contact me at your earliest convenience to schedule a meeting.

Sincerely,

Mark Havighorst, P.E.
Associate Engineer

ATTACHMENTS

Table 1 – Soil Sampling Analytical Results
Table 2 – Groundwater Elevations
Table 3 – Groundwater Sampling Analytical Results
Table 4 –Vapor Intrusion Evaluation Sampling Analytical Results

Figure 1 – Site Location Map
Figure 2 – Site Layout
Figure 3 – Groundwater Elevations – July 16, 2013
Figure 4 – Groundwater Elevations – March 27, 2013
Figure 5 – Unit B004 Layout

Attachment A – Historical Groundwater Elevation Maps
Attachment B – Apex Standard Operating Procedures
Attachment C – Laboratory Reports and QA/QC Report

REFERENCES

Ecology, 2010. *Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action.* October, 2009.

Table 1 - Soil Sampling Analytical Results
Classic Cleaners
Everett, Washington

Sample Location (Depth)	Sample Date	HVOC concentrations (mg/kg)					
		PCE	TCE	cis-1,2-DCE	Vinyl Chloride	Chloroform	1,1,1 -TCA
	MTCA CUL (mg/kg)	0.05[a]	0.03[a]	160[b]	240[b]	800[b]	2[a]
HB-1 (8")	6/9/1997	0.32	<0.05	<0.05	<0.05	<0.05	<0.05
HB-2 (8")	6/9/1997	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HB-3 (8")	6/9/1997	0.13	<0.05	<0.05	<0.05	<0.05	<0.05
HB-3 (3')	6/9/1997	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B-1 (5')	6/9/1997	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B-1 (7.5')	6/9/1997	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B-1 (10')	6/9/1997	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B-2 (5')	6/9/1997	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B-2 (7.5')	6/9/1997	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B-2 (10')	6/9/1997	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B-3 (5')	6/9/1997	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B-3 (7.5')	6/9/1997	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B-3 (10')	6/9/1997	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MW-1 (10')	7/30/1997	ND*	ND*	ND*	ND*	ND*	ND*
MW-2 (10')	7/30/1997	ND*	ND*	ND*	ND*	ND*	ND*
MW-3 (10')	7/30/1997	ND*	ND*	ND*	ND*	ND*	ND*
Core 1 (1')	5/6/1999	<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.0094
Core 2 (1')	5/6/1999	<0.0092	<0.0092	<0.0092	<0.0092	<0.0092	<0.0092
Core 3 (1')	5/6/1999	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
MW-4/S-3 (12.5')	5/7/1999	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
HB-4 (1')	12/10/2002	0.0013	<1.28	<1.28	<1.28	<1.28	<1.28
HB-5 (1')	12/10/2002	0.00919	<1.12	<1.12	<1.12	<1.12	<1.12
HB-6 (3')	12/10/2002	0.00514	<1.21	<1.21	<1.21	<1.21	<1.21

Notes:

1. HVOC = Halogenated volatile organic compound.
2. PCE = Tetrachloroethene.
3. TCE = Trichloroethene.
4. DCE = Dichloroethene.
5. TCA = Trichloroethane.
6. MTCA CUL = Model Toxics Control Act Cleanup Level.
7. mg/kg = milligram per kilogram.
8. a = MTCA Method A Unrestricted Land Use Table Value.
9. b = MTCA Method B Non-Carcinogen CUL Standard Formula Value (Unrestricted Land Use).
10. ND* = Not detected at a concentration above the method detection limit, which is not available for this report.
11. < = Not detected at a concentration above the method reporting limit or practical quantitation limit.
12. Bold = analyte was detected at a concentration above the method detection limit.
13. Shaded = concentration exceeds the CUL.

Table 2 - Groundwater Elevations
Classic Cleaners
Everett, Washington

Well ID	Date	Reference Elevation (feet)[1]	Depth To Groundwater (feet)	Groundwater Elevation (feet)
MW-1	7/31/1997	505.14	7.91	497.23
	2/11/1998	505.14	7.91	497.23
	11/9/1998	505.14	8.73	496.41
	5/6/1999	505.14	7.8	497.34
	5/7/1999	505.14	7.87	497.27
	8/11/1999	505.14	8.25	496.89
	12/29/1999	505.14	7.94	497.2
	3/30/2000	505.14	7.92	497.22
	8/2/2000	505.14	8.59	496.55
	7/16/2013	505.14	8.21	496.93
	3/27/2014	505.14	7.62	497.52
MW-2	7/31/1997	505.93	8.81	497.12
	2/11/1998	505.93	8.98	496.95
	11/9/1998	505.93	10.05	495.88
	5/6/1999	505.93	8.94	496.99
	5/7/1999	505.93	9.04	496.89
	8/11/1999	505.93	9.62	496.31
	12/29/1999	505.93	9.31	496.62
	3/30/2000	505.93	9.11	496.82
	8/2/2000	505.93	10.23	495.7
	7/16/2013	505.93	9.7	496.23
	3/27/2014	505.93	8.79	497.14
MW-3	7/31/1997	505.9	8.99	496.91
	2/11/1998	505.9	9.07	496.83
	11/9/1998	505.9	10.14	495.76
	5/6/1999	505.9	9.06	496.84
	5/7/1999	505.9	9.1	496.8
	8/11/1999	505.9	9.65	496.25
	12/28/1999	505.9	9.23	496.67
	3/30/2000	505.9	9.18	496.72
	8/2/2000	505.9	10.27	495.63
	7/16/2013	505.9	9.77	496.13
	3/27/2014	505.9	8.9	496.63
MW-4	5/6/1999	505.65	8.93	496.72
	8/11/1999	505.65	9.93	495.72
	12/28/1999	505.65	9.6	496.05
	3/30/2000	505.65	9.43	496.22
	8/2/2000	505.65	10.52	495.13
	7/16/2013	505.65	10.07	495.58
	3/27/2014	505.65	9.27	496.38

Notes:

1. Reference elevation (i.e., top of casing) relative to City of Everett Datum, survey conducted in July 1997 by Hallin & Associates.

Table 3 - Groundwater Sampling Analytical Results
Classic Cleaners
Everett, Washington

Sample Location	Sample Date	HVOC concentration (ug/L)					
		PCE	TCE	cis-1,2-DCE	Vinyl Chloride	Chloroform	1,1,1-TCA
	MTCA CUL (ug/L)	5[a]	5[a]	16[b]	0.2[a]	80[b]	200[a]
	SL for Vapor Intrusion (ug/L)	*9.6*	*0.42*	*160*	*0.35*	*1.2*	*11,000*
B-2-W	6/6/1997	*1.3*	<0.5	<0.5	<0.5	*5.3*	<0.5
B-3-W	6/6/1997	*3.6*	<0.5	<0.5	<0.5	*16*	<0.5
MW-1	7/31/1997	<0.5	<0.5	<0.5	<0.5	0.9	<0.5
	2/11/1998	<10	<10	<10	<10	<10	<10
	11/9/1998	<2	<2	<2	<2	<2	<2
	5/6/1999	<0.4	<0.4	<0.4	<0.2	<0.4	<0.4
	8/11/1999	<0.4	<0.4	<0.4	<0.2	<0.4	<0.4
	12/28/1999	<0.4	<0.4	<0.4	<0.2	<0.4	<0.4
	3/30/2000	<0.4	<0.4	<0.4	<0.2	<0.4	<0.4
	8/2/2000	<0.4	<0.4	<0.4	<0.2	<0.4	<0.4
	7/16/2013	<1	<1	<1	<1	<1	<1
	3/27/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-2	7/31/1997	*3.8*	<0.5	<0.5	<0.5	*15*	<0.5
	2/11/1998	<2	<2	<2	<2	<2	<2
	11/9/1998	*3*	<0.4	<0.4	<0.2	*3*	8
	5/6/1999	*1.1*	<0.4	<0.4	<0.2	<0.4	<0.4
	8/11/1999	*1.2*	<0.4	<0.4	<0.2	0.37	<0.4
	12/28/1999	1	<0.4	<0.4	<0.2	0.71	<0.4
	3/30/2000	0.62	<0.4	<0.4	<0.2	<0.4	<0.4
	8/2/2000	0.82	<0.4	<0.4	<0.2	<0.4	<0.4
	7/16/2013	<1	<1	<1	<1	<1	<1
	7/16/2013 DUP	<1	<1	<1	<1	<1	<1
	3/27/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-3	7/31/1997	*3.9*	<0.5	<0.5	<0.5	*15*	<0.5
	2/11/1998	<2	<2	<2	<2	*5.2*	<2
	11/9/1998	*3*	<0.4	<0.4	<0.2	*8*	<0.4
	5/6/1999	*1.3*	<0.4	<0.4	<0.2	0.51	<0.4
	8/11/1999	*1.4*	<0.4	<0.4	<0.2	0.64	3
	12/28/1999	*1.4*	<0.4	<0.4	<0.2	<0.4	<0.4
	3/30/2000	*1.2*	<0.4	<0.4	<0.2	<0.4	<0.4
	8/2/2000	*1.2*	<0.4	<0.4	<0.2	<0.4	<0.4
	7/16/2013	<1	<1	<1	<1	<1	<1
	3/27/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-4	5/6/1999	0.41	<0.4	<0.4	<0.2	*2.1*	<0.5
	8/11/1999	0.16	<0.4	<0.4	<0.2	0.99	<0.4
	12/28/1999	0.11	<0.4	<0.4	<0.2	0.46	<0.4
	3/30/2000	<0.4	<0.4	<0.4	<0.2	<0.4	<0.4
	8/2/2000	<0.4	<0.4	<0.4	<0.2	0.4	<0.4
	7/16/2013	<1	<1	<1	<1	<1	<1
	3/27/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
HB-4 GW	12/10/2002	9.36	<1	<1	<0.4	*3.08*	<1
HB-5 GW	12/10/2002	4.92	<1	<1	<0.4	<1	<1

Notes:

1. HVOC = Halogenated volatile organic compound.
2. PCE = Tetrachloroethene.
3. TCE = Trichloroethene.
4. DCE = Dichloroethene.
5. TCA = Trichloroethane.
6. MTCA CUL = Model Toxics Control Act Cleanup Level.
7. Soil Gas Screening Level (SL) for vapor intrusion included in Table B-1 of Ecology's *Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action.*
8. ug/L = microgram per liter.
9. a = MTCA Method A Table Value.
10. b = MTCA Method B Non-Carcinogen CUL Standard Formula Value (Unrestricted Land Use).
11. < = Not detected at a concentration above the method reporting limit or practical quantitation limit.
12. Bold = analyte was detected at a concentration above the method detection limit.
13. Shaded concentration exceeds the CUL.
14. Italicized concentration exceeds the SL.
15. DUP = Duplicate sample.

Table 4 - Vapor Intrusion Evaluation Sampling Analytical Results
Classic Cleaners
Everett, Washington

Sample Location (Depth)	Sample Date	HVOC concentrations (ug/m^3)			
		PCE	TCE	cis-1,2-DCE	Vinyl Chloride
	Soil Gas SL (ug/m^3)	96	3.7	160	460
VS-1 (3")	10/4/2013	2500	<1.3	<6.5	<4.2
VS-2 (3")	10/4/2013	3600	<2.7	<9.9	<6.4
VS-3 (3")	11/20/2013	2400	<5.2	<3.8	<2.4
VS-4 (3")	11/20/2013	990	<5.1	<3.8	<2.4
VS-5 (3")	12/6/2013	<8.1	<6.4	<4.7	<3.0
VS-6 (3")	12/6/2013	8.4	<5.7	<4.2	<2.7
VS-7 (3")	12/6/2013	<7.1	<5.6	<4.1	<2.7
VS-8 (5')	12/19/2013	<8.3	<6.6	<4.9	<3.1
VS-9 (5')	12/19/2013	<7.1	<5.6	<4.1	<2.7
VS-10 (5')	12/19/2013	<7.0	<5.6	<4.1	<2.6
VS-11 (5')	12/19/2013	<6.8	<5.4	<4.0	<2.6
VS-12 (5')	12/19/2013	<7.1	<5.6	<4.1	<2.7
VS-13 (5')	12/19/2013	<6.8	<5.4	<4.0	<2.6
VS-14 (5')	12/19/2013	<7.0	10	<4.1	<2.6
VS-15 (5')	12/19/2013	<7.0	<5.5	<4.2	<2.6
	Method B Cleanup Level (ug/m^3)	9.6	0.37	16	46
AA-1 (Backgound)	12/6/2013	<0.21	<0.16	<0.12	<0.039
AA-2 (Indoors)	11/20/2013	<5.6	<4.5	<3.3	<2.1
AA-3 (Indoors)	11/20/2013	<5.6	<4.5	<3.3	<2.1

Notes:

1. HVOC = Halogenated Volatile Organic Compound.
2. PCE = Tetrachloroethene.
3. TCE = Trichloroethene.
4. DCE = Dichloroethene.
5. ug/m^3 = microgram per cubic meter.
6. Soil Gas Screening Level (SL) for vapor intrusion included in Table B-1 of Ecology's *Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action.*
7. MTCA CUL = Model Toxics Control Act Cleanup Level (Unrestricted Land Use).
8. NR = a SL for this compound has not been issued by Ecology.
9. Bold = analyte was detected at a concentration above the method detection limit.
10. Shaded = concentration exceeds the SL.
11. The soil gas SL for PCE presented in the 2010 Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action (VI Guidance) are not valid because they are not based on the most recent toxicity factors, which were issued by EPA in 2011. The SL for soil gas was calculated as 10/100x the MTCA Method B CUL for indoor air (9.6 ug/m^3).

Note: Base map prepared from USGS 7.5-minute quadrangle of Everett, WA, dated 2014 as provided by USGS.gov.

0 2,000 4,000

Approximate Scale in Feet

N

Site Location Map

Cascade Plaza
Everett, Washington

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	11277-199	Figure
May 2014		1

Legend:

- **MW-1** Monitoring Well Location
- **VS-3** Soil Gas Sample Location (2013)
- **AA-2** Indoor Ambient Air Sample Location (2013)
- **AA-1** Outdoor Ambient Air Sample Location (2013)
- **HB-1** Soil Sample Location (2002)
- **Core 1** Soil Sample Location (1999)
- **B-1** Soil Sample Location (1997)
- **B-2** Soil and Groundwater Sample Location (1997)
- Planned Soil Gas Sample Location

NOTES: Base map prepared from 2013 - Google Imagery. Aerial dated July 5, 2012.

B004 = Unit Number

0 50 100

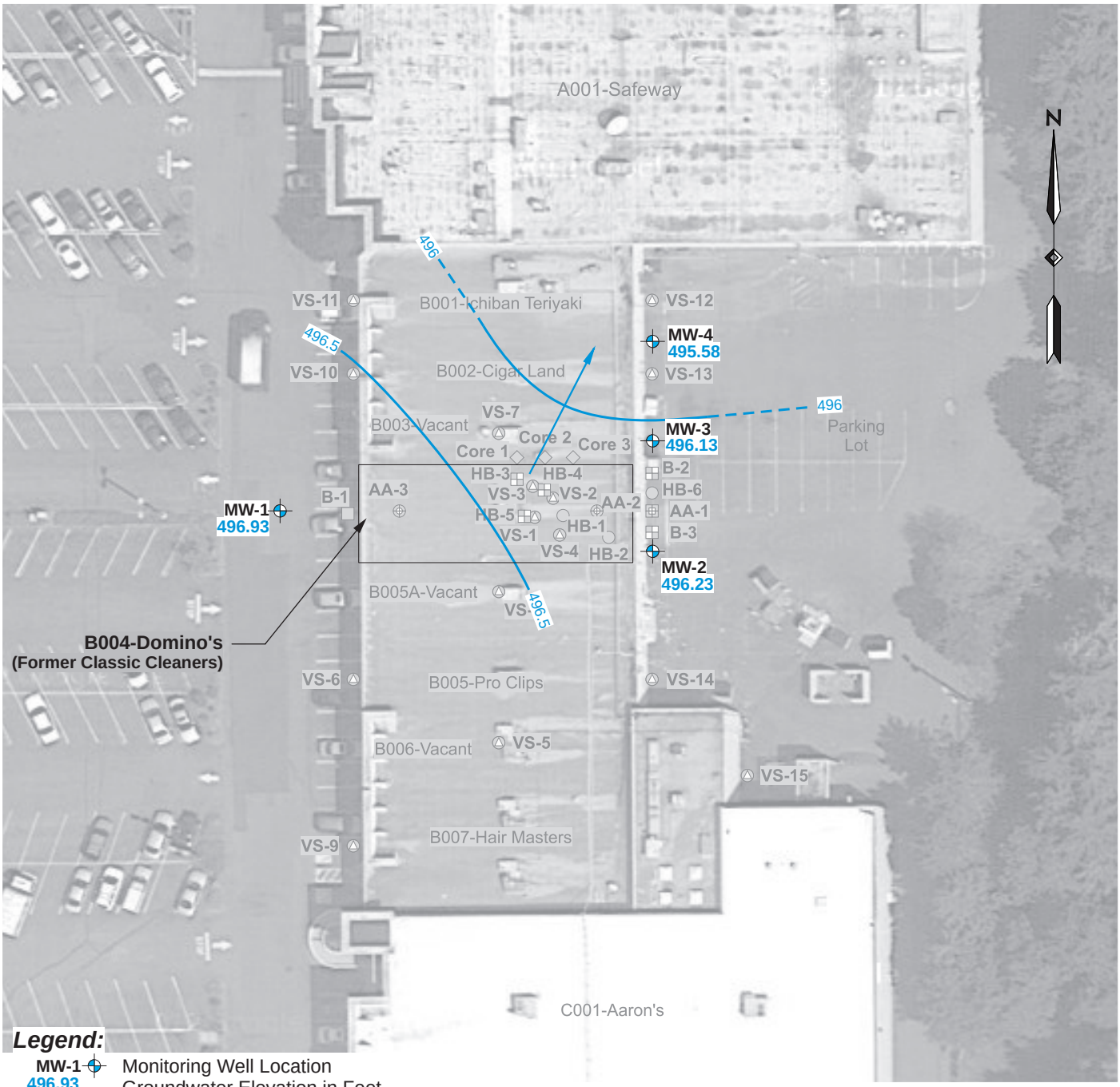
Approximate Scale in Feet

Site Layout

Cascade Plaza
Everett, Washington

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	11277-199	Figure
May 2014		2



Legend:

MW-1 496.93 — Monitoring Well Location, Groundwater Elevation in Feet

496 — Groundwater Elevation Contour in Feet (Dashed Where Inferred)

Apparent Groundwater Flow Direction

VS-3 — Soil Gas Sample Location (2013)

AA-2 — Indoor Ambient Air Sample Location (2013)

AA-1 — Outdoor Ambient Air Sample Location (2013)

HB-1 — Soil Sample Location (2002)

Core 1 — Soil Sample Location (1999)

B-1 — Soil Sample Location (1997)

B-2 — Soil and Groundwater Sample Location (1997)

NOTES: Base map prepared from 2013 - Google Imagery. Aerial dated July 5, 2012.

B004 = Unit Number

0 50 100

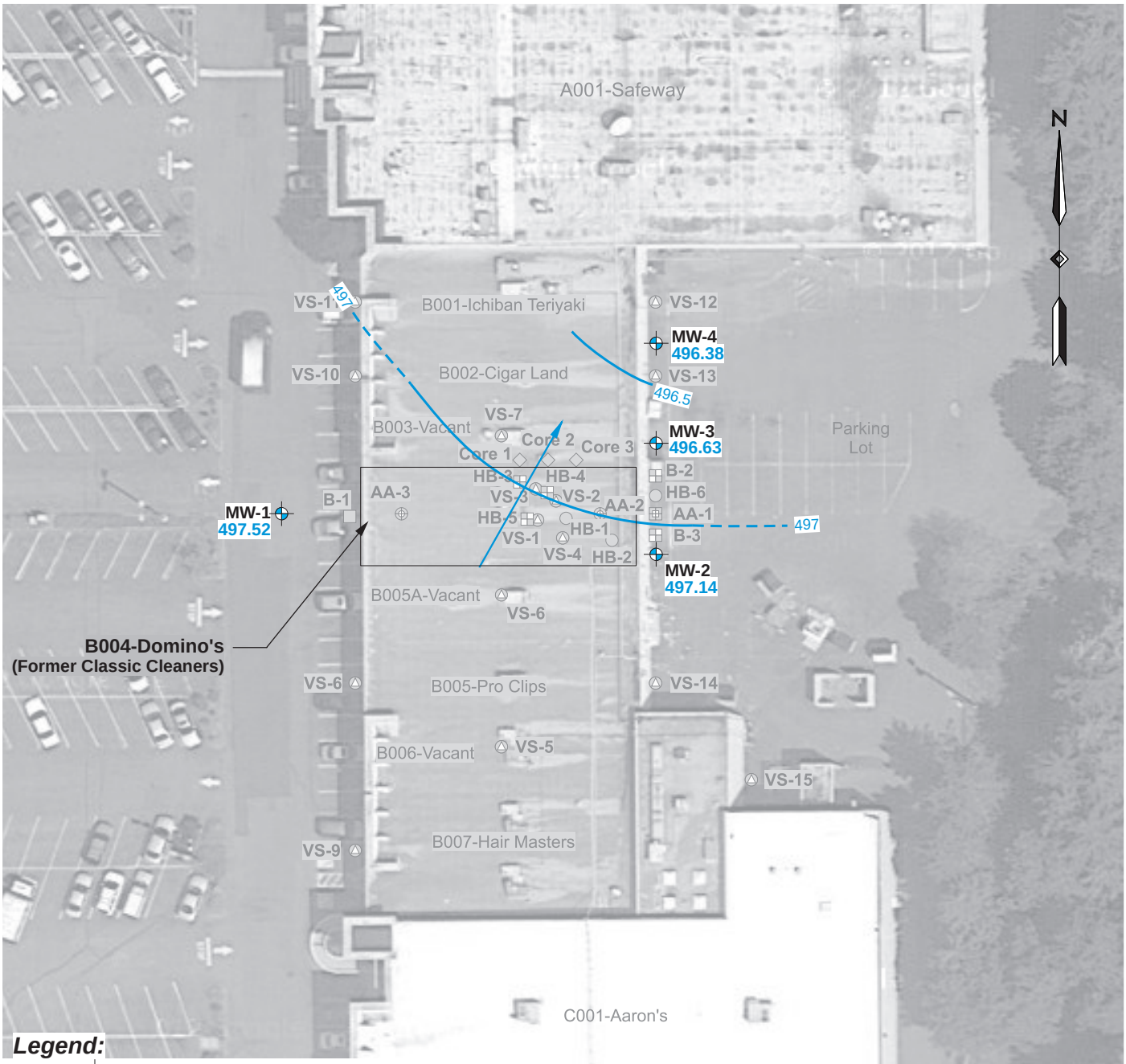
Approximate Scale in Feet

Groundwater Elevations - July 16, 2013

Cascade Plaza
Everett, Washington

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	11277-199	Figure
May 2014		3



Legend:

MW-1 497.52 — Monitoring Well Location, Groundwater Elevation in Feet

497 — Groundwater Elevation Contour in Feet (Dashed Where Inferred)

Apparent Groundwater Flow Direction

VS-3 — Soil Gas Sample Location (2013)

AA-2 — Indoor Ambient Air Sample Location (2013)

AA-1 — Outdoor Ambient Air Sample Location (2013)

HB-1 — Soil Sample Location (2002)

Core 1 — Soil Sample Location (1999)

B-1 — Soil Sample Location (1997)

B-2 — Soil and Groundwater Sample Location (1997)

NOTES: Base map prepared from 2013 - Google Imagery. Aerial dated July 5, 2012.

