VAPOR INTRUSION ASSESSMENT REPORT

Texaco Strickland Site

Prepared for: Strickland Real Estate Holdings, LLC

Project No. 180357 • March 28, 2022 • FINAL

Aspect CONSULTING

earth + water

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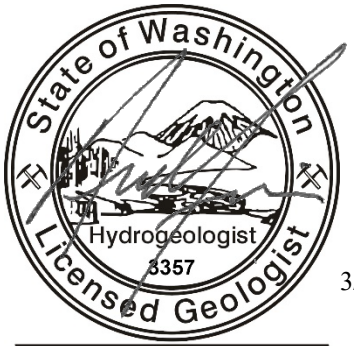

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Executive Summary

Aspect Consulting, LLC (Aspect) has prepared this Vapor Intrusion Assessment Report on behalf of Strickland Real Estate Holdings, LLC (SREH) to describe the results of a Tier II vapor intrusion assessment completed as part of the Remedial Investigation (RI) at the Texaco Strickland Cleanup Site (the Site), located at 6808 196th Street SW in Lynnwood, Washington (the Property; Figure 1). Two potentially liable parties (PLPs), SREH and Chevron Environmental Management Company (CEMC), entered into Agreed Order (AO) No. 14315 with the Washington State Department of Ecology (Ecology) on August 28, 2018.

The vapor intrusion pathway is being assessed as part of the AO-required remedial investigation (RI) being performed to characterize the Site. The vapor intrusion assessment has been an iterative process beginning with characterizing and delineating petroleum hydrocarbon impacts to Site soil and groundwater; collecting soil gas samples in areas of the Site where concentrations of petroleum hydrocarbons are present in soil or groundwater, which may volatilize into soil gas; and delineating petroleum hydrocarbon in soil gas at the Site.

Based on the results of the December 2021 Tier II vapor intrusion evaluation, the vapor intrusion pathway to indoor air quality at the south-adjacent Chri-Mar Apartments building does not appear to be complete. This conclusion is based on the following lines of evidence:

1. Primarily, neither total petroleum hydrocarbons (TPH) nor any individual analytes were detected in crawlspace air above their respective Model Toxics Control Act (MTCA) Method B indoor air cleanup levels considered by Ecology to be protective of indoor air exposure. The results from all three crawlspace air samples were consistent, and air-phase hydrocarbons were not detected in any of the samples and likely to not present an indoor air exposure risk.
2. TPH, naphthalene, and benzene were detected in indoor air at concentrations exceeding their respective MTCA Method B indoor cleanup levels in one or more units in the Chri-Mar Apartments building. However, when comparing the concentrations of these analytes in indoor air to crawlspace air below the units, each analyte was either not present in the crawlspace or detected at concentrations significantly greater than the corresponding crawlspace. This indicates that background sources within each unit contribute to the concentration measured in indoor air (i.e., these concentrations are not the result of migration of vapor from beneath the units).
3. The signature of the TPH mixture in soil gas as compared to indoor air does not match (i.e., the aliphatic and aromatic hydrocarbon fractions).
4. The range of TPH, benzene, and naphthalene concentrations measured in indoor air are well within the published range of potential background concentrations in indoor air from non-vapor intrusion background sources as documented in Ecology's guidance (Ecology, 2021).

Details regarding these investigation activities; analytical results from soil gas, ambient air, crawlspace air, and indoor air; and an assessment of the vapor intrusion pathway is summarized in this report.

This Executive Summary is intended for use only in the context of the full report.

1 Introduction

Aspect Consulting, LLC (Aspect) has prepared this Vapor Intrusion Assessment Report on behalf of Strickland Real Estate Holdings, LLC (SREH) to describe the results of a Tier II vapor intrusion assessment completed as part of the Remedial Investigation (RI) at the Texaco Strickland Cleanup Site (the Site), located at 6808 196th Street SW in Lynnwood, Washington (the Property; Figure 1). The Property is recorded by the Snohomish County Tax Assessor as tax parcel #27042000200600. Two potentially liable parties (PLPs), SREH and Chevron Environmental Management Company (CEMC), entered into Agreed Order (AO) No. 14315 with the Washington State Department of Ecology (Ecology) on August 28, 2018. On December 14, 2020, Ecology named Jiffy Lube International, Inc. (Jiffy Lube) as a PLP with regard to the Site.

The vapor intrusion pathway is being assessed as part of the RI being performed to characterize the Site. The vapor intrusion assessment has been an iterative process beginning with characterizing and delineating petroleum hydrocarbon impacts to Site soil and groundwater; collecting soil gas samples in areas of the Site where concentrations of petroleum hydrocarbons in soil or groundwater may volatilize into soil gas; and delineating petroleum hydrocarbon impacts to soil gas at the Site.

The purpose of this report is to:

1. Summarize the RI activities that have been performed to characterize impacts to Site soil gas.
2. Evaluate and report the results of recent crawlspace and air sampling performed to assess if the potential vapor intrusion exposure pathway at the south-adjacent Chri-Mar Apartments building is complete.

Additionally, Ecology issued updated draft guidance for assessing vapor intrusion in November 2021 (Ecology, 2021). As part of that update, the Model Toxics Control Act (MTCA) Method B generic indoor air cleanup levels and subslab soil gas screening levels for total petroleum hydrocarbons (TPH) were revised. This report re-evaluates existing Site data in context of these revised TPH cleanup and screening levels.

2 Previous Vapor Intrusion Assessment Investigations

This section summarizes previously reported vapor intrusion assessment activities and results conducted during implementation of the RI Work Plan (RIWP; Aspect, 2019) and RIWP Addendum (Aspect, 2020a).

2.1 July 2019 Remedial Investigation Work Plan Implementation

In June 2019, Aspect oversaw the installation of four soil gas probes (GP-01 through GP-04) at the Property (Figure 1). The gas probes were screened from 5 to 5.5 feet below ground surface (bgs). The soil gas probes were sealed, tested, and sampled in accordance with Appendix E of the RIWP in July 2019 (Aspect, 2019). No evidence of atmospheric dilution was detected in any of the soil gas samples.

Four soil gas samples were submitted to Friedman & Bruya, Inc. for analysis of the following:

- Benzene, toluene, ethylbenzene, and total xylenes (BTEX); 1,2-dibromethane (EDB); 1,2-dichloroethane (EDC); methyl tert-butyl ether (MTBE); and naphthalene by EPA Method TO-15
- Aliphatic and aromatic hydrocarbons by Massachusetts Department of Environmental Protection Air-Phase Petroleum Hydrocarbons (MA APH)

Soil gas sampling results are summarized in Table 1. The concentrations for TPH results were calculated as the sum of aliphatic hydrocarbons, aromatic hydrocarbons, and gasoline-range volatile organic compounds (VOCs), and the sum was compared to the generic MTCA Method B TPH subslab soil gas screening level.

TPH concentrations in soil gas exceeded the current generic MTCA Method B subslab soil gas screening level for unrestricted use at the four soil-gas probe sampling locations (GP-01 through GP-04).[1] Individual analytes, including carcinogenic compounds, were not detected above their respective MTCA Method B subslab soil gas screening levels. EDB, EDC, and MTBE were not detected in soil gas, had not been detected in soil or groundwater samples from the Site, and were therefore eliminated as potential contaminants of concern from the Site (Aspect, 2020).

To confirm these results, the PLPs proposed collecting another round of soil gas samples from the four gas probes as part of the RIWP Addendum (Aspect, 2020a).

[1] At the time, the generic subslab soil gas TPH screening level was based on the generic TPH indoor air cleanup level of 140 micrograms per cubic meter ($\mu g/m^3$) and an attenuation factor of 0.03 in accordance with Ecology's Implementation Memo No. 18 (Ecology, 2018). In November 2021, Ecology updated the generic TPH indoor air cleanup level to 46 $\mu g/m^3$, resulting in a generic subslab soil gas screening level of 1,500 $\mu g/m^3$ (Ecology, 2021). At the time of the evaluation in 2019, TPH only exceeded the 2018 subslab soil gas screening level at gas probe GP-03.