B004 = Unit Number

0 50 100

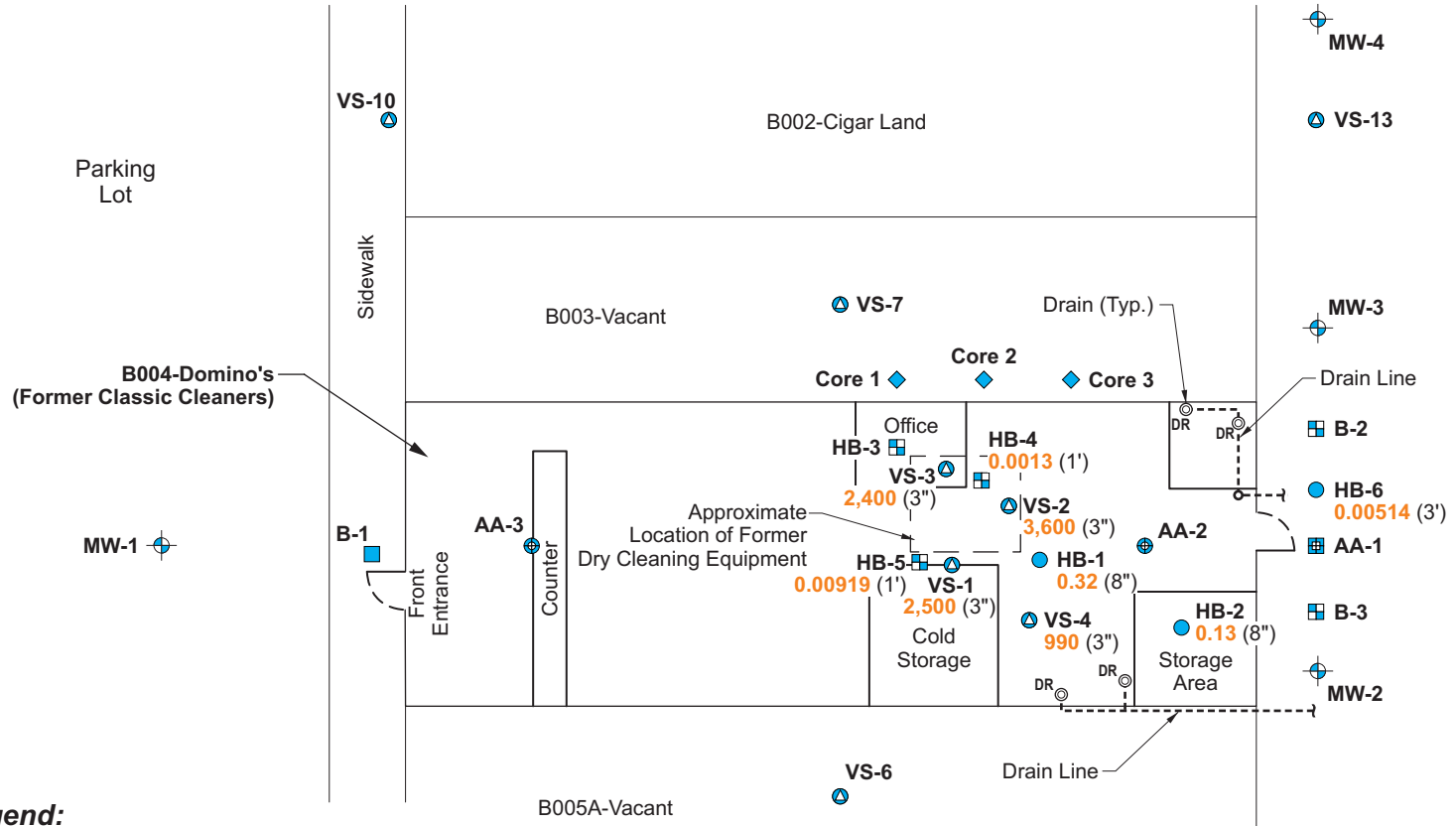
Approximate Scale in Feet

Groundwater Elevations - March 27, 2014

Cascade Plaza
Everett, Washington

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	11277-199	Figure
May 2014		4



Legend:

1.56 (4.5')	Tetrachloroethene Concentration in µg/m^3 and (Sample Depth BGS)
MW-1	Monitoring Well Location
VS-3	Soil Gas Sample Location (2013)
AA-2	Indoor Ambient Air Sample Location (2013)
AA-1	Outdoor Ambient Air Sample Location (2013)
HB-1	Soil Sample Location (2002)
Core 1	Soil Sample Location (1999)
B-1	Soil Sample Location (1997)
B-2	Soil and Groundwater Sample Location (1997)

NOTE: B004 = Unit Number

0 20 40

Approximate Scale in Feet

N

Unit B004 Layout

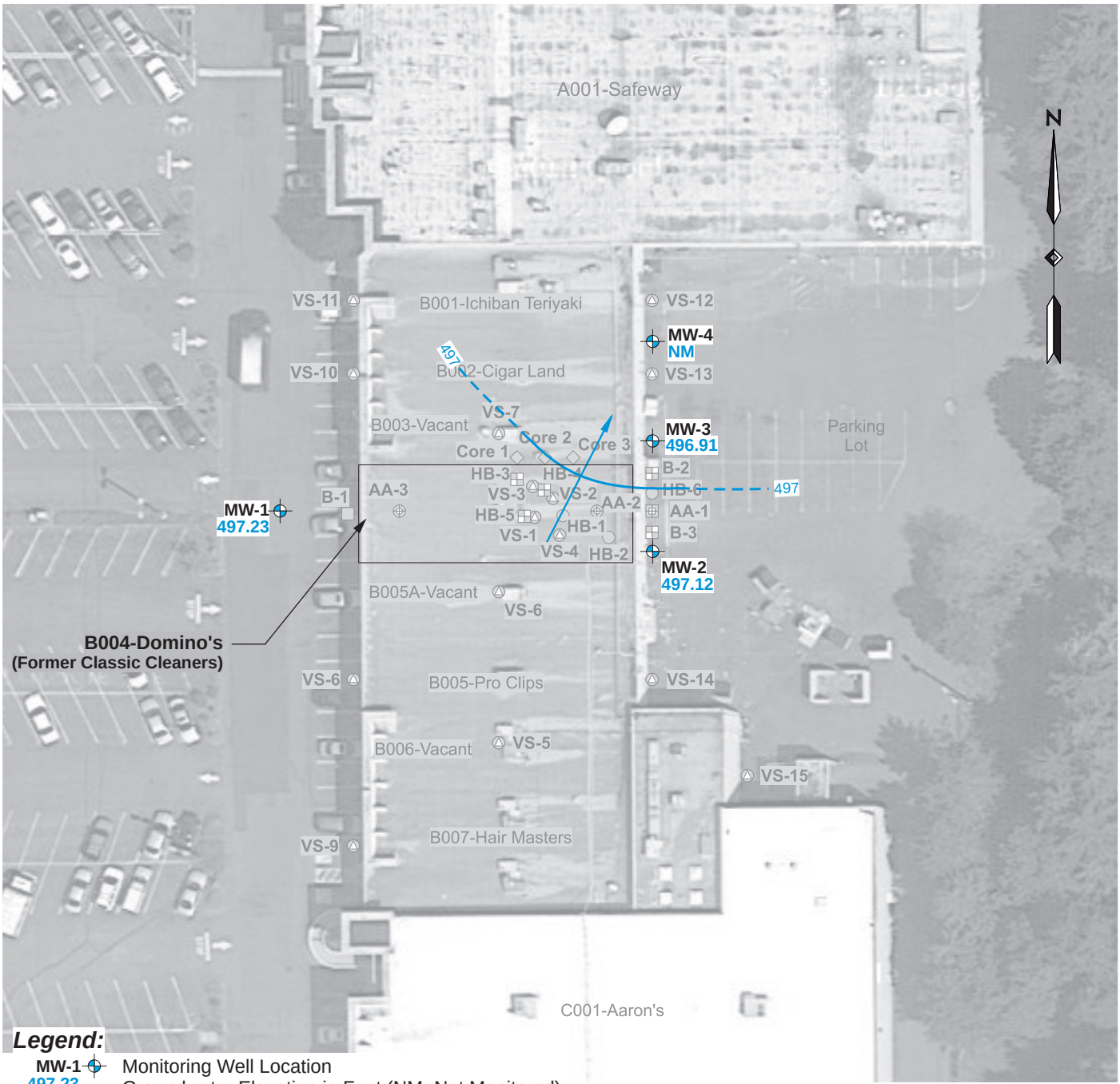
Cascade Plaza
Everett, Washington

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	11277-199	Figure
May 2014		5

Attachment A

Historical Groundwater Elevation Maps



Legend:

MW-1 497.23 — Monitoring Well Location; Groundwater Elevation in Feet (NM=Not Monitored)

497 — Groundwater Elevation Contour in Feet (Dashed Where Inferred)

Apparent Groundwater Flow Direction

VS-3 — Soil Gas Sample Location (2013)

AA-2 — Indoor Ambient Air Sample Location (2013)

AA-1 — Outdoor Ambient Air Sample Location (2013)

HB-1 — Soil Sample Location (2002)

Core 1 — Soil Sample Location (1999)

B-1 — Soil Sample Location (1997)

B-2 — Soil and Groundwater Sample Location (1997)

NOTES: Base map prepared from 2013 - Google Imagery. Aerial dated July 5, 2012.

B004 = Unit Number

0 50 100

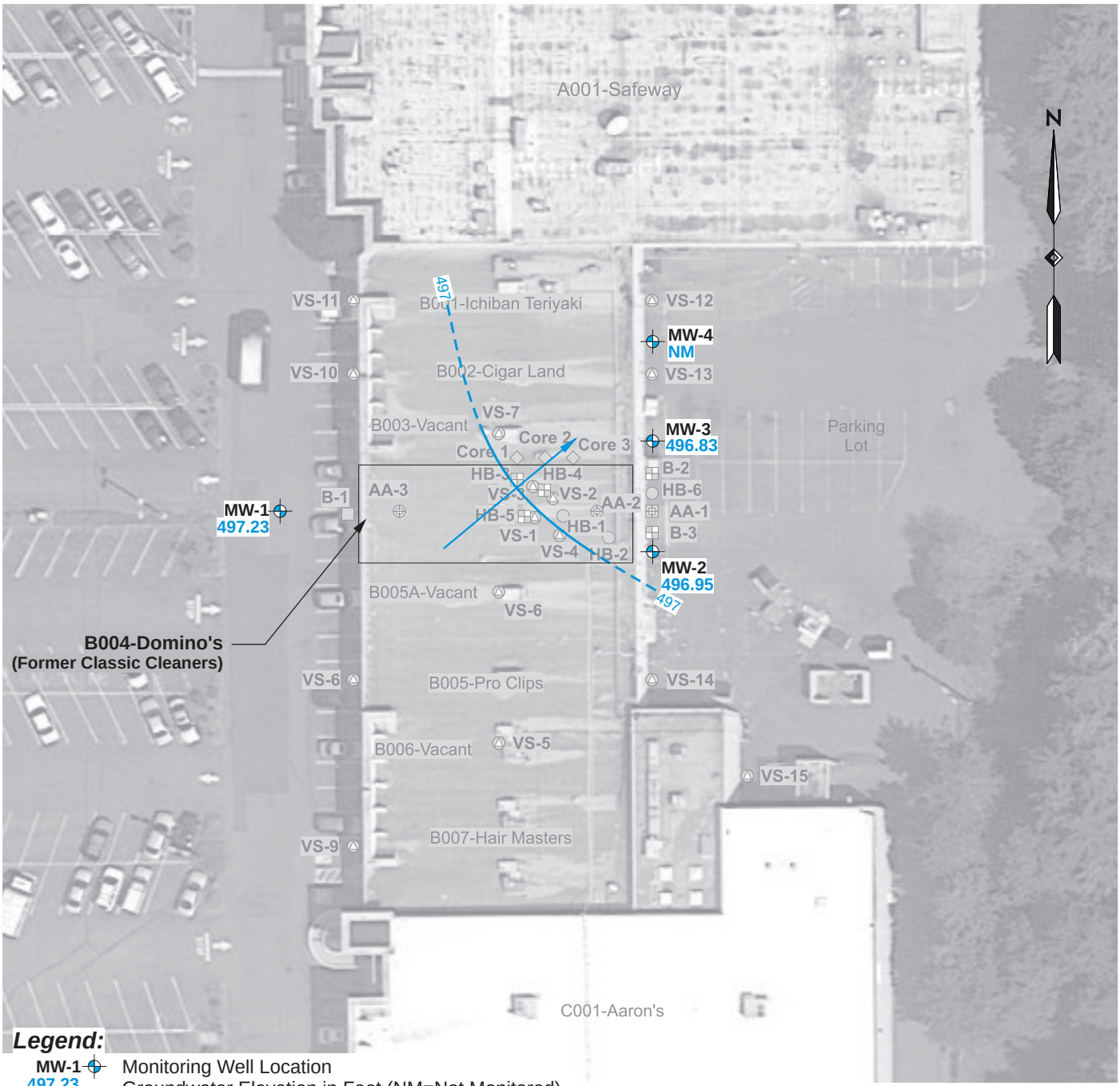
Approximate Scale in Feet

Groundwater Elevations - July 31, 1997

Cascade Plaza
Everett, Washington

APEX
Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	11277-199	Figure
May 2014		A-1



Legend:

MW-1 497.23 — Monitoring Well Location; Groundwater Elevation in Feet (NM=Not Monitored)

497 — Groundwater Elevation Contour in Feet (Dashed Where Inferred)

Apparent Groundwater Flow Direction

VS-3 — Soil Gas Sample Location (2013)

AA-2 — Indoor Ambient Air Sample Location (2013)

AA-1 — Outdoor Ambient Air Sample Location (2013)

HB-1 — Soil Sample Location (2002)

Core 1 — Soil Sample Location (1999)

B-1 — Soil Sample Location (1997)

B-2 — Soil and Groundwater Sample Location (1997)

NOTES: Base map prepared from 2013 - Google Imagery. Aerial dated July 5, 2012.

B004 = Unit Number

0 50 100

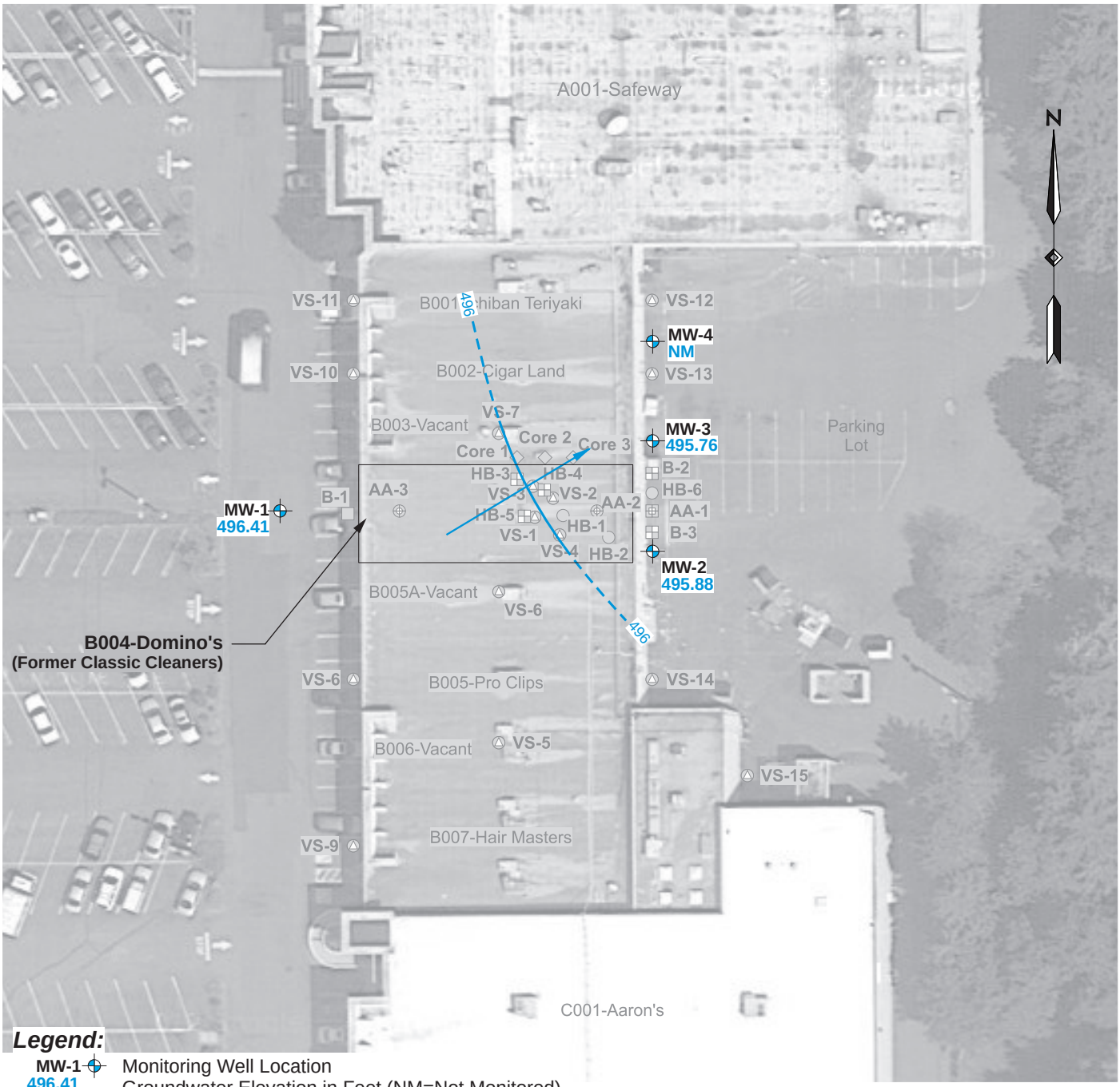
Approximate Scale in Feet

Groundwater Elevations - February 11, 1998

Cascade Plaza
Everett, Washington

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	11277-199	Figure
May 2014		A-2



Legend:

MW-1 496.41 — Monitoring Well Location
Groundwater Elevation in Feet (NM=Not Monitored)

496 — Groundwater Elevation Contour in Feet (Dashed Where Inferred)

Apparent Groundwater Flow Direction

VS-3 — Soil Gas Sample Location (2013)

AA-2 — Indoor Ambient Air Sample Location (2013)

AA-1 — Outdoor Ambient Air Sample Location (2013)

HB-1 — Soil Sample Location (2002)

Core 1 — Soil Sample Location (1999)

B-1 — Soil Sample Location (1997)

B-2 — Soil and Groundwater Sample Location (1997)

NOTES: Base map prepared from 2013 - Google Imagery. Aerial dated July 5, 2012.