2.2 August 2020 Remedial Investigation Work Plan Addendum Results

Soil gas probes GP-01, GP-02, GP-03, and GP-04 were sampled again in August 2020. Soil gas sampling results are summarized in Table 1. The TPH concentration exceeded the MTCA Method B subslab soil gas screening level for unrestricted use at GP-02 and GP-03. Individual analytes, including carcinogenic compounds, were not detected above their respective MTCA Method B subslab soil gas screening levels (Table 1).

During the August 2020 sampling event, TPH concentrations in soil gas did not exceed the current generic MTCA Method B subslab screening level of 1,500 $\mu g/m^3$ at gas probes GP-01 or GP-04 (Table 1).

2.3 November 2020 Delineation of Site Soil Gas Impacts

The August 2020 soil gas sampling event confirmed the results of the July 2019 soil gas sampling event. The highest concentration of TPH was detected at soil gas probe GP-03 during both the July 2019 and August 2020 sampling events (Table 1). The exceedance of soil gas screening levels at GP-03 is outside the lateral extents of soil and groundwater impacts at the Site. The PLPs and Ecology considered two potential possibilities for this exceedance: a nearby utility corridor acting as a preferential vapor flow path or a potential secondary source in the vicinity of GP-03. Additional soil gas probes were installed and sampled in November 2020 to assess these possibilities, as described in the subsections below.

2.3.1 Additional Soil Gas Probe Installation

To assess the potential for the utility corridor, which contains both communications and electrical conduits for the Subject Property building, to act as a preferential flow path, the PLPs and Ecology agreed to install two additional soil gas probes as follows (Figure 1):

- GP-05 was installed in proximity to GP-03 but screened at a lower depth. Based on historical depth to water in nearby groundwater monitoring well MW-2, groundwater in the vicinity of GP-03 has varied between approximately 7 and 12 feet below ground surface (bgs). The objective of installing GP-05 at a greater depth was twofold:
    - Determine if a secondary source may exist in the vadose zone – soil samples were collected in accordance with the general procedures set forth in the RIWP and RIWP Addendum. Two soil samples across the length of the installation were submitted for laboratory analysis in accordance with the SAP/QAPP and RIWP Addendum.
    - Determine if the utility corridor is acting as a preferential flow path – the utility corridor in the vicinity of GP-03 has been estimated at a depth of 3.5 to 4.5 feet bgs by a private utility locator using electromagnetic techniques. In order to achieve vertical separation between the new gas probe GP-05 and the utility corridor/existing gas probe GP-03, the screen of gas probe GP-05 was set from 8 to 8.5 feet bgs.

- GP-06 was installed further along the utility corridor towards 68th Ave at a similar depth to GP-03 (4.5 to 5 feet bgs) to determine if the utility corridor may be acting as a preferential flow path (Figure 1). A shallow soil sample was submitted for laboratory analysis in accordance with the SAP/QAPP and the RIWP Addendum to assess a potential secondary source of impacts to soil gas.

2.3.2 Soil Gas Sampling Results and Recommendations

There were no petroleum hydrocarbons or VOCs detected in the three soil samples collected during installation of soil gas probes GP-05 and GP-06. Therefore, there are no indications of a potential secondary source in shallow vadose zone soils at either location. Soil analytical results are included in Table 2.

Soil gas analytical results from GP-05 contained the highest concentrations of TPH observed in soil gas at the Site (Table 1) and was above the MTCA Method B subslab soil gas screening level. GP-05 is installed at a depth greater than the utility corridor and GP-03. Conversely, GP-06, which was installed at the depth of the utility corridor but at a greater distance from the former service station building than GP-03 and GP-05, did not contain any exceedances of the current MTCA Method B subslab screening levels in soil gas (Table 1; Figure 1). These results suggest that the soil gas exceedances at GP-03 and GP-05 are not due to the utility corridor or a potential secondary source in shallow vadose soil.

Based on these results, the extent of Site soil gas impacts remained a data gap that precluded the completion of the AO-required RI report. Additionally, the extents of Site soil gas impacts represented a potential for vapor intrusion exposures to the Chri-Mar Apartments building to the south of the Site. To address this data gap, Aspect recommended performing a Tier II vapor intrusion assessment to further evaluate the potential for vapor intrusion in the Chri-Mar Apartments building to the south (Aspect, 2021a). As part of this evaluation[2], Aspect proposed the following scope of work:

- Site Reconnaissance – Perform a Site visit to evaluate the Chri-Mar Apartments building. The purpose of the evaluation was to identify building construction characteristics, heating and ventilation systems, and background sources of possible chemical contaminants that may influence the results of indoor sampling. Potential sources of VOCs would be identified in the building by visual observation and by using a photoionization detector (PID).

- Indoor[2] and Ambient Air Sampling – Collect indoor and ambient air samples at two locations in the north end of the building and up to two ambient background air samples to evaluate potential vapor intrusion exposure.

- Soil Gas Sampling – The day following indoor air sampling, collect subslab soil gas samples[2] in the Chri-Mar Apartments building to the south at the two locations where indoor air samples were collected. Additionally, Aspect proposed

[2] At this stage of the assessment, the building construction characteristics were unknown, and it was assumed that the Chri-Mar Apartments building was constructed as slab on grade. Once the building reconnaissance was performed and it was observed that the building was constructed over a crawlspace, the PLPs recommended collecting crawlspace air samples in lieu of indoor air or subslab soil gas samples as discussed in Section 2.4.1.

resampling soil gas probes GP-02, GP-03, GP-05, and GP-06 concurrent with the subslab soil gas sampling event.

2.4 July 2021 Chri-Mar Apartments Crawlspace Air Sampling

To evaluate the potential for vapor intrusion exposure to the Chri-Mar Apartments, Aspect performed a Tier II assessment per Ecology guidance. These results were communicated to Ecology in the Vapor Intrusion Assessment Results and Recommendations Memorandum, dated October 14, 2021 (Aspect, 2021b). A summary is included below.

2.4.1 Building Reconnaissance

SREH executed an access agreement with the Chri-Mar Apartments property owner on May 21, 2021 and Aspect and Arcadis conducted the building reconnaissance on June 21, 2021. The following building characteristics were noted:

- The building construction includes a crawlspace and is not slab on grade.
- The crawlspace is approximately 2-feet tall and continuous throughout the building footprint.
- The foundation walls run along the perimeter of the building. There is an additional foundation wall with a 2x4 stud construction oriented east-west through the middle of the building to support floor joists.
- There are four crawlspace ventilation points along the north side of the building. Three of them measured approximately 2 feet by 1 foot; one of the three was partially blocked by a wood pile. The fourth ventilation point was the crawlspace access, which measured approximately 4 feet long by 2 feet tall.
- The underground utilities that run in the crawlspace (sewer and water) all appeared to penetrate the foundation walls, indicating relatively shallow utility depths outside the building footprint.
- The dirt floor of the crawlspace was covered in plastic sheeting, but the plastic sheeting did not appear to be taped at the seams or to the foundation walls. Some bare patches of ground were observed.
- Subslab soil gas sampling was not feasible because of the building construction design (i.e., there was no slab on grade). Therefore, the PLPs recommended collecting crawlspace air samples from beneath the Chri-Mar Apartments concurrently with soil gas samples from the existing gas probes on the Property to evaluate the potential for vapor intrusion to the Chri-Mar Apartments building in an email dated June 23, 2021. Ecology approved this approach in an email dated July 8, 2021.

2.4.2 Crawlspace Air and Soil Gas Sampling Methodology

On July 20, 2021, crawlspace air samples were collected in the center of the Chri-Mar Apartments building at the two locations, IA-01 and IA-02, shown on Figure 1. These locations underneath the building were chosen relative to the soil gas probe locations at the Property line where soil gas concentrations had historically exceeded the MTCA Method B subslab soil gas screening levels.