B004 = Unit Number

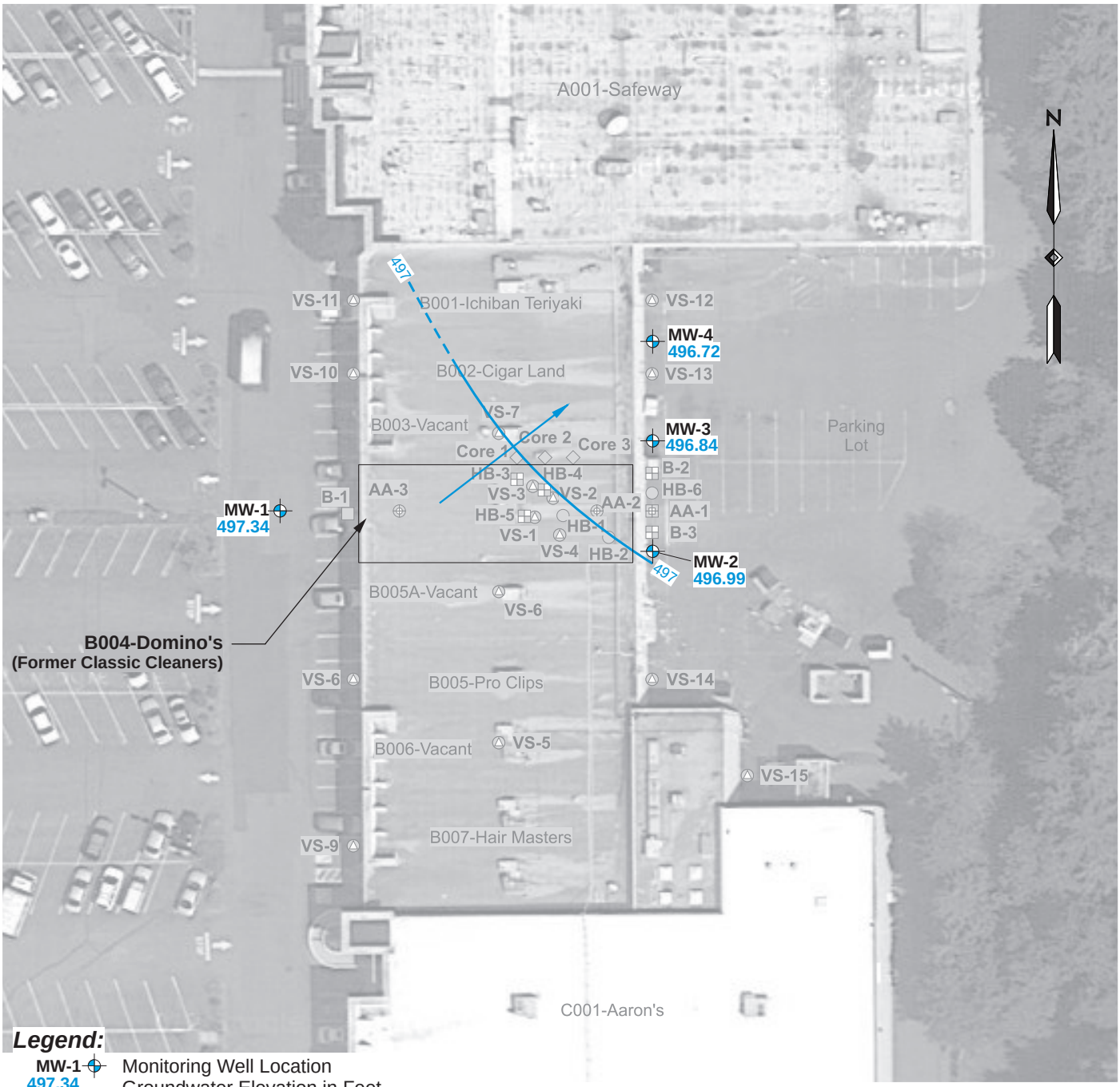
0 50 100

Approximate Scale in Feet

Groundwater Elevations - November 9, 1998

Cascade Plaza
Everett, Washington

Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number	11277-199	Figure A-3
	May 2014		



Legend:

MW-1 497.34 — Monitoring Well Location, Groundwater Elevation in Feet

497 — Groundwater Elevation Contour in Feet (Dashed Where Inferred)

Apparent Groundwater Flow Direction

VS-3 — Soil Gas Sample Location (2013)

AA-2 — Indoor Ambient Air Sample Location (2013)

AA-1 — Outdoor Ambient Air Sample Location (2013)

HB-1 — Soil Sample Location (2002)

Core 1 — Soil Sample Location (1999)

B-1 — Soil Sample Location (1997)

B-2 — Soil and Groundwater Sample Location (1997)

NOTES: Base map prepared from 2013 - Google Imagery. Aerial dated July 5, 2012.

B004 = Unit Number

0 50 100

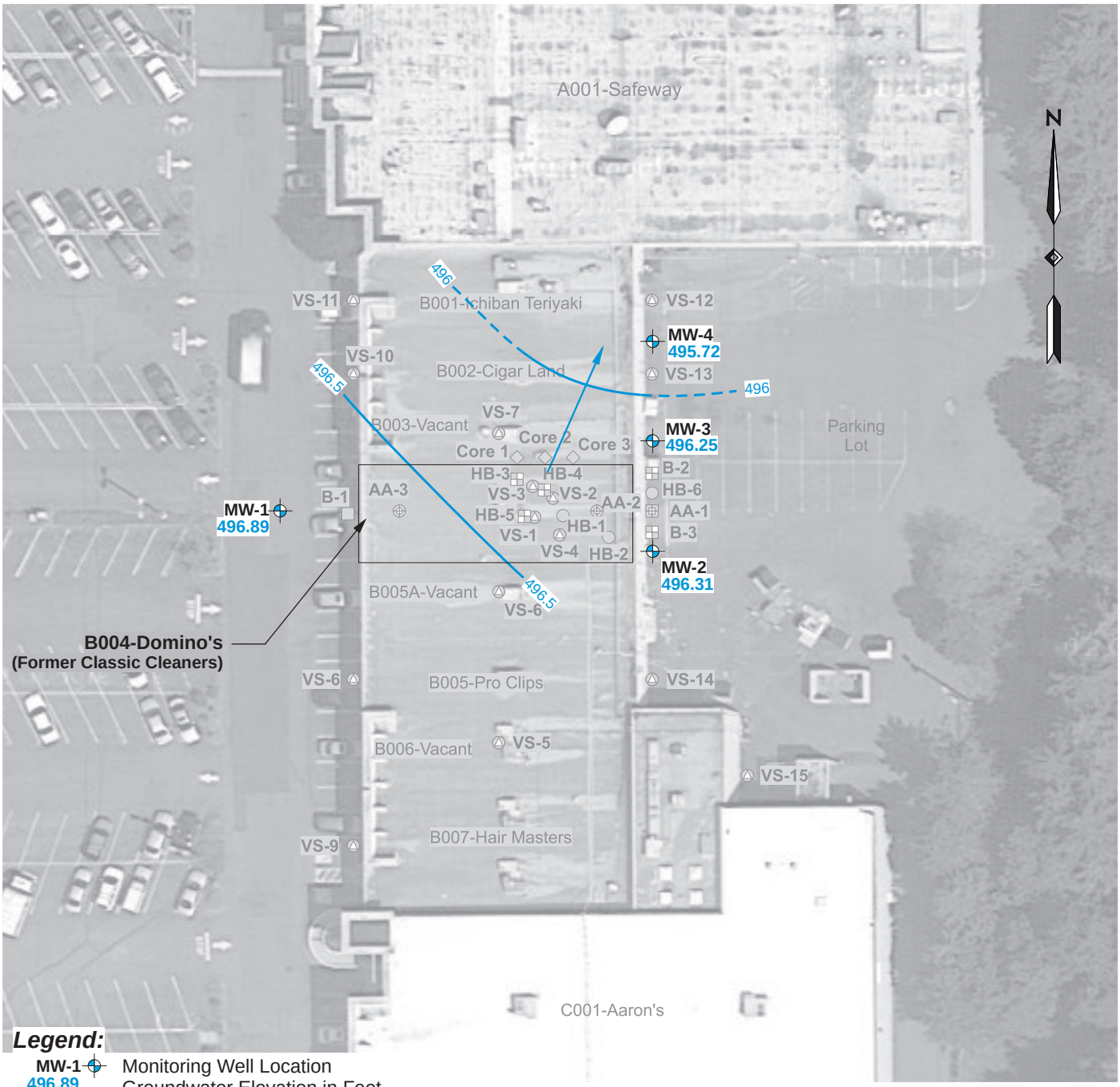
Approximate Scale in Feet

Groundwater Elevations - May 6, 1999

Cascade Plaza
Everett, Washington

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	11277-199	Figure
May 2014		A-4



Legend:

MW-1 496.89 — Monitoring Well Location, Groundwater Elevation in Feet

496 — Groundwater Elevation Contour in Feet (Dashed Where Inferred)

Apparent Groundwater Flow Direction

VS-3 — Soil Gas Sample Location (2013)

AA-2 — Indoor Ambient Air Sample Location (2013)

AA-1 — Outdoor Ambient Air Sample Location (2013)

HB-1 — Soil Sample Location (2002)

Core 1 — Soil Sample Location (1999)

B-1 — Soil Sample Location (1997)

B-2 — Soil and Groundwater Sample Location (1997)

NOTES: Base map prepared from 2013 - Google Imagery. Aerial dated July 5, 2012.

B004 = Unit Number

0 50 100

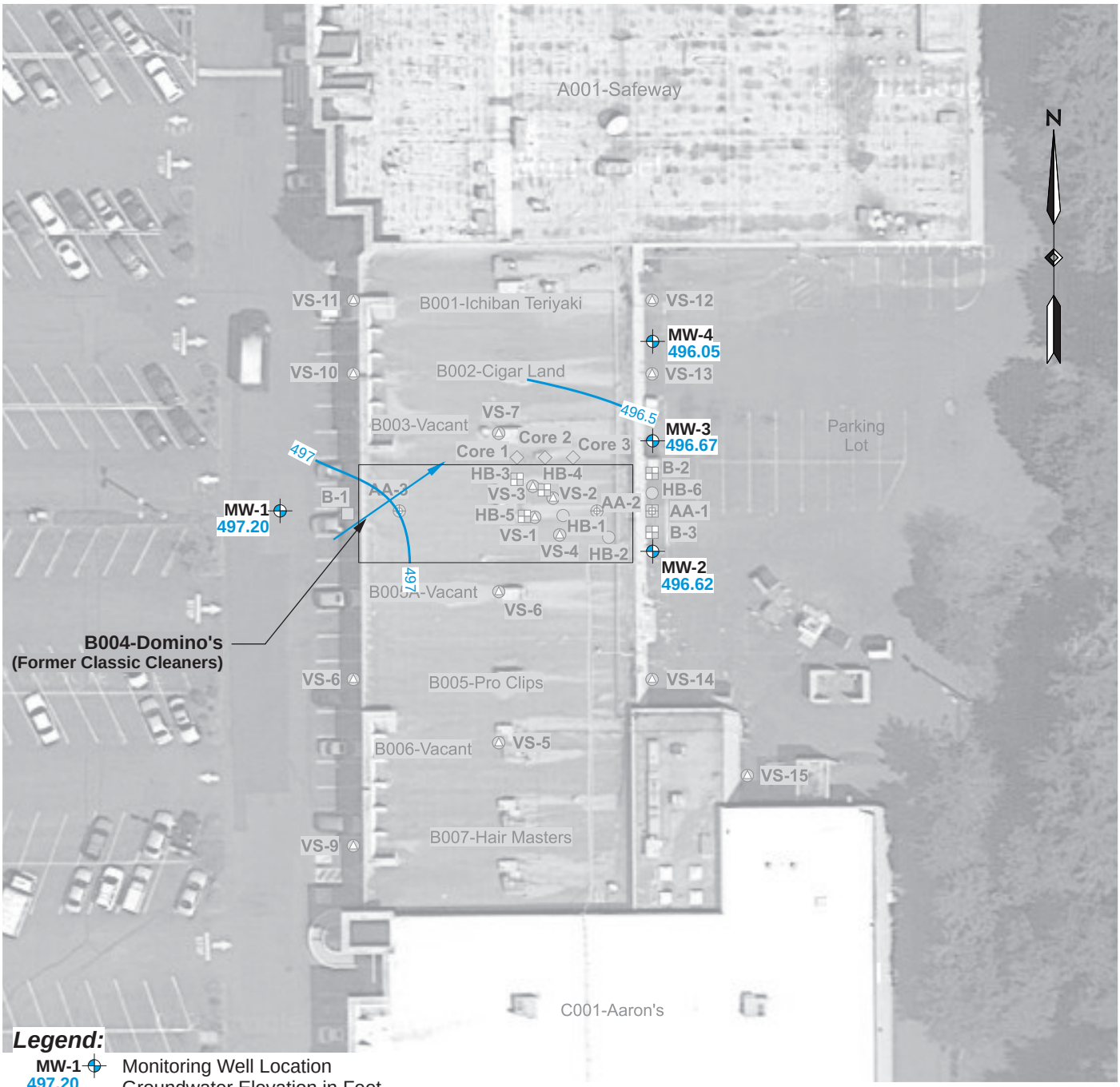
Approximate Scale in Feet

Groundwater Elevations - November 11, 1999

Cascade Plaza
Everett, Washington

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	11277-199	Figure
May 2014		A-5



Legend:

MW-1 / 497.20 — Monitoring Well Location, Groundwater Elevation in Feet

497 — Groundwater Elevation Contour in Feet

Apparent Groundwater Flow Direction

VS-3 — Soil Gas Sample Location (2013)

AA-2 — Indoor Ambient Air Sample Location (2013)

AA-1 — Outdoor Ambient Air Sample Location (2013)

HB-1 — Soil Sample Location (2002)

Core 1 — Soil Sample Location (1999)

B-1 — Soil Sample Location (1997)

B-2 — Soil and Groundwater Sample Location (1997)

NOTES: Base map prepared from 2013 - Google Imagery. Aerial dated July 5, 2012.

B004 = Unit Number

0 50 100

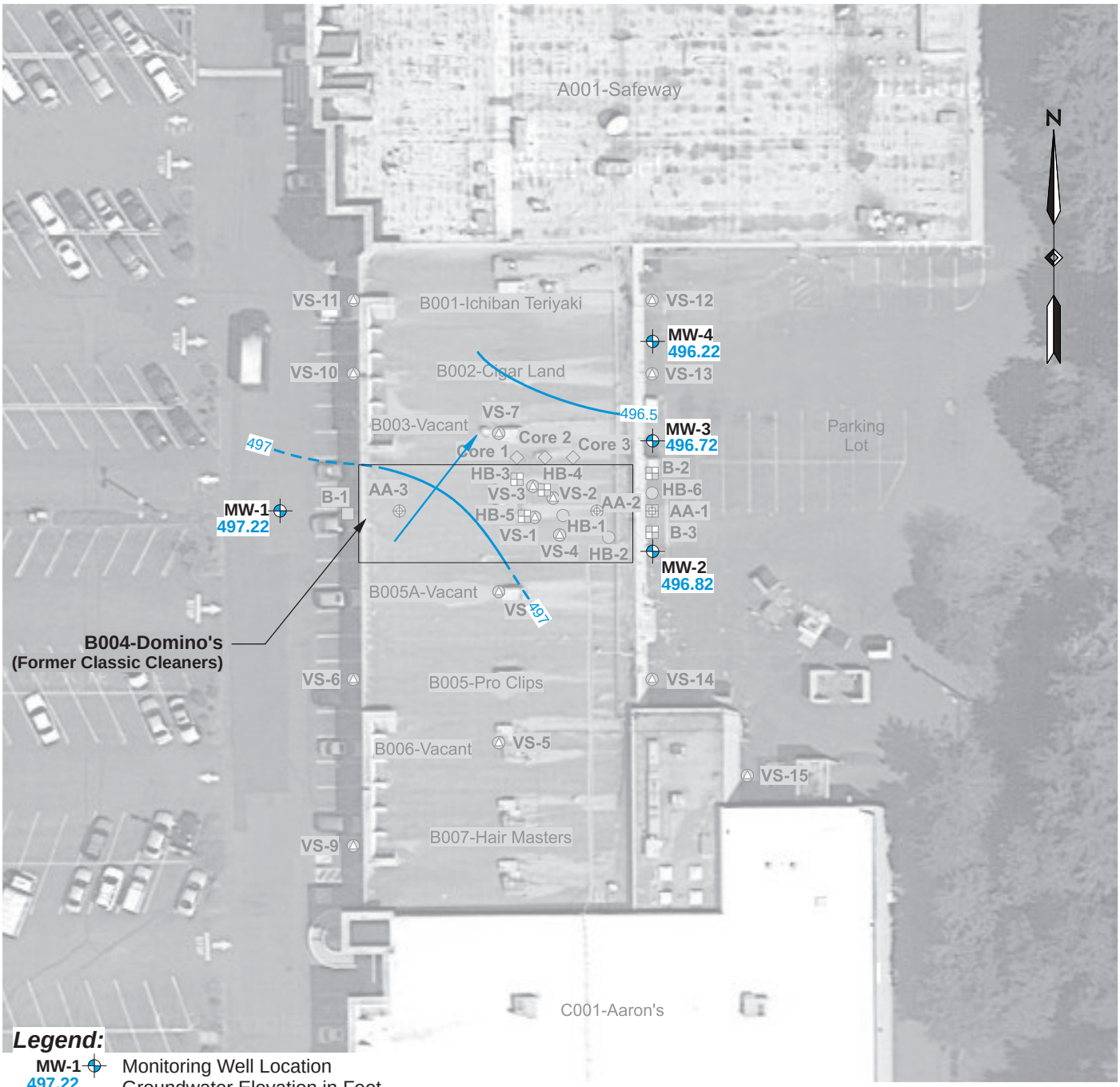
Approximate Scale in Feet

Groundwater Elevations - December 29, 1999

Cascade Plaza
Everett, Washington

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	11277-199	Figure
May 2014		A-6



Legend:

MW-1 / 497.22 — Monitoring Well Location, Groundwater Elevation in Feet

497 — Groundwater Elevation Contour in Feet (Dashed Where Inferred)

Apparent Groundwater Flow Direction

VS-3 — Soil Gas Sample Location (2013)

AA-2 — Indoor Ambient Air Sample Location (2013)

AA-1 — Outdoor Ambient Air Sample Location (2013)

HB-1 — Soil Sample Location (2002)

Core 1 — Soil Sample Location (1999)

B-1 — Soil Sample Location (1997)

B-2 — Soil and Groundwater Sample Location (1997)

NOTES: Base map prepared from 2013 - Google Imagery. Aerial dated July 5, 2012.

B004 = Unit Number

0 50 100

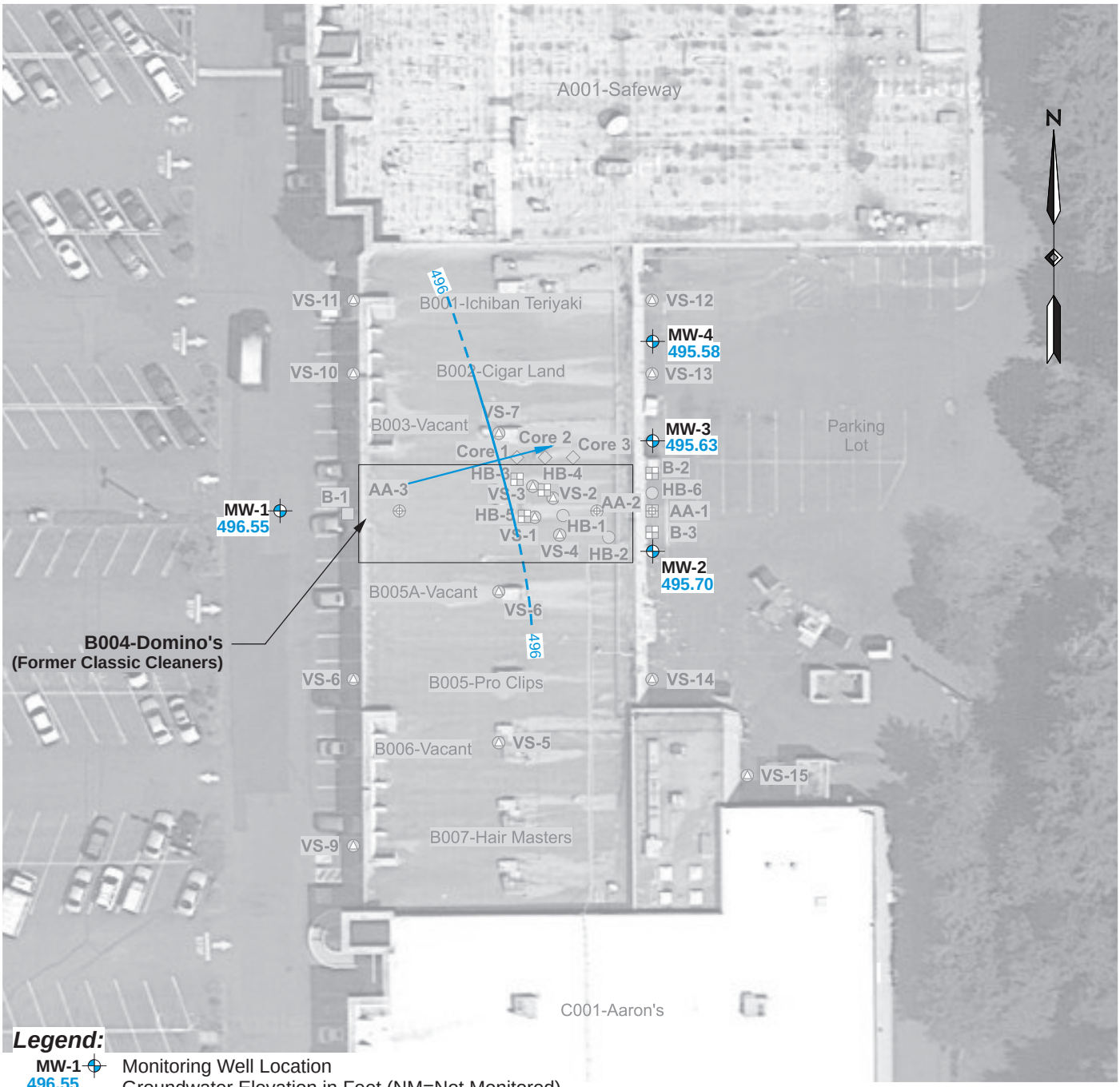
Approximate Scale in Feet

Groundwater Elevations - March 30, 2000

Cascade Plaza
Everett, Washington

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	11277-199	Figure
May 2014		A-7



Legend:

MW-1 496.55 — Monitoring Well Location; Groundwater Elevation in Feet (NM=Not Monitored)

496 — Groundwater Elevation Contour in Feet (Dashed Where Inferred)

Apparent Groundwater Flow Direction

VS-3 — Soil Gas Sample Location (2013)

AA-2 — Indoor Ambient Air Sample Location (2013)

AA-1 — Outdoor Ambient Air Sample Location (2013)

HB-1 — Soil Sample Location (2002)

Core 1 — Soil Sample Location (1999)

B-1 — Soil Sample Location (1997)

B-2 — Soil and Groundwater Sample Location (1997)

NOTES: Base map prepared from 2013 - Google Imagery. Aerial dated July 5, 2012.

B004 = Unit Number

0 50 100

Approximate Scale in Feet

Groundwater Elevations - August 2, 2000

Cascade Plaza
Everett, Washington

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	11277-199	Figure
May 2014		A-8

Attachment B

Apex Standard Operating Procedures

1. PURPOSE AND SCOPE

This Standard Operating Procedure (SOP) provides instructions for standard field screening. Field screening results are used to aid in the selection of soil samples for chemical analysis. This procedure is applicable during all Ash Creek Associates (ACA) soil sampling operations.

Standard field screening techniques include the use of a photoionization detector (PID) to assess for volatile organic compounds (VOCs), for the presence of petroleum hydrocarbons using a sheen test, and for non-aqueous phase liquids (NAPLs) using dyes and UV light. These methods will not detect all potential contaminants, so selection of screening techniques shall be based on an understanding of the site history. The PID is not compound or concentration-specific, but it can provide a qualitative indication of the presence of VOCs. PID measurements are affected by other field parameters such as temperature and soil moisture.

2. EQUIPMENT AND MATERIALS

The following materials are necessary for this procedure:

- PID with calibration gas (record daily calibration/calibration check in field notes)
- Glass jars (with aluminum foil) or resealable bags
- NAPL Dye (such as OilScreen DNAPL-Lens) if needed for NAPL screening
- UV Light Box (if needed for NAPL screening)

3. METHODOLOGY

Each soil sample will be field screened for VOCs using a PID (with a 10.2 eV probe) and for the presence of petroleum hydrocarbons using a sheen test. If the presence of NAPLs is suspected, then screening using dye and UV light is also to be completed. The PID used on site will be calibrated on a daily basis according to the manufacturer's specifications. The PID is also used as a safety tool. The PID can be used to monitor air during activities where vapors may be present in the breathing space. Document all calibration activities and field observations. The field screening procedures are summarized below.

PID Calibration Procedure:

- Zero the PID using ambient air from the general area where the work will be done.
- A standard gas of 100 ppm isobutylene gas is then used to calibrate the PID. If questionable readings are encountered, the PID will be recalibrated using new 100 ppm isobutylene gas.

PID Screening Procedure:

- Place a representative portion (approximately one ounce) of freshly exposed, uncompacted soil into a clean resealable plastic bag or glass jar.
- Seal the bag or jar (with aluminum foil) and shake to expose vapors from the soil matrix.
- Allow the bag to sit to reach ambient temperature.
- Carefully insert the intake port of the PID into the plastic bag or jar.
- Record the sample concentration in the field notes.

Sheen Test Procedure:

- Following the PID screen, add enough water to the bag/jar to cover the sample.
- Observe the water surface for signs of discoloration/sheen and characterize.

No Sheen (NS)	No visible sheen on the water surface
Slight Sheen (SS)	Light, colorless, dull sheen, irregular spread, not rapid. Biological content may produce a slight sheen (typically platy/blocky).
Moderate Sheen (MS)	Light to heavy coverage, may have some color/iridescence, spread is irregular to flowing, few remaining areas of no sheen on water surface.
Heavy Sheen (HS)	Heavy sheen coverage with color/iridescence, spread is rapid, entire water surface may be covered with sheen.

NAPL Dye Procedure:

- Dye can be either liquid form, dissolvable tablet, or spray applied.
- Follow manufacturers instructions for specific product used.
- NAPL testing is completed after other field screening and sample collection is complete.
- For OilScreen DNAPL-Lens dye, the remaining soil sample is sprayed along its length so the soil surface is visibly wetted. A royal blue color of the dye about one minute after spraying would be considered a positive indication of NAPL.

UV Light Screening Procedure:

- UV Light Screening involves placement of a portion of the soil sample into a resealable plastic bag (which can be the same as used for PID screening, but before sheen test is performed).
- The sample is then examined in a dark space under UV light using a small, portable UV light box.
- The plastic bag is manipulated during examination to squeeze fluid against the bag beneath the lamp.
- Fluorescence (glowing color) indicates presence of NAPLs.

1. PURPOSE AND SCOPE

This Standard Operating Procedure (SOP) describes the methods used for obtaining surface soil samples for physical and/or chemical analysis. For purposes of this SOP, surface soil (including shallow subsurface soil) is loosely defined as soil that is present within 3 feet of the ground surface at the time of sampling. Various types of sampling equipment are used to collect surface soil samples including spoons, scoops, trowels, shovels, and hand augers.

2. EQUIPMENT AND MATERIALS

The following materials are necessary for this procedure:

- Spoons, scoops, trowels, shovels, and/or hand augers. Stainless steel is preferred.
- Stainless steel bowls
- Field documentation materials
- Decontamination materials
- Personal protective equipment (as required by Health and Safety Plan)

3. METHODOLOGY

Project-specific requirements will generally dictate the preferred type of sampling equipment used at a particular site. The following parameters should be considered: sampling depth, soil density, soil moisture, use of analyses (e.g., chemical versus physical testing), type of analyses (e.g., volatile versus non-volatile). Analytical testing requirements will indicate sample volume requirements that also will influence the selection of the appropriate type of sampling tool. The project sampling plan should define the specific requirements for collection of surface soil samples at a particular site.

Collection of Samples

- Volatile Analyses. Surface soil sampling for volatile organics analysis (VOA) is different than other routine physical or chemical testing because of the potential loss of volatiles during sampling. To limit volatile loss, the soil sample must be obtained as quickly and as directly as possible. If a VOA sample is to collected as part of a multiple analyte sample, the VOA sample portion will be obtained first. The VOA sample should be obtained from a discrete portion of the entire collected sample and should not be composited or homogenized. Sample bottles should be filled to capacity, with no headspace. Specific procedures for collecting VOA samples using the EPA Method 5035 are discussed under a separate SOP.
- Other Analyses. Once the targeted sample interval has been collected, the soil sample will be thoroughly homogenized in a stainless steel bowl prior to bottling. Sample homogenizing is accomplished by manually mixing the entire soil sample in the stainless steel bowl with the sampling tool or with a clean teaspoon or spatula until a uniform mixture is achieved. If packing of the samples into the bottles is necessary, a clean stainless steel teaspoon or spatula may be used.

General Sampling Procedure:

- Decontaminate sampling equipment in accordance with the Sampling and Analysis Plan (SAP) before and after each individual soil sample.
- Remove surface debris that blocks access to the actual soil surface or loosen dense surface soils, such as those encountered in heavy traffic areas. If sampling equipment is used to remove surface debris,

the equipment should be decontaminated prior to sampling to reduce the potential for sample interferences.

- When using a hand auger, push and rotate downward until the auger becomes filled with soil. Usually a 6- to 12-inch long core of soil is obtained each time the auger is inserted. Once filled, remove the auger from the ground and empty into a stainless steel bowl. If a VOA sample is required, the sample should be taken directly from the auger using a teaspoon or spatula and/or directly filling the sample container from the auger. Repeat the augering process until the desired sample interval has been augered and placed into the stainless steel bowl.

Backfilling Sample Locations:

Backfill in accordance with federal and state regulations including OAR 690-240 (e.g., bentonite requirements). The soils from the excavation will be used as backfill unless project-specific or state requirements include the use of clean backfill material.

1. PURPOSE AND SCOPE

This Standard Operating Procedure (SOP) describes the methods for observing and sampling from push-probes (i.e., GeoProbe™). Subsurface soil cores may be obtained using this system for purposes of determining subsurface soil conditions and for obtaining soil samples for physical and/or chemical evaluation. Grab groundwater samples may be collected using temporary well screens. Soil vapor samples may be obtained using temporary well points. Shallow (less than 50 feet), small-diameter (2-inch max) pre-packed wells may also be installed using push-probe equipment. This procedure is applicable during all Apex Companies, LLC (Apex) push-probe activities.

2. EQUIPMENT AND MATERIALS

The following materials are necessary for this procedure:

- Traffic cones, measuring tape, spatula, and buckets/drums
- Sampling equipment (water level probe, pumps, tubing) and laboratory-supplied sample containers
- Field documentation materials
- Decontamination materials
- Personal protective equipment (as required by project Health and Safety Plan)

3. METHODOLOGY

Coring Procedure (Conducted by Drilling Subcontractor):

The sampling procedure includes driving a 2-inch outside-diameter, 5-foot-long, push-probe soil sampler to the desired depth using a combination of hydraulic pressure and mechanical hammer blows. When the sampling depth is reached, the pin attaching the sampler's tip is released (if a tip is used), which allows the tip to slide inside the sampler (Macro-Core Sampler with removable plastic liner). The sampler is driven the length of the sampler to collect a soil core, which is then withdrawn from the exploration. When the sampler is retrieved from the borehole the drive head/cutting shoe is detached and the liner is removed. Soil cores are collected continuously to the full depth of the exploration unless otherwise specified in a project-specific sampling and analysis plan (SAP). Verify that the subcontractor decontaminates the sampling device (per SOP 1.2) prior to its initial use and following collection of each soil sample.

Logging and Soil Sample Collection:

Remove the soil core from the sampler for field screening, description, and placement into sample jars. Soil samples will be collected for field screening and possible chemical analysis on two foot intervals unless otherwise specified in a project-specific SAP. The sampling interval will be determined in the field based on recovery, soil variability, and evidence of contamination. Complete field screening as specified in SOP-2.1. Soil samples should be collected using different procedures for volatile on non-volatile analyses, as follows.

- Volatile Analyses. Sampling for volatile organics analysis (VOA) is different than other routine physical or chemical testing because of the potential loss of volatiles during sampling. To limit volatile loss, the soil sample must be obtained as quickly and as directly as possible. If a VOA sample is to collected as part of a multiple analyte sample, the VOA sample portion will be obtained first. The VOA sample should be obtained from a discrete portion of the entire collected sample and should not be composited or homogenized. Sample bottles should be filled to capacity, with no headspace. Specific procedures for collecting VOA samples using the EPA Method 5035 are discussed in SOP 2.7.
- Other Analyses. Soil samples for non-volatile analyses will be thoroughly homogenized in a stainless steel bowl prior to bottling. Sample homogenizing is accomplished by manually mixing the entire soil

sample in the stainless steel bowl with a clean sampling tool until a uniform mixture is achieved. The sample jar should be filled completely.

Any extra soil generated during probing activities will be placed in Department of Transportation (DOT) approved drums.

Grab Groundwater Sample Collection:

Collect grab groundwater samples using a sampling attachment with a 4 to 5-foot-long temporary screen (decontaminated stainless steel or disposable PVC). Obtain samples using a peristaltic pump with new tubing for each boring. Record field parameters (e.g., temperature, conductivity, and pH) prior to sampling.

Backfilling the Excavation (Conducted by Drilling Subcontractor):

After sampling activities are completed, abandon each exploration in accordance with Oregon Water Resources Department (OWRD) regulations and procedures. The abandonment procedure typically consists of filling the exploration with granular bentonite and hydrating the bentonite with water. Match the surface completion to the surrounding materials.

1. PURPOSE AND SCOPE

This Standard Operating Procedure (SOP) describes the methods for collection of groundwater samples from monitoring wells applying low flow protocols. Low flow sampling is a method of collecting samples that does not require the removal of large volumes of water and therefore does not overly agitate the water, suspend particles, or potentially aspirate VOCs. Typical flow rates for low flow sampling range from 0.1 L/min to 0.5 L/min depending on site characteristics. The groundwater monitoring activities will consist of measuring water levels, purging and sampling groundwater, and measuring groundwater field parameters. This procedure is applicable during all Apex Companies, LLC (Apex) low flow groundwater sampling activities.

2. EQUIPMENT AND MATERIALS

The following materials are necessary for this procedure:

- Traffic cones, tools, keys, and buckets/drums
- Sampling equipment (water level probe, pumps, tubing) and laboratory-supplied sample containers
- Field documentation materials
- Decontamination materials
- Personal protective equipment (as required by project Health and Safety Plan)

3. METHODOLOGY

Water Levels:

Water levels in the wells will be measured and recorded for the purpose of determining groundwater elevations and gradient. The wells will be opened and the water level allowed to equilibrate before the measurements are taken. Measurements of the depth to water will be made to the nearest 0.01 foot using an electronic probe.

Purging:

Purge using low-flow sampling equipment (e.g., peristaltic pump or bladder pump) at a rate no greater than the recharge rate of the groundwater to prevent water table drawdown. Unless specified otherwise in the project-specific sampling and analysis plan (SAP) the sample tubing/pump will be lowered to one foot below the water table (petroleum hydrocarbons) or to the middle of the screened interval (all other analytes). To assess the effectiveness of purging, groundwater field parameters (pH, electrical conductivity, and temperature) will be measured using a flow cell connected to the discharge tubing of the sample pump. Purging will be considered complete when the water quality parameters (i.e., pH, temperature, and specific conductance) stabilize within 10 percent for three consecutive 3-minute intervals. Consult the project-specific SAP for additional parameters and stabilization criteria. Purge water will be placed in Department of Transportation (DOT) approved drums.

Sample Collection:

After the purging of each well is complete, collect groundwater samples for chemical analyses using the same pump used for the well purging.

Low Yield Sampling Procedure:

If a well pumps dry during purging discontinue measurement of water quality parameters. Collect groundwater samples once the water level recovers to 90 percent of the pre-purge water column. Contact project manager in the event of slow recharge conditions. Always collect samples for VOC analysis as soon after recharge as possible.

1. PURPOSE AND SCOPE

This Standard Operating Procedure (SOP) describes procedures for the collection of groundwater level measurements and separate phase hydrocarbon (SPH) measurements. Measurements may be collected as an independent event or in conjunction with groundwater sampling or SPH removal. This SOP is applicable for all Apex Companies, LLC (Apex) sites and projects.

2. EQUIPMENT AND MATERIALS

The following materials are necessary for this procedure:

- Water level or oil/water interface probe (as appropriate);
- Field documentation materials;
- Decontamination materials;
- Bailers or tape/paste (to confirm unusual SPH detections) and
- Personal protective equipment (PPE; as required by project Health and Safety Plan).

3. METHODOLOGY

Preparation. Obtain and review table of well construction details and historical groundwater and SPH levels/thicknesses. Bring tables into the field for ready reference.

Field Procedure. Water level and SPH measurements should be collected upon arrival at the site. Appropriate PPE (as required by the project-specific Health and Safety Plan) should be worn during measurement activities. During groundwater sampling events, measurements should be collected (1) prior to, during, and after purging and sampling. Water level measurements during low-flow sampling are conducted to ensure that drawdown is not occurring during purging/sampling. Low-flow sampling methods are described in SOP 2.5. The following procedures should be followed when collecting groundwater level and SPH measurements from wells:

No SPH in monitoring well

1. The electronic probe should be tested to ensure proper instrument response. If response is inadequate, replace batteries or repair probe as needed.
2. Well covers and caps will be opened and the water level allowed to equilibrate under atmospheric conditions. Observe for indications that water levels may not be at equilibrium such as:
    a. Escaping air upon loosening of well cap; or
    b. Water level above the top of the well screen.

    For either of these conditions, equilibrium should be verified by repeating water level measurements over five-minute intervals until successive equal measurements are obtained. Otherwise allow water levels to equilibrate for a minimum of five minutes before measurements are taken. Unless otherwise indicated in the work scope of site-specific sampling plan, water level measurements should be taken from the most contaminated wells first to avoid cross-contamination.
3. Locate the reference point on the well riser pipe.
4. Slowly lower the probe until the probe signal indicates that water has been contacted.
5. Record the depth-to-water (DTW) probe reading at the reference point. Measurements should be collected to the nearest 0.01 foot.
6. Withdraw the probe and repeat steps 5 and 6. Measurements should agree within a precision of 0.01 feet. Repeat if needed until a precision of 0.01 feet is obtained.
7. If the work scope or site specific sampling plan requires that the depth-to-bottom (DTB) of monitoring wells is measured, then the probe should be lowered to the bottom of the well and the DTB reading at the reference point should be measured to the nearest 0.01 foot.
8. Remove probe and decontaminate probe and leader that have come in contact with well water using alcohol wipes.

SPH in monitoring well

1. Repeat above steps 1 through 5.
2. Slowly lower the oil/water interface probe until the signal indicates that SPH has been contacted (generally a steady tone and signal light).
3. Record the depth-to-product (DTP) probe reading at the reference point. Measurements should be collected to the nearest 0.01 foot.
4. Continue lowering the probe until the signal indicates that water has been contacted (generally an intermittent tone and signal light).
5. Record the DTW probe reading at the reference point. Measurements should be collected to the nearest 0.01 foot.
6. Withdraw the probe and repeat steps 5 and 6. Measurements should agree within a precision of 0.01 feet. Repeat if needed until a precision of 0.01 feet is obtained.
7. Remove probe and initially decontaminate using alcohol wipes then wash/scrub in a detergent (Alconox®) solution, rinse with tap water, and a final deionized water rinse. Describe in field notes unusual characteristics of SPH that may bias thickness readings (e.g. unusually viscous product).
8. If unusual SPH thicknesses are detected (e.g. SPH is detected in well with no prior history of SPH or thicknesses are greater than prior detections), verify presence/thickness using alternative technique (e.g. bailer, tape and water/petroleum colorimetric paste).

Attachment C

Laboratory Reports and QA/QC Report

Attachment C – Laboratory Analytical Report and Data Quality Review

This appendix documents the results of a quality assurance/quality control (QA/QC) review of the analytical data for samples collected as part of the groundwater monitoring and a soil vapor intrusion investigation at the former Cascade Plaza Shopping Center (the Facility). Groundwater monitoring was completed on March 27, 2013. Soil gas sampling was completed on October 4, November 20, and December 6 and 19, 2013 and March 28, 2014. Air sampling was completed on November 20 and December 6, 2013. Groundwater sample analyses were performed by Test America of Tacoma, Washington. Soil gas and air sample analyses were performed by Eurofins Air Toxics, Inc., of Folsom, California. Copies of the laboratory reports are included in this attachment.

The QA review included examination and validation of the laboratory summary report, specifically:

- Analytical methods;
- Detection limits;
- Sample holding times;
- Chain of custody (COC) records;
- Surrogates, spikes, and blanks; and
- Duplicates.

The QA review did not include a review of raw data.

Analytical Methods

Groundwater sample were analyzed for volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Method 8260B.

Soil gas samples were analyzed for halogenated volatile organic compounds (HVOCs) using EPA Method TO15.

Quality Assurance Objectives and Review

The general QA objectives for this project were to develop and implement procedures for obtaining, evaluating, and confirming the usability of data of a specified quality for monitoring groundwater quality trends and remediation systems performance at the Facility. To collect such information, analytical data must have an appropriate degree of accuracy and reproducibility, samples collected must be representative of actual field conditions, and samples must be collected and analyzed using unbroken COC procedures.

Reporting limits and analytical results for groundwater samples were compared to applicable regulatory cleanup levels and screening levels for each parameter. Precision, accuracy, representativeness, completeness, and comparability parameters used to indicate data quality are defined below.

Reporting Limits. Detection limits are set by the laboratory and are based on instrumentation abilities, sample matrix, and suggested detection limits by the EPA or the Washington State Department of Ecology (Ecology). In some cases, the detection limits may be increased due to high concentrations of analytes in the samples or matrix interferences. Detection limits were generally consistent with industry standards and regulatory standards when possible (if not raised, as previously discussed). Reporting limits were reviewed and are generally acceptable for this project. Reporting limits for individual samples varied based on the magnitude of the chemical impact. It is not expected that any of the raised detection limits compromised the usability of the data.

Holding Times. Samples were analyzed within the appropriate holding times.

Method Blanks. A method blank or laboratory blank is a sample prepared in the laboratory along with the actual samples and analyzed for the same parameters at the same time. It is used to assess if detected analytes may have been the result of contamination of the samples in the laboratory. No analytes were detected in the laboratory method blanks for the groundwater, soil gas, or air analyses.

Laboratory Control Samples. Laboratory Control Samples (LCS) were also analyzed by the laboratories to assess the accuracy of the analytical equipment. LCS are prepared from an analyte-free matrix that is then spiked with known levels of the constituents of interest (COI; i.e., a standard). The concentrations are measured and the results compared to the known spiked levels. This comparison is expressed as percent recovery. The LCS percent recovery was within control limits for the groundwater, soil gas, and air samples.

In addition, a second laboratory control sample (the Laboratory Control Sample Duplicate [LCSD]) was prepared as above and analyzed. The LCSD percent recovery was within control limits for the water and air samples. The LCS and LCSD samples are compared to assess the precision of the analytical method (RPD). The RPD was within acceptable control limits for all water and air samples.

Matrix Spike Analyses. Matrix Spike (MS) analyses are performed on samples submitted to the laboratory that are of the same matrix as the actual sample. The MS is spiked with known levels of the COI. These analyses are used to assess the potential for matrix interference with recovery or detection of the COI and the accuracy of the determination. The spiked sample results are compared to the expected result (i.e., sample concentration plus spike amount) and reported as percent recovery. Several MS and MS duplicates (MSD) were analyzed during the batch analyses for groundwater monitoring events. All MS/MSD samples were within control limits.

For the soil gas and air monitoring samples, the LCS and LCSD samples were used to evaluate the accuracy of analyte recovery. The LCS/LCSD results for the soil gas and air monitoring samples within acceptable recovery limits. No MS or MSD samples were analyzed as part of the soil gas or air sample QC batches.

Surrogate Recovery. Surrogates are organic compounds that are similar in chemical composition to the COI and spiked into environmental and batch quality control samples prior to sample preparation and analysis. Surrogate recoveries for environmental samples are used to evaluate matrix interference on a sample-specific basis. All surrogate recoveries were within control limits.

Field Duplicate. A field duplicate is a second field sample collected from a selected monitoring well or sampling location. Field duplicate samples serve as a check on laboratory quality as well as potential variability of the sample matrix. The field duplicate is analyzed and compared with the first sample to assess the precision of the analytical method. This comparison can be expressed by the RPD between the original and duplicate samples. Groundwater sample MW-2 and MW-2 DUP were collected as a field duplicate. No analytes were detected in either sample; therefore, an RPD could not be calculated.

Field duplicates were not collected for air samples.