The intake for the Teflon-coated sample tubing was placed near the center of the Chri-Mar Apartments building and routed to each sample canister, which was staged outside the crawlspace. Additionally, an ambient background air sample was collected upwind of the crawlspace at the location shown on Figure 1 (BA-1).

Time-integrated samples were collected over the course of a day using 6-liter (L) cannisters prepared under negative pressure and lab-certified clean for VOCs. The cannisters were equipped with dedicated flow regulators set at a fill rate set for an approximate 8-hour sampling event. During the sampling period, the pressure in the cannisters was monitored, and sampling concluded when each cannister reached a final vacuum of -5 inches of mercury. During the sampling period, the barometric pressure fell from approximately 30.17 inches of mercury to 30.10 inches of mercury. Wind was light and varied in direction from northeast to northwest.

Soil gas samples were collected from gas probes near the property line (GP-02, GP-03, GP-05, and GP-06) concurrently with crawlspace air sampling. Soil gas sampling was performed in accordance with the SAP/QAPP, including collection of field duplicates and analysis of a trip blank (Appendix E, Aspect, 2019). No quality control issues were noted by the third-party data validator (Laboratory Data Consultants, LLC).

2.4.3 Crawlspace Air and Soil Gas Analytical Results

The sampling results are summarized in Tables 1 and 3 for soil gas and crawlspace air, respectively. As discussed in Section 4.7 of Ecology's vapor intrusion guidance (Ecology, 2021), the contributions of vapor intrusion to air can be calculated as measured VOC concentration in air minus the VOC concentration in ambient air. These net results represent the contribution of vapor intrusion to VOC concentrations in air.

Net crawlspace air results were calculated by subtracting the ambient background air concentrations collected outside and upwind of the Chri-Mar Apartments building on the Property. Results were compared against the MTCA Method B screening levels for soil gas and cleanup levels for indoor air for unrestricted use. The results are summarized as follows:

- In soil gas, TPH and benzene were detected above the MTCA Method B subslab soil gas screening levels for unrestricted use at multiple gas probes (Table 1). These results were consistent with previous soil gas sampling completed at these gas probes.
- Crawlspace air samples corrected for outdoor ambient sources showed benzene, naphthalene, and TPH impacts above the MTCA Method B indoor air cleanup level for unrestricted use at the eastern of the two locations IA-01 (Table 3). This location in the eastern portion of the Chri-Mar Apartments building crawlspace is closer to gas probes GP-03 and GP-05 (Figure 1).

2.4.4 Recommendations

Based on the results of crawlspace air sampling, additional investigation of the potential vapor intrusion exposure pathway within residential spaces in the Chri-Mar Apartment building was recommended to support the Tier II vapor intrusion assessment. Aspect recommended collecting indoor air samples in each of the ground floor apartments in the Chri-Mar Apartments building.

The proposed vapor intrusion assessment consisted of the following elements:

- **Perform Chri-Mar Apartments building reconnaissance:** During the first building reconnaissance in May 2021, entry was not made into every residence. Aspect recommended completing a site visit to evaluate each of the ground floor apartments in the Chri-Mar Apartments building. Potential sources of VOCs were to be identified in the building by visual observation and by using a parts per million range PID to screen the building.

  The site reconnaissance was planned to be completed at least 48 hours prior to indoor air sampling to ensure that possible sources (e.g., household chemicals such as cleaners) of cross-contamination were removed, isolated, and/or documented to the extent practical. The building reconnaissance also included a visual inspection for possible preferential pathways such as utility penetrations and unsealed air gaps between the floor of the tenant spaces and the crawlspace.

- **Perform indoor air sampling:** Obtain an indoor sample from each of the four ground floor apartments in the Chri-Mar Apartments building. Based on the results of the building reconnaissance, an additional indoor air sample was considered to assess potential background source contributions.

- **Perform further crawlspace air sampling:** Concurrently with indoor air sampling, obtain four air samples from the crawlspace collocated beneath the indoor air samples in each residence.

- **Perform ambient background air sampling:** Concurrently with indoor/crawlspace air sampling, obtain two background ambient air samples from outside the Chri-Mar Apartments building – one at an upwind location and one at a downwind location.