Conclusion. In conclusion, the overall QA objectives have been met, and the data are of adequate quality for use in this project.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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

TestAmerica Job ID: 250-18154-1
TestAmerica Sample Delivery Group: 11277.199
Client Project/Site: Regency Cascade Plaza

For:
Apex Companies LLC
3015 SW 1st Avenue
Portland, Oregon 97201

Attn: Mark Havighorst

Vanessa Berry

Authorized for release by:
4/8/2014 3:15:49 PM

Vanessa Berry, Project Manager II
(503)906-9233
vanessa.berry@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Sample Summary

Client: Apex Companies LLC
Project/Site: Regency Cascade Plaza

TestAmerica Job ID: 250-18154-1
SDG: 11277.199

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
250-18154-1	MW-1	Water	03/27/14 10:30	04/01/14 14:30
250-18154-2	MW-2	Water	03/27/14 11:05	04/01/14 14:30
250-18154-3	MW-2 DUP	Water	03/27/14 11:05	04/01/14 14:30
250-18154-4	MW-3	Water	03/27/14 11:30	04/01/14 14:30
250-18154-5	MW-4	Water	03/27/14 12:00	04/01/14 14:30
250-18154-6	Trip Blank	Water	03/27/14 00:00	04/01/14 14:30

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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

Client Sample ID: MW-1
Date Collected: 03/27/14 10:30
Date Received: 04/01/14 14:30

Lab Sample ID: 250-18154-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromobenzene	ND		0.50		ug/L			04/03/14 13:19	1
Bromodichloromethane	ND		0.50		ug/L			04/03/14 13:19	1
Bromoform	ND		1.0		ug/L			04/03/14 13:19	1
Bromomethane	ND		5.0		ug/L			04/03/14 13:19	1
Carbon tetrachloride	ND		0.50		ug/L			04/03/14 13:19	1
Chlorobenzene	ND		0.50		ug/L			04/03/14 13:19	1
Chloroethane	ND		0.50		ug/L			04/03/14 13:19	1
Chloroform	ND		0.50		ug/L			04/03/14 13:19	1
Chloromethane	ND		5.0		ug/L			04/03/14 13:19	1
Dibromochloromethane	ND		1.0		ug/L			04/03/14 13:19	1
1,2-Dibromoethane	ND		0.50		ug/L			04/03/14 13:19	1
Dibromomethane	ND		0.50		ug/L			04/03/14 13:19	1
1,2-Dichlorobenzene	ND		0.50		ug/L			04/03/14 13:19	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/03/14 13:19	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/03/14 13:19	1
Dichlorodifluoromethane	ND		5.0		ug/L			04/03/14 13:19	1
1,1-Dichloroethane	ND		0.50		ug/L			04/03/14 13:19	1
1,2-Dichloroethane	ND		0.50		ug/L			04/03/14 13:19	1
1,1-Dichloroethene	ND		0.50		ug/L			04/03/14 13:19	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			04/03/14 13:19	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			04/03/14 13:19	1
1,2-Dichloropropane	ND		0.50		ug/L			04/03/14 13:19	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/03/14 13:19	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/03/14 13:19	1
Methylene Chloride	ND		5.0		ug/L			04/03/14 13:19	1
1,1,1,2-Tetrachloroethane	ND		0.50		ug/L			04/03/14 13:19	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			04/03/14 13:19	1
Tetrachloroethene	ND		0.50		ug/L			04/03/14 13:19	1
1,1,1-Trichloroethane	ND		0.50		ug/L			04/03/14 13:19	1
1,1,2-Trichloroethane	ND		0.50		ug/L			04/03/14 13:19	1
Trichloroethene	ND		0.50		ug/L			04/03/14 13:19	1
Trichlorofluoromethane	ND		0.50		ug/L			04/03/14 13:19	1
1,2,3-Trichloropropane	ND		0.50		ug/L			04/03/14 13:19	1
Vinyl chloride	ND		0.50		ug/L			04/03/14 13:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*81*		*80 - 120*		*04/03/14 13:19*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*04/03/14 13:19*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*04/03/14 13:19*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*04/03/14 13:19*	*1*

Client Sample ID: MW-2
Date Collected: 03/27/14 11:05
Date Received: 04/01/14 14:30

Lab Sample ID: 250-18154-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromobenzene	ND		0.50		ug/L			04/04/14 13:47	1
Bromodichloromethane	ND		0.50		ug/L			04/04/14 13:47	1
Bromoform	ND		1.0		ug/L			04/04/14 13:47	1
Bromomethane	ND		5.0		ug/L			04/04/14 13:47	1
Carbon tetrachloride	ND		0.50		ug/L			04/04/14 13:47	1

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

Client Sample ID: MW-2
Date Collected: 03/27/14 11:05
Date Received: 04/01/14 14:30

Lab Sample ID: 250-18154-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	ND		0.50		ug/L			04/04/14 13:47	1
Chloroethane	ND		0.50		ug/L			04/04/14 13:47	1
Chloroform	ND		0.50		ug/L			04/04/14 13:47	1
Chloromethane	ND		5.0		ug/L			04/04/14 13:47	1
Dibromochloromethane	ND		1.0		ug/L			04/04/14 13:47	1
1,2-Dibromoethane	ND		0.50		ug/L			04/04/14 13:47	1
Dibromomethane	ND		0.50		ug/L			04/04/14 13:47	1
1,2-Dichlorobenzene	ND		0.50		ug/L			04/04/14 13:47	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/04/14 13:47	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/04/14 13:47	1
Dichlorodifluoromethane	ND		5.0		ug/L			04/04/14 13:47	1
1,1-Dichloroethane	ND		0.50		ug/L			04/04/14 13:47	1
1,2-Dichloroethane	ND		0.50		ug/L			04/04/14 13:47	1
1,1-Dichloroethene	ND		0.50		ug/L			04/04/14 13:47	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			04/04/14 13:47	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			04/04/14 13:47	1
1,2-Dichloropropane	ND		0.50		ug/L			04/04/14 13:47	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/04/14 13:47	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/04/14 13:47	1
Methylene Chloride	ND		5.0		ug/L			04/04/14 13:47	1
1,1,1,2-Tetrachloroethane	ND		0.50		ug/L			04/04/14 13:47	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			04/04/14 13:47	1
Tetrachloroethene	ND		0.50		ug/L			04/04/14 13:47	1
1,1,1-Trichloroethane	ND		0.50		ug/L			04/04/14 13:47	1
1,1,2-Trichloroethane	ND		0.50		ug/L			04/04/14 13:47	1
Trichloroethene	ND		0.50		ug/L			04/04/14 13:47	1
Trichlorofluoromethane	ND		0.50		ug/L			04/04/14 13:47	1
1,2,3-Trichloropropane	ND		0.50		ug/L			04/04/14 13:47	1
Vinyl chloride	ND		0.50		ug/L			04/04/14 13:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*04/04/14 13:47*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*04/04/14 13:47*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*04/04/14 13:47*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*04/04/14 13:47*	*1*

Client Sample ID: MW-2 DUP
Date Collected: 03/27/14 11:05
Date Received: 04/01/14 14:30

Lab Sample ID: 250-18154-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromobenzene	ND		0.50		ug/L			04/04/14 14:11	1
Bromodichloromethane	ND		0.50		ug/L			04/04/14 14:11	1
Bromoform	ND		1.0		ug/L			04/04/14 14:11	1
Bromomethane	ND		5.0		ug/L			04/04/14 14:11	1
Carbon tetrachloride	ND		0.50		ug/L			04/04/14 14:11	1
Chlorobenzene	ND		0.50		ug/L			04/04/14 14:11	1
Chloroethane	ND		0.50		ug/L			04/04/14 14:11	1
Chloroform	ND		0.50		ug/L			04/04/14 14:11	1
Chloromethane	ND		5.0		ug/L			04/04/14 14:11	1
Dibromochloromethane	ND		1.0		ug/L			04/04/14 14:11	1

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

Client Sample ID: MW-2 DUP
Date Collected: 03/27/14 11:05
Date Received: 04/01/14 14:30

Lab Sample ID: 250-18154-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		0.50		ug/L			04/04/14 14:11	1
Dibromomethane	ND		0.50		ug/L			04/04/14 14:11	1
1,2-Dichlorobenzene	ND		0.50		ug/L			04/04/14 14:11	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/04/14 14:11	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/04/14 14:11	1
Dichlorodifluoromethane	ND		5.0		ug/L			04/04/14 14:11	1
1,1-Dichloroethane	ND		0.50		ug/L			04/04/14 14:11	1
1,2-Dichloroethane	ND		0.50		ug/L			04/04/14 14:11	1
1,1-Dichloroethene	ND		0.50		ug/L			04/04/14 14:11	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			04/04/14 14:11	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			04/04/14 14:11	1
1,2-Dichloropropane	ND		0.50		ug/L			04/04/14 14:11	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/04/14 14:11	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/04/14 14:11	1
Methylene Chloride	ND		5.0		ug/L			04/04/14 14:11	1
1,1,1,2-Tetrachloroethane	ND		0.50		ug/L			04/04/14 14:11	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			04/04/14 14:11	1
Tetrachloroethene	ND		0.50		ug/L			04/04/14 14:11	1
1,1,1-Trichloroethane	ND		0.50		ug/L			04/04/14 14:11	1
1,1,2-Trichloroethane	ND		0.50		ug/L			04/04/14 14:11	1
Trichloroethene	ND		0.50		ug/L			04/04/14 14:11	1
Trichlorofluoromethane	ND		0.50		ug/L			04/04/14 14:11	1
1,2,3-Trichloropropane	ND		0.50		ug/L			04/04/14 14:11	1
Vinyl chloride	ND		0.50		ug/L			04/04/14 14:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*04/04/14 14:11*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/04/14 14:11*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*04/04/14 14:11*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*04/04/14 14:11*	*1*

Client Sample ID: MW-3
Date Collected: 03/27/14 11:30
Date Received: 04/01/14 14:30

Lab Sample ID: 250-18154-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromobenzene	ND		0.50		ug/L			04/04/14 14:35	1
Bromodichloromethane	ND		0.50		ug/L			04/04/14 14:35	1
Bromoform	ND		1.0		ug/L			04/04/14 14:35	1
Bromomethane	ND		5.0		ug/L			04/04/14 14:35	1
Carbon tetrachloride	ND		0.50		ug/L			04/04/14 14:35	1
Chlorobenzene	ND		0.50		ug/L			04/04/14 14:35	1
Chloroethane	ND		0.50		ug/L			04/04/14 14:35	1
Chloroform	ND		0.50		ug/L			04/04/14 14:35	1
Chloromethane	ND		5.0		ug/L			04/04/14 14:35	1
Dibromochloromethane	ND		1.0		ug/L			04/04/14 14:35	1
1,2-Dibromoethane	ND		0.50		ug/L			04/04/14 14:35	1
Dibromomethane	ND		0.50		ug/L			04/04/14 14:35	1
1,2-Dichlorobenzene	ND		0.50		ug/L			04/04/14 14:35	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/04/14 14:35	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/04/14 14:35	1

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

Client Sample ID: MW-3
Date Collected: 03/27/14 11:30
Date Received: 04/01/14 14:30

Lab Sample ID: 250-18154-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		5.0		ug/L			04/04/14 14:35	1
1,1-Dichloroethane	ND		0.50		ug/L			04/04/14 14:35	1
1,2-Dichloroethane	ND		0.50		ug/L			04/04/14 14:35	1
1,1-Dichloroethene	ND		0.50		ug/L			04/04/14 14:35	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			04/04/14 14:35	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			04/04/14 14:35	1
1,2-Dichloropropane	ND		0.50		ug/L			04/04/14 14:35	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/04/14 14:35	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/04/14 14:35	1
Methylene Chloride	ND		5.0		ug/L			04/04/14 14:35	1
1,1,1,2-Tetrachloroethane	ND		0.50		ug/L			04/04/14 14:35	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			04/04/14 14:35	1
Tetrachloroethene	ND		0.50		ug/L			04/04/14 14:35	1
1,1,1-Trichloroethane	ND		0.50		ug/L			04/04/14 14:35	1
1,1,2-Trichloroethane	ND		0.50		ug/L			04/04/14 14:35	1
Trichloroethene	ND		0.50		ug/L			04/04/14 14:35	1
Trichlorofluoromethane	ND		0.50		ug/L			04/04/14 14:35	1
1,2,3-Trichloropropane	ND		0.50		ug/L			04/04/14 14:35	1
Vinyl chloride	ND		0.50		ug/L			04/04/14 14:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*04/04/14 14:35*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*04/04/14 14:35*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*04/04/14 14:35*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*04/04/14 14:35*	*1*

Client Sample ID: MW-4
Date Collected: 03/27/14 12:00
Date Received: 04/01/14 14:30

Lab Sample ID: 250-18154-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromobenzene	ND		0.50		ug/L			04/04/14 12:59	1
Bromodichloromethane	ND		0.50		ug/L			04/04/14 12:59	1
Bromoform	ND		1.0		ug/L			04/04/14 12:59	1
Bromomethane	ND		5.0		ug/L			04/04/14 12:59	1
Carbon tetrachloride	ND		0.50		ug/L			04/04/14 12:59	1
Chlorobenzene	ND		0.50		ug/L			04/04/14 12:59	1
Chloroethane	ND		0.50		ug/L			04/04/14 12:59	1
Chloroform	ND		0.50		ug/L			04/04/14 12:59	1
Chloromethane	ND		5.0		ug/L			04/04/14 12:59	1
Dibromochloromethane	ND		1.0		ug/L			04/04/14 12:59	1
1,2-Dibromoethane	ND		0.50		ug/L			04/04/14 12:59	1
Dibromomethane	ND		0.50		ug/L			04/04/14 12:59	1
1,2-Dichlorobenzene	ND		0.50		ug/L			04/04/14 12:59	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/04/14 12:59	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/04/14 12:59	1
Dichlorodifluoromethane	ND		5.0		ug/L			04/04/14 12:59	1
1,1-Dichloroethane	ND		0.50		ug/L			04/04/14 12:59	1
1,2-Dichloroethane	ND		0.50		ug/L			04/04/14 12:59	1
1,1-Dichloroethene	ND		0.50		ug/L			04/04/14 12:59	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			04/04/14 12:59	1

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

Client Sample ID: MW-4
Date Collected: 03/27/14 12:00
Date Received: 04/01/14 14:30

Lab Sample ID: 250-18154-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	ND		0.50		ug/L			04/04/14 12:59	1
1,2-Dichloropropane	ND		0.50		ug/L			04/04/14 12:59	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/04/14 12:59	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/04/14 12:59	1
Methylene Chloride	ND		5.0		ug/L			04/04/14 12:59	1
1,1,1,2-Tetrachloroethane	ND		0.50		ug/L			04/04/14 12:59	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			04/04/14 12:59	1
Tetrachloroethene	ND		0.50		ug/L			04/04/14 12:59	1
1,1,1-Trichloroethane	ND		0.50		ug/L			04/04/14 12:59	1
1,1,2-Trichloroethane	ND		0.50		ug/L			04/04/14 12:59	1
Trichloroethene	ND		0.50		ug/L			04/04/14 12:59	1
Trichlorofluoromethane	ND		0.50		ug/L			04/04/14 12:59	1
1,2,3-Trichloropropane	ND		0.50		ug/L			04/04/14 12:59	1
Vinyl chloride	ND		0.50		ug/L			04/04/14 12:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*04/04/14 12:59*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*04/04/14 12:59*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*04/04/14 12:59*	*1*
Toluene-d8 (Surr)	*86*		*80 - 120*		*04/04/14 12:59*	*1*

Client Sample ID: Trip Blank
Date Collected: 03/27/14 00:00
Date Received: 04/01/14 14:30

Lab Sample ID: 250-18154-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromobenzene	ND		0.50		ug/L			04/04/14 13:24	1
Bromodichloromethane	ND		0.50		ug/L			04/04/14 13:24	1
Bromoform	ND		1.0		ug/L			04/04/14 13:24	1
Bromomethane	ND		5.0		ug/L			04/04/14 13:24	1
Carbon tetrachloride	ND		0.50		ug/L			04/04/14 13:24	1
Chlorobenzene	ND		0.50		ug/L			04/04/14 13:24	1
Chloroethane	ND		0.50		ug/L			04/04/14 13:24	1
Chloroform	ND		0.50		ug/L			04/04/14 13:24	1
Chloromethane	ND		5.0		ug/L			04/04/14 13:24	1
Dibromochloromethane	ND		1.0		ug/L			04/04/14 13:24	1
1,2-Dibromoethane	ND		0.50		ug/L			04/04/14 13:24	1
Dibromomethane	ND		0.50		ug/L			04/04/14 13:24	1
1,2-Dichlorobenzene	ND		0.50		ug/L			04/04/14 13:24	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/04/14 13:24	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/04/14 13:24	1
Dichlorodifluoromethane	ND		5.0		ug/L			04/04/14 13:24	1
1,1-Dichloroethane	ND		0.50		ug/L			04/04/14 13:24	1
1,2-Dichloroethane	ND		0.50		ug/L			04/04/14 13:24	1
1,1-Dichloroethene	ND		0.50		ug/L			04/04/14 13:24	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			04/04/14 13:24	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			04/04/14 13:24	1
1,2-Dichloropropane	ND		0.50		ug/L			04/04/14 13:24	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/04/14 13:24	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/04/14 13:24	1
Methylene Chloride	ND		5.0		ug/L			04/04/14 13:24	1

Client: Apex Companies LLC
Project/Site: Regency Cascade Plaza

TestAmerica Job ID: 250-18154-1
SDG: 11277.199

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

Client Sample ID: Trip Blank
Date Collected: 03/27/14 00:00
Date Received: 04/01/14 14:30

Lab Sample ID: 250-18154-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50		ug/L			04/04/14 13:24	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			04/04/14 13:24	1
Tetrachloroethene	ND		0.50		ug/L			04/04/14 13:24	1
1,1,1-Trichloroethane	ND		0.50		ug/L			04/04/14 13:24	1
1,1,2-Trichloroethane	ND		0.50		ug/L			04/04/14 13:24	1
Trichloroethene	ND		0.50		ug/L			04/04/14 13:24	1
Trichlorofluoromethane	ND		0.50		ug/L			04/04/14 13:24	1
1,2,3-Trichloropropane	ND		0.50		ug/L			04/04/14 13:24	1
Vinyl chloride	ND		0.50		ug/L			04/04/14 13:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*04/04/14 13:24*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/04/14 13:24*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*04/04/14 13:24*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*04/04/14 13:24*	*1*

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

Lab Sample ID: MB 250-25849/6
Matrix: Water
Analysis Batch: 25849

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromobenzene	ND		0.50		ug/L			04/03/14 12:25	1
Bromodichloromethane	ND		0.50		ug/L			04/03/14 12:25	1
Bromoform	ND		1.0		ug/L			04/03/14 12:25	1
Bromomethane	ND		5.0		ug/L			04/03/14 12:25	1
Carbon tetrachloride	ND		0.50		ug/L			04/03/14 12:25	1
Chlorobenzene	ND		0.50		ug/L			04/03/14 12:25	1
Chloroethane	ND		0.50		ug/L			04/03/14 12:25	1
Chloroform	ND		0.50		ug/L			04/03/14 12:25	1
Chloromethane	ND		5.0		ug/L			04/03/14 12:25	1
Dibromochloromethane	ND		1.0		ug/L			04/03/14 12:25	1
1,2-Dibromoethane	ND		0.50		ug/L			04/03/14 12:25	1
Dibromomethane	ND		0.50		ug/L			04/03/14 12:25	1
1,2-Dichlorobenzene	ND		0.50		ug/L			04/03/14 12:25	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/03/14 12:25	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/03/14 12:25	1
Dichlorodifluoromethane	ND		5.0		ug/L			04/03/14 12:25	1
1,1-Dichloroethane	ND		0.50		ug/L			04/03/14 12:25	1
1,2-Dichloroethane	ND		0.50		ug/L			04/03/14 12:25	1
1,1-Dichloroethene	ND		0.50		ug/L			04/03/14 12:25	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			04/03/14 12:25	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			04/03/14 12:25	1
1,2-Dichloropropane	ND		0.50		ug/L			04/03/14 12:25	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/03/14 12:25	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/03/14 12:25	1
Methylene Chloride	ND		5.0		ug/L			04/03/14 12:25	1
1,1,1,2-Tetrachloroethane	ND		0.50		ug/L			04/03/14 12:25	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			04/03/14 12:25	1
Tetrachloroethene	ND		0.50		ug/L			04/03/14 12:25	1
1,1,1-Trichloroethane	ND		0.50		ug/L			04/03/14 12:25	1
1,1,2-Trichloroethane	ND		0.50		ug/L			04/03/14 12:25	1
Trichloroethene	ND		0.50		ug/L			04/03/14 12:25	1
Trichlorofluoromethane	ND		0.50		ug/L			04/03/14 12:25	1
1,2,3-Trichloropropane	ND		0.50		ug/L			04/03/14 12:25	1
Vinyl chloride	ND		0.50		ug/L			04/03/14 12:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*80 - 120*		*04/03/14 12:25*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*04/03/14 12:25*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*04/03/14 12:25*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*04/03/14 12:25*	*1*

Lab Sample ID: LCS 250-25849/3
Matrix: Water
Analysis Batch: 25849

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	20.0	20.6		ug/L		103	75 - 120
Bromodichloromethane	20.0	18.2		ug/L		91	80 - 130

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

Lab Sample ID: LCS 250-25849/3
Matrix: Water
Analysis Batch: 25849

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromoform	20.0	18.9		ug/L		94	55 - 135
Bromomethane	20.0	19.5		ug/L		98	35 - 150
Carbon tetrachloride	20.0	20.5		ug/L		103	70 - 135
Chlorobenzene	20.0	19.6		ug/L		98	80 - 125
Chloroethane	20.0	19.5		ug/L		98	75 - 125
Chloroform	20.0	18.5		ug/L		93	80 - 120
Chloromethane	20.0	21.9		ug/L		109	45 - 150
Dibromochloromethane	20.0	18.6		ug/L		93	65 - 140
1,2-Dibromoethane	20.0	17.0		ug/L		85	80 - 125
Dibromomethane	20.0	17.5		ug/L		87	80 - 120
1,2-Dichlorobenzene	20.0	19.6		ug/L		98	80 - 120
1,3-Dichlorobenzene	20.0	20.2		ug/L		101	75 - 125
1,4-Dichlorobenzene	20.0	20.2		ug/L		101	70 - 120
Dichlorodifluoromethane	20.0	23.0		ug/L		115	45 - 140
1,1-Dichloroethane	20.0	18.1		ug/L		91	80 - 120
1,2-Dichloroethane	20.0	15.6		ug/L		78	75 - 125
1,1-Dichloroethene	20.0	17.2		ug/L		86	75 - 120
cis-1,2-Dichloroethene	20.0	18.8		ug/L		94	80 - 120
trans-1,2-Dichloroethene	20.0	19.1		ug/L		96	80 - 120
1,2-Dichloropropane	20.0	19.0		ug/L		95	80 - 130
cis-1,3-Dichloropropene	20.0	18.4		ug/L		92	80 - 125
trans-1,3-Dichloropropene	20.0	17.3		ug/L		87	80 - 130
Methylene Chloride	20.0	18.1		ug/L		90	80 - 120
1,1,1,2-Tetrachloroethane	20.0	20.5		ug/L		103	65 - 140
1,1,2,2-Tetrachloroethane	20.0	18.6		ug/L		93	75 - 130
Tetrachloroethene	20.0	20.5		ug/L		103	80 - 125
1,1,1-Trichloroethane	20.0	19.3		ug/L		97	75 - 135
1,1,2-Trichloroethane	20.0	17.7		ug/L		88	80 - 125
Trichloroethene	20.0	19.5		ug/L		97	80 - 135
Trichlorofluoromethane	20.0	17.7		ug/L		88	75 - 140
1,2,3-Trichloropropane	20.0	17.8		ug/L		89	75 - 125
Vinyl chloride	20.0	21.4		ug/L		107	75 - 135

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*84*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 250-25849/4
Matrix: Water
Analysis Batch: 25849

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromobenzene	20.0	22.5		ug/L		112	75 - 120	9	25
Bromodichloromethane	20.0	19.4		ug/L		97	80 - 130	6	25
Bromoform	20.0	20.8		ug/L		104	55 - 135	9	25
Bromomethane	20.0	18.9		ug/L		94	35 - 150	3	25

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

Lab Sample ID: LCSD 250-25849/4
Matrix: Water
Analysis Batch: 25849

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Carbon tetrachloride	20.0	21.3		ug/L		107	70 - 135	4	25
Chlorobenzene	20.0	20.6		ug/L		103	80 - 125	5	25
Chloroethane	20.0	18.1		ug/L		91	75 - 125	7	25
Chloroform	20.0	19.6		ug/L		98	80 - 120	6	25
Chloromethane	20.0	20.1		ug/L		101	45 - 150	8	25
Dibromochloromethane	20.0	19.9		ug/L		100	65 - 140	7	25
1,2-Dibromoethane	20.0	17.8		ug/L		89	80 - 125	4	
Dibromomethane	20.0	18.1		ug/L		91	80 - 120	4	25
1,2-Dichlorobenzene	20.0	20.9		ug/L		104	80 - 120	6	25
1,3-Dichlorobenzene	20.0	21.4		ug/L		107	75 - 125	6	25
1,4-Dichlorobenzene	20.0	21.4		ug/L		107	70 - 120	6	25
Dichlorodifluoromethane	20.0	21.2		ug/L		106	45 - 140	8	25
1,1-Dichloroethane	20.0	18.9		ug/L		95	80 - 120	4	25
1,2-Dichloroethane	20.0	16.8		ug/L		84	75 - 125	7	25
1,1-Dichloroethene	20.0	18.0		ug/L		90	75 - 120	5	25
cis-1,2-Dichloroethene	20.0	19.6		ug/L		98	80 - 120	4	25
trans-1,2-Dichloroethene	20.0	20.4		ug/L		102	80 - 120	6	25
1,2-Dichloropropane	20.0	20.0		ug/L		100	80 - 130	5	25
cis-1,3-Dichloropropene	20.0	19.5		ug/L		97	80 - 125	6	25
trans-1,3-Dichloropropene	20.0	18.8		ug/L		94	80 - 130	8	25
Methylene Chloride	20.0	19.6		ug/L		98	80 - 120	8	25
1,1,1,2-Tetrachloroethane	20.0	21.8		ug/L		109	65 - 140	6	25
1,1,2,2-Tetrachloroethane	20.0	20.6		ug/L		103	75 - 130	10	25
Tetrachloroethene	20.0	20.8		ug/L		104	80 - 125	2	25
1,1,1-Trichloroethane	20.0	20.3		ug/L		101	75 - 135	5	25
1,1,2-Trichloroethane	20.0	18.8		ug/L		94	80 - 125	6	25
Trichloroethene	20.0	20.4		ug/L		102	80 - 135	5	25
Trichlorofluoromethane	20.0	16.5		ug/L		83	75 - 140	7	25
1,2,3-Trichloropropane	20.0	18.6		ug/L		93	75 - 125	4	25
Vinyl chloride	20.0	19.6		ug/L		98	75 - 135	8	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*86*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: MB 250-25923/7
Matrix: Water
Analysis Batch: 25923

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromobenzene	ND		0.50		ug/L			04/04/14 11:22	1
Bromodichloromethane	ND		0.50		ug/L			04/04/14 11:22	1
Bromoform	ND		1.0		ug/L			04/04/14 11:22	1
Bromomethane	ND		5.0		ug/L			04/04/14 11:22	1
Carbon tetrachloride	ND		0.50		ug/L			04/04/14 11:22	1
Chlorobenzene	ND		0.50		ug/L			04/04/14 11:22	1

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

Lab Sample ID: MB 250-25923/7
Matrix: Water
Analysis Batch: 25923

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	ND		0.50		ug/L			04/04/14 11:22	1
Chloroform	ND		0.50		ug/L			04/04/14 11:22	1
Chloromethane	ND		5.0		ug/L			04/04/14 11:22	1
Dibromochloromethane	ND		1.0		ug/L			04/04/14 11:22	1
1,2-Dibromoethane	ND		0.50		ug/L			04/04/14 11:22	1
Dibromomethane	ND		0.50		ug/L			04/04/14 11:22	1
1,2-Dichlorobenzene	ND		0.50		ug/L			04/04/14 11:22	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/04/14 11:22	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/04/14 11:22	1
Dichlorodifluoromethane	ND		5.0		ug/L			04/04/14 11:22	1
1,1-Dichloroethane	ND		0.50		ug/L			04/04/14 11:22	1
1,2-Dichloroethane	ND		0.50		ug/L			04/04/14 11:22	1
1,1-Dichloroethene	ND		0.50		ug/L			04/04/14 11:22	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			04/04/14 11:22	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			04/04/14 11:22	1
1,2-Dichloropropane	ND		0.50		ug/L			04/04/14 11:22	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/04/14 11:22	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/04/14 11:22	1
Methylene Chloride	ND		5.0		ug/L			04/04/14 11:22	1
1,1,1,2-Tetrachloroethane	ND		0.50		ug/L			04/04/14 11:22	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			04/04/14 11:22	1
Tetrachloroethene	ND		0.50		ug/L			04/04/14 11:22	1
1,1,1-Trichloroethane	ND		0.50		ug/L			04/04/14 11:22	1
1,1,2-Trichloroethane	ND		0.50		ug/L			04/04/14 11:22	1
Trichloroethene	ND		0.50		ug/L			04/04/14 11:22	1
Trichlorofluoromethane	ND		0.50		ug/L			04/04/14 11:22	1
1,2,3-Trichloropropane	ND		0.50		ug/L			04/04/14 11:22	1
Vinyl chloride	ND		0.50		ug/L			04/04/14 11:22	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*04/04/14 11:22*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*04/04/14 11:22*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*04/04/14 11:22*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*04/04/14 11:22*	*1*

Lab Sample ID: LCS 250-25923/4
Matrix: Water
Analysis Batch: 25923

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	20.0	20.3		ug/L		102	75 - 120
Bromodichloromethane	20.0	20.1		ug/L		100	80 - 130
Bromoform	20.0	21.2		ug/L		106	55 - 135
Bromomethane	20.0	17.8		ug/L		89	35 - 150
Carbon tetrachloride	20.0	20.5		ug/L		102	70 - 135
Chlorobenzene	20.0	20.2		ug/L		101	80 - 125
Chloroethane	20.0	17.6		ug/L		88	75 - 125
Chloroform	20.0	19.3		ug/L		97	80 - 120

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

Lab Sample ID: LCS 250-25923/4
Matrix: Water
Analysis Batch: 25923

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloromethane	20.0	23.6		ug/L		118	45 - 150
Dibromochloromethane	20.0	20.9		ug/L		105	65 - 140
1,2-Dibromoethane	20.0	20.2		ug/L		101	80 - 125
Dibromomethane	20.0	19.5		ug/L		98	80 - 120
1,2-Dichlorobenzene	20.0	19.7		ug/L		98	80 - 120
1,3-Dichlorobenzene	20.0	19.7		ug/L		98	75 - 125
1,4-Dichlorobenzene	20.0	19.5		ug/L		97	70 - 120
Dichlorodifluoromethane	20.0	22.7		ug/L		113	45 - 140
1,1-Dichloroethane	20.0	19.3		ug/L		96	80 - 120
1,2-Dichloroethane	20.0	19.5		ug/L		97	75 - 125
1,1-Dichloroethene	20.0	19.5		ug/L		97	75 - 120
cis-1,2-Dichloroethene	20.0	19.1		ug/L		95	80 - 120
trans-1,2-Dichloroethene	20.0	19.0		ug/L		95	80 - 120
1,2-Dichloropropane	20.0	19.3		ug/L		97	80 - 130
cis-1,3-Dichloropropene	20.0	21.4		ug/L		107	80 - 125
trans-1,3-Dichloropropene	20.0	19.9		ug/L		100	80 - 130
Methylene Chloride	20.0	19.3		ug/L		96	80 - 120
1,1,1,2-Tetrachloroethane	20.0	20.4		ug/L		102	65 - 140
1,1,2,2-Tetrachloroethane	20.0	20.7		ug/L		103	75 - 130
Tetrachloroethene	20.0	19.4		ug/L		97	80 - 125
1,1,1-Trichloroethane	20.0	20.3		ug/L		102	75 - 135
1,1,2-Trichloroethane	20.0	19.3		ug/L		96	80 - 125
Trichloroethene	20.0	19.1		ug/L		95	80 - 135
Trichlorofluoromethane	20.0	19.6		ug/L		98	75 - 140
1,2,3-Trichloropropane	20.0	20.2		ug/L		101	75 - 125
Vinyl chloride	20.0	23.8		ug/L		119	75 - 135

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 250-25923/5
Matrix: Water
Analysis Batch: 25923

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromobenzene	20.0	20.0		ug/L		100	75 - 120	2	25
Bromodichloromethane	20.0	19.7		ug/L		98	80 - 130	2	25
Bromoform	20.0	22.0		ug/L		110	55 - 135	4	25
Bromomethane	20.0	18.2		ug/L		91	35 - 150	2	25
Carbon tetrachloride	20.0	19.7		ug/L		98	70 - 135	4	25
Chlorobenzene	20.0	19.4		ug/L		97	80 - 125	4	25
Chloroethane	20.0	19.6		ug/L		98	75 - 125	11	25
Chloroform	20.0	18.7		ug/L		93	80 - 120	3	25
Chloromethane	20.0	22.8		ug/L		114	45 - 150	4	25
Dibromochloromethane	20.0	20.1		ug/L		100	65 - 140	4	25

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

Lab Sample ID: LCSD 250-25923/5
Matrix: Water
Analysis Batch: 25923

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane			20.0	20.1		ug/L		101	80 - 125	1	
Dibromomethane			20.0	19.2		ug/L		96	80 - 120	2	25
1,2-Dichlorobenzene			20.0	19.4		ug/L		97	80 - 120	1	25
1,3-Dichlorobenzene			20.0	23.5		ug/L		117	75 - 125	17	25
1,4-Dichlorobenzene			20.0	22.7		ug/L		114	70 - 120	15	25
Dichlorodifluoromethane			20.0	22.1		ug/L		111	45 - 140	2	25
1,1-Dichloroethane			20.0	18.7		ug/L		94	80 - 120	3	25
1,2-Dichloroethane			20.0	19.2		ug/L		96	75 - 125	1	25
1,1-Dichloroethene			20.0	19.2		ug/L		96	75 - 120	2	25
cis-1,2-Dichloroethene			20.0	19.0		ug/L		95	80 - 120	1	25
trans-1,2-Dichloroethene			20.0	18.3		ug/L		92	80 - 120	4	25
1,2-Dichloropropane			20.0	18.9		ug/L		94	80 - 130	2	25
cis-1,3-Dichloropropene			20.0	21.1		ug/L		105	80 - 125	1	25
trans-1,3-Dichloropropene			20.0	19.3		ug/L		96	80 - 130	3	25
Methylene Chloride			20.0	19.0		ug/L		95	80 - 120	1	25
1,1,1,2-Tetrachloroethane			20.0	20.1		ug/L		100	65 - 140	2	25
1,1,2,2-Tetrachloroethane			20.0	20.8		ug/L		104	75 - 130	1	25
Tetrachloroethene			20.0	18.9		ug/L		95	80 - 125	2	25
1,1,1-Trichloroethane			20.0	19.8		ug/L		99	75 - 135	3	25
1,1,2-Trichloroethane			20.0	19.4		ug/L		97	80 - 125	1	25
Trichloroethene			20.0	18.5		ug/L		92	80 - 135	3	25
Trichlorofluoromethane			20.0	19.5		ug/L		97	75 - 140	1	25
1,2,3-Trichloropropane			20.0	20.4		ug/L		102	75 - 125	1	25
Vinyl chloride			20.0	20.7		ug/L		103	75 - 135	14	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Certification Summary

Client: Apex Companies LLC
Project/Site: Regency Cascade Plaza

TestAmerica Job ID: 250-18154-1
SDG: 11277.199

Laboratory: TestAmerica Portland

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-012	12-26-13 *
California	State Program	9	2597	09-30-15
Oregon	NELAP	10	OR100021	01-09-15
USDA	Federal		P330-11-00092	02-17-14 *
Washington	State Program	10	C586	06-23-14

* Expired certification is currently pending renewal and is considered valid.

Method Summary

Client: Apex Companies LLC
Project/Site: Regency Cascade Plaza

TestAmerica Job ID: 250-18154-1
SDG: 11277.199

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PRT

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PRT = TestAmerica Portland, 9405 SW Nimbus Ave., Beaverton, OR 97008, TEL (503)906-9200

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N
11922 E. I
9405 SW Nim
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210
420-9210
924-9290
906-9210

250-18154 Chain of Custody

CHAIN OF CUSTODY REPORT

Work Order #:

CLIENT: APEX COMPANIES, LLC

REPORT TO: MARK HAVIGHORST
ADDRESS: 3015 SW 1ST AVE
PORTLAND, OR 97201
PHONE: (503) 924-4704 FAX:

INVOICE TO:

P.O. NUMBER:

PROJECT NAME: REGENCY ~~INGLEWOOD~~ MW CASCADE PLAZA
PROJECT NUMBER: 11277.199
SAMPLED BY: MIKE WHITSON

TURNAROUND REQUEST
in Business Days *
Organic & Inorganic Analyses: [X] STD. | 7 | 5 | 4 | 3 | 2 | 1 | <1
Petroleum Hydrocarbon Analyses: [X] STD. | 4 | 3 | 2 | 1 | <1
[ ] ~~OTHER~~ Specify: STANDARD
* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PRESERVATIVE: HCl	REQUESTED ANALYSES: HVOCs (8260B)	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1	MW-1	03-27-14 / 1030	X	X	W	3		
2	MW-2	03-27-14 / 1105	X	X	W	3		
3	MW-2 DUP	03-27-14 / 1105	X	X	W	3		
4	MW-3	03-27-14 / 1130	X	X	W	3		
5	MW-4	03-27-14 / 1200	X	X	W	3		
6	TRIP BLANK	--	X	X	W	1		
7								
8								
9								
10								

RELEASED BY: MIKE WHITSON DATE: 04-01-14
PRINT NAME: MIKE WHITSON FIRM: APEX COS. TIME: 1430

RECEIVED BY: Phil Shabel DATE: 4/1/14
PRINT NAME: Phil Shabel FIRM: TAP TIME: 1430

RELEASED BY: DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY: DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:

TEMP: 4.0

PAGE 1 OF 1

TAL-1000(0408)

ICE

4/8/2014

Login Sample Receipt Checklist

Client: Apex Companies LLC

Job Number: 250-18154-1
SDG Number: 11277.199

Login Number: 18154
List Number: 1
Creator: Svabik-Seror, Philip M

List Source: TestAmerica Portland

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

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10/20/2013
Mr. Mark Havighorst
Apex Companies, LLC (formerly Ash Creek Associates)
3015 SW 1st Avenue

Portland OR 97201

Project Name: Cascade Plaza
Project #: 11277.181
Workorder #: 1310200

Dear Mr. Mark Havighorst

The following report includes the data for the above referenced project for sample(s) received on 10/9/2013 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1310200

Work Order Summary

CLIENT:	Mr. Mark Havighorst Apex Companies, LLC (formerly Ash Creek Associates) 3015 SW 1st Avenue Portland, OR 97201	**BILL TO:**	Mr. Mark Havighorst Apex Companies, LLC (formerly Ash Creek Associates) 3015 SW 1st Avenue Portland, OR 97201
PHONE:	503-924-4704	**P.O. #**	
FAX:	503-924-4707	**PROJECT #**	11277.181 Cascade Plaza
DATE RECEIVED:	10/09/2013	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	10/20/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	VS-1	Modified TO-15	5.3 "Hg	5.1 psi
02A	VS-2	Modified TO-15	2.8 "Hg	5.2 psi
03A	Lab Blank	Modified TO-15	NA	NA
04A	CCV	Modified TO-15	NA	NA
05A	LCS	Modified TO-15	NA	NA
05AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 10/20/13

Technical Director

Certification numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-12-5, UT NELAP CA009332012-3, VA NELAP - 460197, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2012, Expiration date: 10/17/2013.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.

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
Apex Companies, LLC (formerly Ash Creek Associates)
Workorder# 1310200

Two 6 Liter Summa Canister samples were received on October 09, 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

Dilution was performed on samples VS-1 and VS-2 due to the presence of high level target species.

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: VS-1

Lab ID#: 1310200-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	6.6	21	12	40
2-Butanone (Methyl Ethyl Ketone)	6.6	6.5 J	19	19 J
Tetrahydrofuran	1.6	3.0	4.8	9.0
Toluene	1.6	5.8	6.2	22
Tetrachloroethene	1.6	370	11	2500

Client Sample ID: VS-2

Lab ID#: 1310200-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	10	11	19	21
Tetrahydrofuran	2.5	4.1	7.4	12
Toluene	2.5	4.5	9.4	17
Tetrachloroethene	2.5	520	17	3600

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Client Sample ID: VS-1

Lab ID#: 1310200-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101617**	**Date of Collection:**	**10/4/13 11:51:00 AM**
Dil. Factor:	**3.28**	**Date of Analysis:**	**10/16/13 07:00 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.6	Not Detected	8.1	Not Detected
Freon 114	1.6	Not Detected	11	Not Detected
Chloromethane	16	Not Detected	34	Not Detected
Vinyl Chloride	1.6	Not Detected	4.2	Not Detected
1,3-Butadiene	1.6	Not Detected	3.6	Not Detected
Bromomethane	16	Not Detected	64	Not Detected
Chloroethane	6.6	Not Detected	17	Not Detected
Freon 11	1.6	Not Detected	9.2	Not Detected
Ethanol	6.6	21	12	40
Freon 113	1.6	Not Detected	12	Not Detected
1,1-Dichloroethene	1.6	Not Detected	6.5	Not Detected
Acetone	16	Not Detected	39	Not Detected
2-Propanol	6.6	Not Detected	16	Not Detected
Carbon Disulfide	6.6	Not Detected	20	Not Detected
3-Chloropropene	6.6	Not Detected	20	Not Detected
Methylene Chloride	16	Not Detected	57	Not Detected
Methyl tert-butyl ether	1.6	Not Detected	5.9	Not Detected
trans-1,2-Dichloroethene	1.6	Not Detected	6.5	Not Detected
Hexane	1.6	Not Detected	5.8	Not Detected
1,1-Dichloroethane	1.6	Not Detected	6.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	6.6	6.5 J	19	19 J
cis-1,2-Dichloroethene	1.6	Not Detected	6.5	Not Detected
Tetrahydrofuran	1.6	3.0	4.8	9.0
Chloroform	1.6	Not Detected	8.0	Not Detected
1,1,1-Trichloroethane	1.6	Not Detected	8.9	Not Detected
Cyclohexane	1.6	Not Detected	5.6	Not Detected
Carbon Tetrachloride	1.6	Not Detected	10	Not Detected
2,2,4-Trimethylpentane	1.6	Not Detected	7.7	Not Detected
Benzene	1.6	Not Detected	5.2	Not Detected
1,2-Dichloroethane	1.6	Not Detected	6.6	Not Detected
Heptane	1.6	Not Detected	6.7	Not Detected
Trichloroethene	1.6	Not Detected	8.8	Not Detected
1,2-Dichloropropane	1.6	Not Detected	7.6	Not Detected
1,4-Dioxane	6.6	Not Detected	24	Not Detected
Bromodichloromethane	1.6	Not Detected	11	Not Detected
cis-1,3-Dichloropropene	1.6	Not Detected	7.4	Not Detected
4-Methyl-2-pentanone	1.6	Not Detected	6.7	Not Detected
Toluene	1.6	5.8	6.2	22
trans-1,3-Dichloropropene	1.6	Not Detected	7.4	Not Detected
1,1,2-Trichloroethane	1.6	Not Detected	8.9	Not Detected
Tetrachloroethene	1.6	370	11	2500
2-Hexanone	6.6	Not Detected	27	Not Detected