- **Perform additional soil gas sampling:** Obtain soil gas samples from gas probes GP-02, GP-03, GP-05, and GP-06.

3 December 2021 Vapor Intrusion Assessment

The following section details the results of the Tier II vapor intrusion assessment performed in December 2021. The approach and scope of work was detailed in the Vapor Intrusion Assessment Results and Recommendations Memorandum (Aspect, 2021b) and approved by Ecology in an email dated November 1, 2021.

3.1 Building Reconnaissance

SREH executed an access agreement with the Chri-Mar Apartments property owner on November 15, 2021, and Aspect and Arcadis conducted the building reconnaissance on December 1, 2021. During the building reconnaissance visit, Aspect and Arcadis entered each of the four ground-floor residential units in the Chri-Mar Apartments. For reference, the units will be referred to by their addresses, which from east to west are Units #125, #127, #129, and #131. The floorplan layout of the ground floor is shown on Figure 2. The following characteristics were noted about the building and each specific unit.

3.1.1 General Building Characteristics

For each of the units, the primary heat source is electric baseboard heaters. No natural gas utilities are used on the property. The electrical service for the building comes in overhead to the north, exterior side of the building where the utility meters are located. From there, the electrical runs through the crawlspace before running to the breaker box located in each unit. Additionally, the water supply lines and sanitary sewer lines for each unit are routed through the crawlspace. The penetrations for all three of these utilities is located in the northern half of the crawlspace.

All units contained operable windows on both the north and south sides of the building. However, due to the season, it was not expected that windows would be opened before or during the sampling event. The residents were asked to not open windows in the 48 hours prior to the sampling event or during the 24-hour sampling event.

3.1.2 Unit #125

This is a two-story unit, and the ground floor also contains the office for the property manager of the complex. The resident, who is the property manager, was available for interview at the time of the building reconnaissance. There had been no recent renovation work (such as painting/staining or new carpets). The resident indicated that common household chemicals such as glass and floor cleaners were recently used. Common household cleaners containing petroleum distillates were observed in the laundry room, under the kitchen sink, and under the bathroom sink. These cleaners were placed in a tote and removed from the unit during air sample collection.

In the kitchen, it was noted that the vent hood did not exhaust outside. The plumbing penetration for the kitchen sink was not sealed and presumably open behind the wall and into the crawlspace. Similarly, the plumbing penetration for the bathroom sink was not sealed. The bathroom exhaust fan was wired to the same switch as the bathroom lights and vented directly to the exterior of the building. This ventilation potentially results in a negative pressure differential between the bathroom and crawlspace.

Additionally, this unit contains a fireplace. The fireplace itself may be a potential background source of VOC emissions. The resident indicated that the fireplace had not been used in over a month.

3.1.3 Unit #127

This is a single-story unit. The resident was available for interview at the time of the building reconnaissance. There had been no recent renovation work at the time of the building reconnaissance visit. However, at the time of sampling, the electrical panel in this unit was being replaced. Common household cleaners containing petroleum distillates were observed under the kitchen sink and under the bathroom sink. These cleaners were placed in a tote and removed from the unit during air sample collection.

In the kitchen, it was noted that the vent hood did not exhaust outside. The plumbing penetrations for the kitchen and bathroom sinks were sealed with soft rubber boots. The bathroom exhaust fan was wired to the same switch as the bathroom lights and vented directly to the exterior of the building. This ventilation potentially results in a negative pressure differential between the bathroom and crawlspace.

3.1.4 Unit #129

This is a single-story unit. The resident was not available for interview at the time of the building reconnaissance. Based on an interview with the property manager, there had been no recent renovation work. The property manager also indicated that the resident in this unit worked as an automotive mechanic. No evidence of potential background sources from this occupation (i.e., oil-stained coveralls, etc.) were noted during the building reconnaissance visit or at the time of sample collected. Common household cleaners containing petroleum distillates were observed under the kitchen sink and under the bathroom sink. These cleaners were placed in a tote and removed from the unit during air sample collection.