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Client Sample ID: VS-1

Lab ID#: 1310200-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101617**	**Date of Collection:**	**10/4/13 11:51:00 AM**
Dil. Factor:	**3.28**	**Date of Analysis:**	**10/16/13 07:00 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.6	Not Detected	14	Not Detected
1,2-Dibromoethane (EDB)	1.6	Not Detected	13	Not Detected
Chlorobenzene	1.6	Not Detected	7.6	Not Detected
Ethyl Benzene	1.6	Not Detected	7.1	Not Detected
m,p-Xylene	1.6	Not Detected	7.1	Not Detected
o-Xylene	1.6	Not Detected	7.1	Not Detected
Styrene	1.6	Not Detected	7.0	Not Detected
Bromoform	1.6	Not Detected	17	Not Detected
Cumene	1.6	Not Detected	8.1	Not Detected
1,1,2,2-Tetrachloroethane	1.6	Not Detected	11	Not Detected
Propylbenzene	1.6	Not Detected	8.1	Not Detected
4-Ethyltoluene	1.6	Not Detected	8.1	Not Detected
1,3,5-Trimethylbenzene	1.6	Not Detected	8.1	Not Detected
1,2,4-Trimethylbenzene	1.6	Not Detected	8.1	Not Detected
1,3-Dichlorobenzene	1.6	Not Detected	9.9	Not Detected
1,4-Dichlorobenzene	1.6	Not Detected	9.9	Not Detected
alpha-Chlorotoluene	1.6	Not Detected	8.5	Not Detected
1,2-Dichlorobenzene	1.6	Not Detected	9.9	Not Detected
1,2,4-Trichlorobenzene	6.6	Not Detected	49	Not Detected
Hexachlorobutadiene	6.6	Not Detected	70	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	85	70-130
4-Bromofluorobenzene	84	70-130

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Client Sample ID: VS-2

Lab ID#: 1310200-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101618**	**Date of Collection:**	**10/4/13 11:52:00 AM**
Dil. Factor:	**5.00**	**Date of Analysis:**	**10/16/13 07:18 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	2.5	Not Detected	12	Not Detected
Freon 114	2.5	Not Detected	17	Not Detected
Chloromethane	25	Not Detected	52	Not Detected
Vinyl Chloride	2.5	Not Detected	6.4	Not Detected
1,3-Butadiene	2.5	Not Detected	5.5	Not Detected
Bromomethane	25	Not Detected	97	Not Detected
Chloroethane	10	Not Detected	26	Not Detected
Freon 11	2.5	Not Detected	14	Not Detected
Ethanol	10	11	19	21
Freon 113	2.5	Not Detected	19	Not Detected
1,1-Dichloroethene	2.5	Not Detected	9.9	Not Detected
Acetone	25	Not Detected	59	Not Detected
2-Propanol	10	Not Detected	24	Not Detected
Carbon Disulfide	10	Not Detected	31	Not Detected
3-Chloropropene	10	Not Detected	31	Not Detected
Methylene Chloride	25	Not Detected	87	Not Detected
Methyl tert-butyl ether	2.5	Not Detected	9.0	Not Detected
trans-1,2-Dichloroethene	2.5	Not Detected	9.9	Not Detected
Hexane	2.5	Not Detected	8.8	Not Detected
1,1-Dichloroethane	2.5	Not Detected	10	Not Detected
2-Butanone (Methyl Ethyl Ketone)	10	Not Detected	29	Not Detected
cis-1,2-Dichloroethene	2.5	Not Detected	9.9	Not Detected
Tetrahydrofuran	2.5	4.1	7.4	12
Chloroform	2.5	Not Detected	12	Not Detected
1,1,1-Trichloroethane	2.5	Not Detected	14	Not Detected
Cyclohexane	2.5	Not Detected	8.6	Not Detected
Carbon Tetrachloride	2.5	Not Detected	16	Not Detected
2,2,4-Trimethylpentane	2.5	Not Detected	12	Not Detected
Benzene	2.5	Not Detected	8.0	Not Detected
1,2-Dichloroethane	2.5	Not Detected	10	Not Detected
Heptane	2.5	Not Detected	10	Not Detected
Trichloroethene	2.5	Not Detected	13	Not Detected
1,2-Dichloropropane	2.5	Not Detected	12	Not Detected
1,4-Dioxane	10	Not Detected	36	Not Detected
Bromodichloromethane	2.5	Not Detected	17	Not Detected
cis-1,3-Dichloropropene	2.5	Not Detected	11	Not Detected
4-Methyl-2-pentanone	2.5	Not Detected	10	Not Detected
Toluene	2.5	4.5	9.4	17
trans-1,3-Dichloropropene	2.5	Not Detected	11	Not Detected
1,1,2-Trichloroethane	2.5	Not Detected	14	Not Detected
Tetrachloroethene	2.5	520	17	3600
2-Hexanone	10	Not Detected	41	Not Detected

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Client Sample ID: VS-2

Lab ID#: 1310200-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101618**	**Date of Collection:**	**10/4/13 11:52:00 AM**
Dil. Factor:	**5.00**	**Date of Analysis:**	**10/16/13 07:18 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	2.5	Not Detected	21	Not Detected
1,2-Dibromoethane (EDB)	2.5	Not Detected	19	Not Detected
Chlorobenzene	2.5	Not Detected	12	Not Detected
Ethyl Benzene	2.5	Not Detected	11	Not Detected
m,p-Xylene	2.5	Not Detected	11	Not Detected
o-Xylene	2.5	Not Detected	11	Not Detected
Styrene	2.5	Not Detected	11	Not Detected
Bromoform	2.5	Not Detected	26	Not Detected
Cumene	2.5	Not Detected	12	Not Detected
1,1,2,2-Tetrachloroethane	2.5	Not Detected	17	Not Detected
Propylbenzene	2.5	Not Detected	12	Not Detected
4-Ethyltoluene	2.5	Not Detected	12	Not Detected
1,3,5-Trimethylbenzene	2.5	Not Detected	12	Not Detected
1,2,4-Trimethylbenzene	2.5	Not Detected	12	Not Detected
1,3-Dichlorobenzene	2.5	Not Detected	15	Not Detected
1,4-Dichlorobenzene	2.5	Not Detected	15	Not Detected
alpha-Chlorotoluene	2.5	Not Detected	13	Not Detected
1,2-Dichlorobenzene	2.5	Not Detected	15	Not Detected
1,2,4-Trichlorobenzene	10	Not Detected	74	Not Detected
Hexachlorobutadiene	10	Not Detected	110	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	88	70-130
4-Bromofluorobenzene	88	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1310200-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101608**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/16/13 02:52 PM**	

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#: 1310200-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101608**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/16/13 02:52 PM**	

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

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	93	70-130
4-Bromofluorobenzene	82	70-130

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Client Sample ID: CCV

Lab ID#: 1310200-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101602**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/16/13 10:52 AM**	

Compound	%Recovery
Freon 12	90
Freon 114	93
Chloromethane	86
Vinyl Chloride	97
1,3-Butadiene	85
Bromomethane	103
Chloroethane	99
Freon 11	91
Ethanol	102
Freon 113	88
1,1-Dichloroethene	98
Acetone	93
2-Propanol	104
Carbon Disulfide	100
3-Chloropropene	104
Methylene Chloride	99
Methyl tert-butyl ether	90
trans-1,2-Dichloroethene	95
Hexane	89
1,1-Dichloroethane	92
2-Butanone (Methyl Ethyl Ketone)	98
cis-1,2-Dichloroethene	89
Tetrahydrofuran	97
Chloroform	89
1,1,1-Trichloroethane	89
Cyclohexane	92
Carbon Tetrachloride	88
2,2,4-Trimethylpentane	79
Benzene	103
1,2-Dichloroethane	107
Heptane	108
Trichloroethene	87
1,2-Dichloropropane	93
1,4-Dioxane	88
Bromodichloromethane	96
cis-1,3-Dichloropropene	100
4-Methyl-2-pentanone	88
Toluene	91
trans-1,3-Dichloropropene	105
1,1,2-Trichloroethane	102
Tetrachloroethene	94
2-Hexanone	102

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Client Sample ID: CCV

Lab ID#: 1310200-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101602**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/16/13 10:52 AM**	

Compound	%Recovery
Dibromochloromethane	112
1,2-Dibromoethane (EDB)	109
Chlorobenzene	96
Ethyl Benzene	102
m,p-Xylene	106
o-Xylene	95
Styrene	95
Bromoform	97
Cumene	100
1,1,2,2-Tetrachloroethane	109
Propylbenzene	104
4-Ethyltoluene	124
1,3,5-Trimethylbenzene	94
1,2,4-Trimethylbenzene	102
1,3-Dichlorobenzene	102
1,4-Dichlorobenzene	103
alpha-Chlorotoluene	99
1,2-Dichlorobenzene	101
1,2,4-Trichlorobenzene	88
Hexachlorobutadiene	77

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	89	70-130
4-Bromofluorobenzene	89	70-130

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Client Sample ID: LCS

Lab ID#: 1310200-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101603**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/16/13 11:37 AM**	

Compound	%Recovery	Method Limits
Freon 12	92	70-130
Freon 114	96	70-130
Chloromethane	90	70-130
Vinyl Chloride	94	70-130
1,3-Butadiene	84	70-130
Bromomethane	107	70-130
Chloroethane	99	70-130
Freon 11	92	70-130
Ethanol	89	70-130
Freon 113	94	70-130
1,1-Dichloroethene	108	70-130
Acetone	88	70-130
2-Propanol	103	70-130
Carbon Disulfide	120	70-130
3-Chloropropene	116	70-130
Methylene Chloride	94	70-130
Methyl tert-butyl ether	90	70-130
trans-1,2-Dichloroethene	100	70-130
Hexane	86	70-130
1,1-Dichloroethane	90	70-130
2-Butanone (Methyl Ethyl Ketone)	95	70-130
cis-1,2-Dichloroethene	86	70-130
Tetrahydrofuran	91	70-130
Chloroform	87	70-130
1,1,1-Trichloroethane	88	70-130
Cyclohexane	91	70-130
Carbon Tetrachloride	86	70-130
2,2,4-Trimethylpentane	74	70-130
Benzene	103	70-130
1,2-Dichloroethane	106	70-130
Heptane	101	70-130
Trichloroethene	90	70-130
1,2-Dichloropropane	92	70-130
1,4-Dioxane	90	70-130
Bromodichloromethane	98	70-130
cis-1,3-Dichloropropene	101	70-130
4-Methyl-2-pentanone	85	70-130
Toluene	92	70-130
trans-1,3-Dichloropropene	100	70-130
1,1,2-Trichloroethane	102	70-130
Tetrachloroethene	89	70-130
2-Hexanone	97	70-130

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Client Sample ID: LCS

Lab ID#: 1310200-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101603**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/16/13 11:37 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	109	70-130
1,2-Dibromoethane (EDB)	108	70-130
Chlorobenzene	94	70-130
Ethyl Benzene	99	70-130
m,p-Xylene	104	70-130
o-Xylene	92	70-130
Styrene	96	70-130
Bromoform	89	70-130
Cumene	100	70-130
1,1,2,2-Tetrachloroethane	109	70-130
Propylbenzene	105	70-130
4-Ethyltoluene	117	70-130
1,3,5-Trimethylbenzene	97	70-130
1,2,4-Trimethylbenzene	98	70-130
1,3-Dichlorobenzene	100	70-130
1,4-Dichlorobenzene	102	70-130
alpha-Chlorotoluene	96	70-130
1,2-Dichlorobenzene	100	70-130
1,2,4-Trichlorobenzene	90	70-130
Hexachlorobutadiene	78	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	85	70-130
4-Bromofluorobenzene	87	70-130

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Client Sample ID: LCSD

Lab ID#: 1310200-05AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101604**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/16/13 12:11 PM**	

Compound	%Recovery	Method Limits
Freon 12	97	70-130
Freon 114	101	70-130
Chloromethane	95	70-130
Vinyl Chloride	95	70-130
1,3-Butadiene	90	70-130
Bromomethane	112	70-130
Chloroethane	105	70-130
Freon 11	95	70-130
Ethanol	89	70-130
Freon 113	98	70-130
1,1-Dichloroethene	109	70-130
Acetone	91	70-130
2-Propanol	107	70-130
Carbon Disulfide	124	70-130
3-Chloropropene	115	70-130
Methylene Chloride	98	70-130
Methyl tert-butyl ether	90	70-130
trans-1,2-Dichloroethene	99	70-130
Hexane	86	70-130
1,1-Dichloroethane	92	70-130
2-Butanone (Methyl Ethyl Ketone)	100	70-130
cis-1,2-Dichloroethene	84	70-130
Tetrahydrofuran	92	70-130
Chloroform	88	70-130
1,1,1-Trichloroethane	86	70-130
Cyclohexane	91	70-130
Carbon Tetrachloride	89	70-130
2,2,4-Trimethylpentane	74	70-130
Benzene	103	70-130
1,2-Dichloroethane	104	70-130
Heptane	102	70-130
Trichloroethene	90	70-130
1,2-Dichloropropane	93	70-130
1,4-Dioxane	92	70-130
Bromodichloromethane	97	70-130
cis-1,3-Dichloropropene	102	70-130
4-Methyl-2-pentanone	87	70-130
Toluene	89	70-130
trans-1,3-Dichloropropene	97	70-130
1,1,2-Trichloroethane	99	70-130
Tetrachloroethene	90	70-130
2-Hexanone	93	70-130

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Client Sample ID: LCSD

Lab ID#: 1310200-05AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j101604**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/16/13 12:11 PM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	108	70-130
1,2-Dibromoethane (EDB)	103	70-130
Chlorobenzene	94	70-130
Ethyl Benzene	97	70-130
m,p-Xylene	105	70-130
o-Xylene	90	70-130
Styrene	94	70-130
Bromoform	90	70-130
Cumene	99	70-130
1,1,2,2-Tetrachloroethane	106	70-130
Propylbenzene	104	70-130
4-Ethyltoluene	103	70-130
1,3,5-Trimethylbenzene	100	70-130
1,2,4-Trimethylbenzene	98	70-130
1,3-Dichlorobenzene	100	70-130
1,4-Dichlorobenzene	102	70-130
alpha-Chlorotoluene	94	70-130
1,2-Dichlorobenzene	98	70-130
1,2,4-Trichlorobenzene	93	70-130
Hexachlorobutadiene	80	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	93	70-130
1,2-Dichloroethane-d4	88	70-130
4-Bromofluorobenzene	90	70-130

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12/16/2013
Mr. Mark Havighorst
Apex Companies, LLC (formerly Ash Creek Associates)
3015 SW 1st Avenue

Portland OR 97201

Project Name: Cascade Plaza
Project #: 11277.191
Workorder #: 1311532

Dear Mr. Mark Havighorst

The following report includes the data for the above referenced project for sample(s) received on 11/27/2013 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 #: 1311532

Work Order Summary

CLIENT:	Mr. Mark Havighorst Apex Companies, LLC (formerly Ash Creek Associates) 3015 SW 1st Avenue Portland, OR 97201	**BILL TO:**	Mr. Mark Havighorst Apex Companies, LLC (formerly Ash Creek Associates) 3015 SW 1st Avenue Portland, OR 97201
PHONE:	503-924-4704	**P.O. #**	
FAX:	503-924-4707	**PROJECT #**	11277.191 Cascade Plaza
DATE RECEIVED:	11/27/2013	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	12/16/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	AA-2	TO-15	5.7 "Hg	5 psi
02A	AA-3	TO-15	6.1 "Hg	5 psi
03A	VS-3	TO-15	0.8 psi	15.1 psi
04A	VS-4	TO-15	0.9 psi	15 psi
05A	Lab Blank	TO-15	NA	NA
06A	CCV	TO-15	NA	NA
07A	LCS	TO-15	NA	NA
07AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 12/16/13

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

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.

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
Apex Companies, LLC (formerly Ash Creek Associates)
Workorder# 1311532

Two 6 Liter Summa Canister and two 1 Liter Summa Canister samples were received on November 27, 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

The Summa canister for sample VS-4 was leaking upon arrival. The client was notified and the analysis proceeded. Reported analyte concentrations are considered to be estimated.

Analytical Notes

There were no analytical discrepancies.

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

Client Sample ID: AA-2

Lab ID#: 1311532-01A

No Detections Were Found.

Client Sample ID: AA-3

Lab ID#: 1311532-02A

No Detections Were Found.

Client Sample ID: VS-3

Lab ID#: 1311532-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	0.96	350	6.5	2400

Client Sample ID: VS-4

Lab ID#: 1311532-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	0.95	140	6.4	990

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Client Sample ID: AA-2

Lab ID#: 1311532-01A

EPA METHOD TO-15 GC/MS

File Name:	**p121110**	**Date of Collection: 11/20/13 7:16:00 PM**	
Dil. Factor:	**1.66**	**Date of Analysis: 12/11/13 03:38 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.83	Not Detected	2.1	Not Detected
cis-1,2-Dichloroethene	0.83	Not Detected	3.3	Not Detected
Trichloroethene	0.83	Not Detected	4.5	Not Detected
Tetrachloroethene	0.83	Not Detected	5.6	Not Detected
trans-1,2-Dichloroethene	0.83	Not Detected	3.3	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: AA-3

Lab ID#: 1311532-02A

EPA METHOD TO-15 GC/MS

File Name:	**p121111**	**Date of Collection: 11/20/13 7:14:00 PM**	
Dil. Factor:	**1.68**	**Date of Analysis: 12/11/13 04:14 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.84	Not Detected	2.1	Not Detected
cis-1,2-Dichloroethene	0.84	Not Detected	3.3	Not Detected
Trichloroethene	0.84	Not Detected	4.5	Not Detected
Tetrachloroethene	0.84	Not Detected	5.7	Not Detected
trans-1,2-Dichloroethene	0.84	Not Detected	3.3	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: VS-3

Lab ID#: 1311532-03A

EPA METHOD TO-15 GC/MS

File Name:	**p121112**	**Date of Collection:**	**11/20/13 12:06:00 P**
Dil. Factor:	**1.92**	**Date of Analysis:**	**12/11/13 04:51 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.96	Not Detected	2.4	Not Detected
cis-1,2-Dichloroethene	0.96	Not Detected	3.8	Not Detected
Trichloroethene	0.96	Not Detected	5.2	Not Detected
Tetrachloroethene	0.96	350	6.5	2400
trans-1,2-Dichloroethene	0.96	Not Detected	3.8	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: VS-4

Lab ID#: 1311532-04A

EPA METHOD TO-15 GC/MS

File Name:	**p121113**	**Date of Collection: 11/20/13 12:24:00 P**	
Dil. Factor:	**1.90**	**Date of Analysis: 12/11/13 05:32 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.95	Not Detected	2.4	Not Detected
cis-1,2-Dichloroethene	0.95	Not Detected	3.8	Not Detected
Trichloroethene	0.95	Not Detected	5.1	Not Detected
Tetrachloroethene	0.95	140	6.4	990
trans-1,2-Dichloroethene	0.95	Not Detected	3.8	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	95	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1311532-05A

EPA METHOD TO-15 GC/MS

File Name:	**p121106**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/11/13 12:01 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: CCV

Lab ID#: 1311532-06A

EPA METHOD TO-15 GC/MS

File Name:	**p121102**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/11/13 09:10 AM**	

Compound	%Recovery
Vinyl Chloride	108
cis-1,2-Dichloroethene	100
Trichloroethene	96
Tetrachloroethene	94
trans-1,2-Dichloroethene	96

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: LCS

Lab ID#: 1311532-07A

EPA METHOD TO-15 GC/MS

File Name:	**p121103**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/11/13 09:47 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	106	70-130
cis-1,2-Dichloroethene	113	70-130
Trichloroethene	96	70-130
Tetrachloroethene	93	70-130
trans-1,2-Dichloroethene	85	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: LCSD

Lab ID#: 1311532-07AA

EPA METHOD TO-15 GC/MS

File Name:	**p121104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/11/13 10:06 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	100	70-130
cis-1,2-Dichloroethene	108	70-130
Trichloroethene	95	70-130
Tetrachloroethene	90	70-130
trans-1,2-Dichloroethene	85	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	97	70-130

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FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager Mark Havighorst

Collected by: (Print and Sign) Matt Fraser

Company Apex Companies, LLC Email MHavighorst@apexcos.com

Address 3015 SW FIRST AVE City PORTLAND State OR Zip 97201

Phone (503)924-4704 EXT 120 Fax (503)943-6357

Project Info:
P.O. #
Project # 11277.191
Project Name Cascade Plaza

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	AA-2	12679	11/20/2013	1126/1916	Halogenated VOCs (TO-15)	-23.5	-7.0		
02A	AA-3	12047	11/20/2013	1130/1914	Halogenated VOCs (TO-15)	-29	-6.0		
03A	VS-3	35628	11/20/2013	1205/1206	Halogenated VOCs (TO-15)	-28.5	-1.0		
04A	VS-4	24387	11/20/2013	1223/1224	Halogenated VOCs (TO-15)	-29	-1.0		

Relinquished by: (signature) Matt Fraser Apex Companies Date/Time 11/26/2013 @ 0930
Received by: (signature) ATL Date/Time 11/27/13 1015

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)	1311532

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12/26/2013
Mr. Mark Havighorst
Apex Companies, LLC (formerly Ash Creek Associates)
3015 SW 1st Avenue

Portland OR 97201

Project Name: Cascade Plaza
Project #: 11277.191
Workorder #: 1312165

Dear Mr. Mark Havighorst

The following report includes the data for the above referenced project for sample(s) received on 12/11/2013 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 #: 1312165

Work Order Summary

CLIENT:	Mr. Mark Havighorst Apex Companies, LLC (formerly Ash Creek Associates) 3015 SW 1st Avenue Portland, OR 97201	**BILL TO:**	Mr. Mark Havighorst Apex Companies, LLC (formerly Ash Creek Associates) 3015 SW 1st Avenue Portland, OR 97201
PHONE:	503-924-4704	**P.O. #**	
FAX:	503-924-4707	**PROJECT #**	11277.191 Cascade Plaza
DATE RECEIVED:	12/11/2013	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	12/26/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	VS-5	TO-15	4.5 "Hg	15 psi
02A	VS-6	TO-15	1.5 "Hg	15 psi
03A	VS-7	TO-15	1.0 "Hg	15 psi
04A	Lab Blank	TO-15	NA	NA
05A	CCV	TO-15	NA	NA
06A	LCS	TO-15	NA	NA
06AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 12/26/13

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

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LABORATORY NARRATIVE
EPA Method TO-15
Apex Companies, LLC (formerly Ash Creek Associates)
Workorder# 1312165

Three 1 Liter Summa Canister samples were received on December 11, 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

There were no analytical discrepancies.

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

Client Sample ID: VS-5

Lab ID#: 1312165-01A

No Detections Were Found.

Client Sample ID: VS-6

Lab ID#: 1312165-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	1.1	1.2	7.2	8.4

Client Sample ID: VS-7

Lab ID#: 1312165-03A

No Detections Were Found.

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Client Sample ID: VS-5

Lab ID#: 1312165-01A

EPA METHOD TO-15 GC/MS

File Name:	**j121821**	**Date of Collection: 12/6/13 11:44:00 AM**	
Dil. Factor:	**2.38**	**Date of Analysis: 12/18/13 09:56 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Trichloroethene	1.2	Not Detected	6.4	Not Detected
Tetrachloroethene	1.2	Not Detected	8.1	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.7	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	112	70-130

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Client Sample ID: VS-6

Lab ID#: 1312165-02A

EPA METHOD TO-15 GC/MS

File Name:	**j121822**	**Date of Collection: 12/6/13 12:01:00 PM**	
Dil. Factor:	**2.13**	**Date of Analysis: 12/18/13 10:17 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.7	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Trichloroethene	1.1	Not Detected	5.7	Not Detected
Tetrachloroethene	1.1	1.2	7.2	8.4
trans-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	112	70-130

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Client Sample ID: VS-7

Lab ID#: 1312165-03A

EPA METHOD TO-15 GC/MS

File Name:	**j121823**	**Date of Collection: 12/6/13 12:13:00 PM**	
Dil. Factor:	**2.09**	**Date of Analysis: 12/18/13 10:38 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.7	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Trichloroethene	1.0	Not Detected	5.6	Not Detected
Tetrachloroethene	1.0	Not Detected	7.1	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1312165-04A

EPA METHOD TO-15 GC/MS

File Name:	**j121809**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/13 01:41 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	104	70-130

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Client Sample ID: CCV

Lab ID#: 1312165-05A

EPA METHOD TO-15 GC/MS

File Name:	**j121802**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/13 09:22 AM**	

Compound	%Recovery
Vinyl Chloride	89
cis-1,2-Dichloroethene	89
Trichloroethene	95
Tetrachloroethene	88
trans-1,2-Dichloroethene	93

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	108	70-130

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Client Sample ID: LCS

Lab ID#: 1312165-06A

EPA METHOD TO-15 GC/MS

File Name:	**j121803**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/13 09:59 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	89	70-130
cis-1,2-Dichloroethene	96	70-130
Trichloroethene	96	70-130
Tetrachloroethene	84	70-130
trans-1,2-Dichloroethene	79	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	107	70-130
4-Bromofluorobenzene	107	70-130

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Client Sample ID: LCSD

Lab ID#: 1312165-06AA

EPA METHOD TO-15 GC/MS

File Name:	**j121804**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/13 10:36 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	92	70-130
cis-1,2-Dichloroethene	101	70-130
Trichloroethene	93	70-130
Tetrachloroethene	86	70-130
trans-1,2-Dichloroethene	80	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	110	70-130

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Project Manager Mark Harighorst

Collected by: (Print and Sign) Matt Fraser

Company Apex Companies LLC Email MHarighorst@apexcos.com

Address 3015 SW first Ave. City Portland State OR Zip 97201

Phone (503) 924-4704 ext 120 Fax (503) 943-6357

Project Info:
P.O. #
Project # 11277.191
Project Name Cascade Plaza

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	VS-5	36465	12/06/2013	1141/1144	Halogenated VOCs (TO-15)	-29	-4		
02A	VS-6	36501	12/06/2013	1158/1201	Halogenated VOCs (TO-15)	-30	-1		
03A	VS-7	34104	12/06/2013	1211/1213	Halogenated VOCs (TO-15)	-30	-1		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Matt Fraser	12/09/2013 @ 0914 Apex Companies		12.11.13 1055
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 #
	Fed Ex		4	Good	Yes No None	1312165

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12/26/2013
Mr. Mark Havighorst
Apex Companies, LLC (formerly Ash Creek Associates)
3015 SW 1st Avenue

Portland OR 97201

Project Name: Cascade Plaza
Project #: 11277.191
Workorder #: 1312167

Dear Mr. Mark Havighorst

The following report includes the data for the above referenced project for sample(s) received on 12/11/2013 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 SIM 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 #: 1312167

Work Order Summary

CLIENT:	Mr. Mark Havighorst Apex Companies, LLC (formerly Ash Creek Associates) 3015 SW 1st Avenue Portland, OR 97201	**BILL TO:**	Mr. Mark Havighorst Apex Companies, LLC (formerly Ash Creek Associates) 3015 SW 1st Avenue Portland, OR 97201
PHONE:	503-924-4704	**P.O. #**	
FAX:	503-924-4707	**PROJECT #**	11277.191 Cascade Plaza
DATE RECEIVED:	12/11/2013	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	12/26/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	AA-1	Modified TO-15 SIM	3.5 "Hg	5 psi
02A	Lab Blank	Modified TO-15 SIM	NA	NA
03A	CCV	Modified TO-15 SIM	NA	NA
04A	LCS	Modified TO-15 SIM	NA	NA
04AA	LCSD	Modified TO-15 SIM	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 12/26/13

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

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LABORATORY NARRATIVE
Modified TO-15 SIM
Apex Companies, LLC (formerly Ash Creek Associates)
Workorder# 1312167

One 6 Liter Summa Canister sample was received on December 11, 2013. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the SIM acquisition 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.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to < 40% RSD	Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

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
MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: AA-1

Lab ID#: 1312167-01A

No Detections Were Found.

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Client Sample ID: AA-1

Lab ID#: 1312167-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**c121907sim**	**Date of Collection: 12/6/13 3:57:00 PM**	
Dil. Factor:	**1.52**	**Date of Analysis: 12/19/13 01:12 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.015	Not Detected	0.039	Not Detected
cis-1,2-Dichloroethene	0.030	Not Detected	0.12	Not Detected
Trichloroethene	0.030	Not Detected	0.16	Not Detected
Tetrachloroethene	0.030	Not Detected	0.21	Not Detected
trans-1,2-Dichloroethene	0.15	Not Detected	0.60	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1312167-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**c121906sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/19/13 12:23 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
Trichloroethene	0.020	Not Detected	0.11	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	95	70-130

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Client Sample ID: CCV

Lab ID#: 1312167-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**c121902sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/19/13 09:30 AM**	

Compound	%Recovery
Vinyl Chloride	97
cis-1,2-Dichloroethene	102
Trichloroethene	88
Tetrachloroethene	101
trans-1,2-Dichloroethene	101

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: LCS

Lab ID#: 1312167-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**c121903sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/19/13 10:10 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	95	70-130
cis-1,2-Dichloroethene	121	70-130
Trichloroethene	91	70-130
Tetrachloroethene	105	70-130
trans-1,2-Dichloroethene	92	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	104	70-130

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Client Sample ID: LCSD

Lab ID#: 1312167-04AA

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**c121904sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/19/13 10:56 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	96	70-130
cis-1,2-Dichloroethene	122	70-130
Trichloroethene	91	70-130
Tetrachloroethene	104	70-130
trans-1,2-Dichloroethene	92	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	103	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 Mark Hanighorst

Collected by: (Print and Sign) Matt Fraser

Company Apex Companies, LLC Email MHanighorst@apexcos.com

Address 3015 SW First Ave City Portland State OR Zip 97201

Phone (503)924-4704 Ext 120 Fax (503)943-6357

Project Info:

P.O. #

Project # 11277.191

Project Name Cascade Plaza

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	AA-1	22510	~~07/57/1557~~ MF 0757/1557 12/06/2013	0757/1557	Halogenated VOCs (TO-15)	-28	-5		

Relinquished by: (signature) Date/Time
Matt Fraser Apex Companies 12/09/2013 0911

Received by: (signature) Date/Time
ATL 12/11/13 1055

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)	1312167

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1/8/2014

Mr. Mark Havighorst

Apex Companies, LLC (formerly Ash Creek Associates)

3015 SW 1st Avenue

Portland OR 97201

Project Name: Cascade Plaza

Project #: 11277.191

Workorder #: 1312444

Dear Mr. Mark Havighorst

The following report includes the data for the above referenced project for sample(s) received on 12/26/2013 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 #: 1312444

Work Order Summary

CLIENT:	Mr. Mark Havighorst Apex Companies, LLC (formerly Ash Creek Associates) 3015 SW 1st Avenue Portland, OR 97201	**BILL TO:**	Mr. Mark Havighorst Apex Companies, LLC (formerly Ash Creek Associates) 3015 SW 1st Avenue Portland, OR 97201
PHONE:	503-924-4704	**P.O. #**	
FAX:	503-924-4707	**PROJECT #**	11277.191 Cascade Plaza
DATE RECEIVED:	12/26/2013	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	01/08/2014		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	VS-8	TO-15	5.4 "Hg	15 psi
02A	VS-9	TO-15	1.0 "Hg	15 psi
03A	VS-10	TO-15	0.8 "Hg	15 psi
04A	VS-11	TO-15	0.0 "Hg	15 psi
05A	VS-12	TO-15	1.0 "Hg	15 psi
06A	VS-13	TO-15	0.0 "Hg	15 psi
07A	VS-14	TO-15	0.4 "Hg	15 psi
08A	VS-15	TO-15	0.4 "Hg	15 psi
09A	Lab Blank	TO-15	NA	NA
10A	CCV	TO-15	NA	NA
11A	LCS	TO-15	NA	NA
11AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 01/08/14

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

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LABORATORY NARRATIVE
EPA Method TO-15
Apex Companies, LLC (formerly Ash Creek Associates)
Workorder# 1312444

Eight 1 Liter Summa Canister samples were received on December 26, 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

There were no analytical discrepancies.

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

Client Sample ID: VS-8

Lab ID#: 1312444-01A

No Detections Were Found.

Client Sample ID: VS-9

Lab ID#: 1312444-02A

No Detections Were Found.

Client Sample ID: VS-10

Lab ID#: 1312444-03A

No Detections Were Found.

Client Sample ID: VS-11

Lab ID#: 1312444-04A

No Detections Were Found.

Client Sample ID: VS-12

Lab ID#: 1312444-05A

No Detections Were Found.

Client Sample ID: VS-13

Lab ID#: 1312444-06A

No Detections Were Found.

Client Sample ID: VS-14

Lab ID#: 1312444-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	1.0	1.8	5.5	10

Client Sample ID: VS-15

Lab ID#: 1312444-08A

No Detections Were Found.

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Client Sample ID: VS-8

Lab ID#: 1312444-01A

EPA METHOD TO-15 GC/MS

File Name:	**3123112**	**Date of Collection:**	**12/19/13 10:15:00 A**
Dil. Factor:	**2.46**	**Date of Analysis:**	**12/31/13 03:35 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.2	Not Detected	3.1	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.9	Not Detected
Trichloroethene	1.2	Not Detected	6.6	Not Detected
Tetrachloroethene	1.2	Not Detected	8.3	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.9	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: VS-9

Lab ID#: 1312444-02A

EPA METHOD TO-15 GC/MS

File Name:	**3123113**	**Date of Collection: 12/19/13 10:45:00 A**	
Dil. Factor:	**2.09**	**Date of Analysis: 12/31/13 04:07 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.7	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Trichloroethene	1.0	Not Detected	5.6	Not Detected
Tetrachloroethene	1.0	Not Detected	7.1	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: VS-10

Lab ID#: 1312444-03A

EPA METHOD TO-15 GC/MS

File Name:	**3123114**	**Date of Collection:**	**12/19/13 11:11:00 A**
Dil. Factor:	**2.08**	**Date of Analysis:**	**12/31/13 04:39 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Trichloroethene	1.0	Not Detected	5.6	Not Detected
Tetrachloroethene	1.0	Not Detected	7.0	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: VS-11

Lab ID#: 1312444-04A

EPA METHOD TO-15 GC/MS

File Name:	**3123115**	**Date of Collection:**	**12/19/13 11:32:00 A**
Dil. Factor:	**2.02**	**Date of Analysis:**	**12/31/13 05:16 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.0	Not Detected
Trichloroethene	1.0	Not Detected	5.4	Not Detected
Tetrachloroethene	1.0	Not Detected	6.8	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.0	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	91	70-130

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Client Sample ID: VS-12

Lab ID#: 1312444-05A

EPA METHOD TO-15 GC/MS

File Name:	**3123116**	**Date of Collection:**	**12/19/13 12:32:00 P**
Dil. Factor:	**2.09**	**Date of Analysis:**	**12/31/13 05:52 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.7	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Trichloroethene	1.0	Not Detected	5.6	Not Detected
Tetrachloroethene	1.0	Not Detected	7.1	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: VS-13

Lab ID#: 1312444-06A

EPA METHOD TO-15 GC/MS

File Name:	**3123117**	**Date of Collection: 12/19/13 12:49:00 P**	
Dil. Factor:	**2.02**	**Date of Analysis: 12/31/13 06:28 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.0	Not Detected
Trichloroethene	1.0	Not Detected	5.4	Not Detected
Tetrachloroethene	1.0	Not Detected	6.8	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.0	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: VS-14

Lab ID#: 1312444-07A

EPA METHOD TO-15 GC/MS

File Name:	**3123118**	**Date of Collection: 12/19/13 1:10:00 PM**	
Dil. Factor:	**2.05**	**Date of Analysis: 12/31/13 06:53 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Trichloroethene	1.0	1.8	5.5	10
Tetrachloroethene	1.0	Not Detected	7.0	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: VS-15

Lab ID#: 1312444-08A

EPA METHOD TO-15 GC/MS

File Name:	**3123119**	**Date of Collection:**	**12/19/13 1:38:00 PM**
Dil. Factor:	**2.05**	**Date of Analysis:**	**12/31/13 07:26 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Trichloroethene	1.0	Not Detected	5.5	Not Detected
Tetrachloroethene	1.0	Not Detected	7.0	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	94	70-130
4-Bromofluorobenzene	95	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1312444-09A

EPA METHOD TO-15 GC/MS

File Name:	**3123107**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/31/13 12:45 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: CCV

Lab ID#: 1312444-10A

EPA METHOD TO-15 GC/MS

File Name:	**3123102**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/31/13 08:59 AM**	

Compound	%Recovery
Vinyl Chloride	82
cis-1,2-Dichloroethene	92
Trichloroethene	92
Tetrachloroethene	97
trans-1,2-Dichloroethene	90

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: LCS

Lab ID#: 1312444-11A

EPA METHOD TO-15 GC/MS

File Name:	**3123103**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/31/13 09:39 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	84	70-130
cis-1,2-Dichloroethene	105	70-130
Trichloroethene	91	70-130
Tetrachloroethene	95	70-130
trans-1,2-Dichloroethene	79	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: LCSD

Lab ID#: 1312444-11AA

EPA METHOD TO-15 GC/MS

File Name:	**3123104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/31/13 10:11 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	84	70-130
cis-1,2-Dichloroethene	105	70-130
Trichloroethene	88	70-130
Tetrachloroethene	89	70-130
trans-1,2-Dichloroethene	78	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	94	70-130

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FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager Mark Harrighorst

Collected by: (Print and Sign) Matt Fraser

Company Apex Companies, LLC Email Mharrighorst@apexcos.com

Address 3015 SW First Ave City Portland State OR Zip 97201

Phone (503) 924-4704 EXT 120 Fax (503) 943-6357

Project Info:
P.O. #
Project # 11277.191
Project Name Cascade Plaza

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	VS-8	8011	12/19/13	1015	TO-15 HVOCs	-30	-6.5		
02A	VS-9	37675	12/19/13	1045	TO-15 HVOCs	-30	-2.5		
03A	VS-10	37403	12/19/13	1111	TO-15 HVOCs	-30	-2.5		
04A	VS-11	3004	12/19/13	1132	TO-15 HVOCs	-30	-1		
05A	VS-12	37359	12/19/13	1232	TO-15 HVOCs	-30	-2		
06A	VS-13	3026	12/19/13	1249	TO-15 HVOCs	-30	-1.5		
07A	VS-14	12368	12/19/13	1310	TO-15 HVOCs	-30	-2		
08A	VS-15	37800	12/19/13	1338	TO-15 HVOCs	-30	-2		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Matt Fraser Apex Companies	12/23/13 @ 0945	ATL	12/26/13 1015
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)	1312444

Form 1293 rev.11

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4/16/2014

Mr. Mark Havighorst

Apex Companies, LLC (formerly Ash Creek Associates)

3015 SW 1st Avenue

Portland OR 97201

Project Name: INGLEWOOD PLAZA

Project #: 11277.200

Workorder #: 1404071A

Dear Mr. Mark Havighorst

The following report includes the data for the above referenced project for sample(s) received on 4/3/2014 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 SIM 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 #: 1404071A

Work Order Summary

CLIENT:	Mr. Mark Havighorst Apex Companies, LLC (formerly Ash Creek Associates) 3015 SW 1st Avenue Portland, OR 97201	**BILL TO:**	Mr. Mark Havighorst Apex Companies, LLC (formerly Ash Creek Associates) 3015 SW 1st Avenue Portland, OR 97201
PHONE:	503-924-4704	**P.O. #**	
FAX:	503-924-4707	**PROJECT #**	11277.200 INGLEWOOD PLAZA
DATE RECEIVED:	04/03/2014	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	04/16/2014		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	AA-1	Modified TO-15 SIM	6.0 "Hg	5 psi
02A	AA-2	Modified TO-15 SIM	6.0 "Hg	5 psi
03A	OA-1	Modified TO-15 SIM	8.0 "Hg	5 psi
04A	Lab Blank	Modified TO-15 SIM	NA	NA
05A	CCV	Modified TO-15 SIM	NA	NA
06A	LCS	Modified TO-15 SIM	NA	NA
06AA	LCSD	Modified TO-15 SIM	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 04/16/14

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

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LABORATORY NARRATIVE
Modified TO-15 SIM
Apex Companies, LLC (formerly Ash Creek Associates)
Workorder# 1404071A

Three 6 Liter Summa Canister (SIM Certified) samples were received on April 03, 2014. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the SIM acquisition 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.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to < 40% RSD	Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Dilution was performed on samples AA-1 and AA-2 due to the presence of high level non-target species.

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
MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: AA-1

Lab ID#: 1404071A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	0.067	0.37	0.46	2.5

Client Sample ID: AA-2

Lab ID#: 1404071A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	0.067	0.51	0.46	3.4

Client Sample ID: OA-1

Lab ID#: 1404071A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	0.037	0.28	0.25	1.9

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Client Sample ID: AA-1

Lab ID#: 1404071A-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**e041118sim**	**Date of Collection: 3/28/14 4:45:00 PM**	
Dil. Factor:	**3.36**	**Date of Analysis: 4/11/14 09:45 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.034	Not Detected	0.086	Not Detected
cis-1,2-Dichloroethene	0.067	Not Detected	0.27	Not Detected
Trichloroethene	0.067	Not Detected	0.36	Not Detected
Tetrachloroethene	0.067	0.37	0.46	2.5

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: AA-2

Lab ID#: 1404071A-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**e041119sim**	**Date of Collection: 3/28/14 4:45:00 PM**	
Dil. Factor:	**3.36**	**Date of Analysis: 4/11/14 10:25 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.034	Not Detected	0.086	Not Detected
cis-1,2-Dichloroethene	0.067	Not Detected	0.27	Not Detected
Trichloroethene	0.067	Not Detected	0.36	Not Detected
Tetrachloroethene	0.067	0.51	0.46	3.4

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: OA-1

Lab ID#: 1404071A-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**e041120sim**	**Date of Collection: 3/28/14 4:45:00 PM**	
Dil. Factor:	**1.83**	**Date of Analysis: 4/11/14 11:07 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.018	Not Detected	0.047	Not Detected
cis-1,2-Dichloroethene	0.037	Not Detected	0.14	Not Detected
Trichloroethene	0.037	Not Detected	0.20	Not Detected
Tetrachloroethene	0.037	0.28	0.25	1.9

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1404071A-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**e041106sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/11/14 11:31 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
Trichloroethene	0.020	Not Detected	0.11	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: CCV

Lab ID#: 1404071A-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**e041102sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/11/14 08:32 AM**	

Compound	%Recovery
Vinyl Chloride	103
cis-1,2-Dichloroethene	110
Trichloroethene	89
Tetrachloroethene	97

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	105	70-130

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Client Sample ID: LCS

Lab ID#: 1404071A-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**e041103sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/11/14 09:16 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	107	70-130
cis-1,2-Dichloroethene	124	70-130
Trichloroethene	100	70-130
Tetrachloroethene	97	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	105	70-130

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Client Sample ID: LCSD

Lab ID#: 1404071A-06AA

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**e041104sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/11/14 10:01 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	104	70-130
cis-1,2-Dichloroethene	123	70-130
Trichloroethene	99	70-130
Tetrachloroethene	96	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	105	70-130

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CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
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Project Manager MARK HAVIGHORST

Collected by: (Print and Sign) MIKE WHITSON

Company APEX COMPANIES Email MHAVIGHORST@APEXLOS.COM

Address 3015 SW 1ST AVE City PORTLAND State OR Zip 97201

Phone (503) 924-4704 Fax

Project Info:

P.O. #

Project # 11277.200

Project Name INGLEWOOD PLAZA

Turn Around Time:

☑ Normal

☐ Rush

specify

Lab Use Only
Pressurized by: JL
Date: 4 3 14
Pressurization Gas: (N) 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	AA-1	30849 2560	03-28-14	0845-1645	TO-15	>-30	-7.5	60	30
02A	AA-2	34357	03-28-14	0845-1645	TO-15	>-30	-7.5	60	↓
03A	OA-1	944	03-28-14	0845-1645	TO-15	-23	-9	8.0	↓
~~04A~~	VS-5	356226	03-28-14	1020-1035	TO-15	-28	-3	25	15
~~05A~~	VS-6	IL1586	03-28-14	1020-1035	TO-15	-28	-3	35	↓

JM 12/14

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
[signature]	04-01-14/1100	[signature] ATT	4.3.14 1010
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	1404071

Form 1293 rev.11