In the kitchen, it was noted that the vent hood did not exhaust outside. The plumbing penetrations for both the bathroom and kitchen sinks were not sealed. The bathroom exhaust fan was wired to the same switch as the bathroom lights and vented directly to the exterior of the building. This ventilation potentially results in a negative pressure differential between the bathroom and crawlspace.

3.1.5 Unit #131

This is a two-story unit. The resident was available for interview at the time of the building reconnaissance. There had been no recent renovation work. Cigarette smoking indoors appeared common in this unit as evidence by tar stains on walls and burn marks in the carpet. The resident was asked to not smoke indoors for 48 hours prior to sample collection. Common household cleaners containing petroleum distillates were observed under the kitchen sink. These cleaners were placed in a tote and removed from the unit during air sample collection.

In the kitchen, it was noted that the vent hood did not exhaust outside. The plumbing penetrations for the kitchen sink were not sealed. The bathroom for this unit was located on the second floor and was not observed.

3.2 Ambient, Crawlspace, and Indoor Air Sampling

Ambient, crawlspace, and indoor air samples were collected over a time-integrated 24-hour period beginning on December 15 and ending on December 16, 2021. Air samples were collected using 6-L cannisters prepared under negative pressure and lab-certified clean for VOCs. The cannisters were equipped with dedicated flow regulators set at a fill rate set for an approximate 24-hour sampling event.

The pressure in each cannister prior to commencement of the sampling event was noted and varied between -28 to greater than -30 inches of mercury. During the sampling period, the pressure in the cannister was monitored to ensure that the flow regulator was functioning properly. The final pressure at the end of sampling varied between -6 and -9.5 inches of mercury.

During the sampling period, the barometric pressure, as measured onsite using a GEM-5000 multigas meter, increased from 29.24 inches of mercury to 29.32 inches of mercury. Based on weather data from a local meteorological station, the outside temperature varied between 37 and 43 degrees and relative humidity varied between 66 and 92 percent. The wind was calm with a wind speed between 5 and 10 miles per hour and wind direction which varied from north-northeast to east.

3.2.1 Ambient Air Sampling

The purpose of ambient air sampling during a Tier II vapor intrusion evaluation is to evaluate potential outdoor air contributions to indoor air and crawlspace air results. Two ambient air samples were collected during the December 2021 sampling event (Figure 2):

- AMB-1 was collected on the north side of the Chri-Mar Apartments building
- AMB-2 was collected to the southwest of the Chri-Mar Apartments building

The tubing intake for each canister was set an approximate height of 6 feet above the ground surface.

3.2.2 Crawlspace Air Sampling

Crawlspace air samples beneath each unit were obtained concurrently with indoor air samples, except for Unit #131 (Figure 2). While placing tubing for the crawlspace air samples, multiple racoons were observed in the crawlspace, and tubing could not be placed at the final location due to health and safety concerns regarding the presence of wildlife in the crawlspace. For the crawlspace air samples collected beneath Units #125, #127, and #129, the tubing intake was placed at approximately the mid-height of the crawlspace, and the tubing intake was placed where the plumbing penetrations entered the bathroom for each of the three units.

3.2.3 Indoor Air Sampling

Prior to deploying sampling equipment in each unit, the common household cleaners observed during the building reconnaissance visit were placed into a tote and removed from the building. In Units #125, #127, and #129, two samples were collected (Figure 2) – one in the living area as the commonly occupied space of each unit and one in each bathroom to assess any potential preferential pathways. In Unit #131, where no ground

floor bathroom is present, a second sample was collected in the living area as a field duplicate.

3.3 Soil Gas Sampling

Following the completion of ambient, crawlspace, and indoor air sampling, soil gas samples were collected from gas probes near the property line (GP-02, GP-03, GP-05, and GP-06) on December 16, 2021. Soil gas sampling was performed in accordance with the SAP/QAPP, including collection of field duplicates and analysis of a trip blank (Appendix E, Aspect, 2019). Soil gas probe GP-05 could not be sampled as the screen was submerged due to the seasonally high groundwater elevation.

3.4 Air and Soil Gas Analytical Results

Analytical results for crawlspace and indoor air and for ambient, background outdoor air were used to calculate net results for crawlspace and indoor air in accordance with Ecology guidance (Ecology, 2021) and compared to the recently updated generic MTCA Method B cleanup level for TPH. Soil gas results were compared to both the recently updated generic MTCA Method B subslab soil gas screening level for TPH as well as a Site-specific MTCA Method B subslab soil gas screening level.

3.4.1 Soil Gas Results

Soil gas results are presented in Table 1; the laboratory report and data validation report are included as Appendix A. Results were compared to historical results as well as the generic MTCA Method B subslab soil gas screening level:

- **GP-02:** No individual analyte exceeded the MTCA Method B subslab soil gas screening levels, nor did TPH. Naphthalene was not detected in the sample. The only air-phase hydrocarbon detected was the C9-C12 aliphatic fraction (Table 1).
- **GP-03:** At GP-03, TPH exceeded the generic MTCA Method B subslab soil gas screening level. The relative concentration of TPH was consistent with historical samples collected in November 2020 and July 2021 (Table 1). Neither benzene nor naphthalene were detected in the sample. Relatively, the C5-C8 aliphatic fraction contributed a much greater percentage to the TPH concentration than the C9-C12 aliphatic fraction, consistent with historical results.
- **GP-05**: GP-05 could not be sampled because the soil gas probe screen was submerged due to seasonally high groundwater elevations.
- **GP-06:** No individual analyte exceeded the MTCA Method B subslab soil gas screening levels, nor did TPH. Naphthalene and benzene were not detected in the sample. The only air-phase hydrocarbon detected was the C9-C12 aliphatic fraction (Table 1).

3.4.2 Ambient Air Analytical Results

Ambient air analytical results are presented in Table 4; the laboratory report and data validation report is included as Appendix A. Upwind of the Chri-Mar Apartments building at location AMB-1, benzene was detected at a concentration of 0.43 $\mu g/m^3$, which exceeds the MTCA Method B indoor air cleanup level of 0.32 $\mu g/m^3$. Benzene

was detected at a similar concentration in the second ambient air sample, which was located down/crosswind of the Chri-Mar Apartments building (Table 4). Naphthalene was also detected in the upwind sample at a concentration of 0.068 µg/m^3, which is comparable to the MTCA Method B indoor air cleanup level of 0.074 µg/m^3.

The C5-C8 aliphatic, C9-C12 aliphatic, and C9-10 aromatic air-phase hydrocarbons were not detected in either of the ambient air samples (Table 4). However, summing the non-detected analytes at one-half the reporting limit results in a TPH concentration at both locations which exceeds the generic MTCA Method B indoor air cleanup level for TPH (Table 4).

3.4.3 Crawlspace Air Analytical Results

Crawlspace air analytical results are presented in Table 3 by sampling location; sampling locations are shown on Figure 2; and the laboratory report and data validation report are included as Appendix A. Net crawlspace air concentrations were calculated by subtracting the background, ambient air concentrations from the reported crawlspace air analytical results in accordance with Ecology's guidance (Ecology, 2021) to determine what contribution vapor intrusion had on crawlspace air quality. For any analyte, if the reported result was less than the upwind ambient air concentration or if the analyte was not detected in either the crawlspace air or ambient air result, the net value was summed as zero in the TPH calculation.

Based on the results of this evaluation, none of the three crawlspace air samples collected below Units #125, #127, and #129 contained individual petroleum hydrocarbon compounds or TPH above the generic MTCA Method B indoor air cleanup levels (Table 4).

3.4.4 Indoor Air Analytical Results

Indoor air analytical results are presented in Table 4; the laboratory analytical report and data validation report are included in Appendix A. Net indoor air concentrations were calculated by subtracting the background, ambient air concentrations from the reported indoor air analytical results in accordance with Ecology's guidance (Ecology, 2021) to determine the potential contribution from vapor intrusion on indoor air quality. For any analyte, if the reported result was less than the upwind ambient air concentration or if the analyte was not detected in either the indoor air or ambient air result, the net value was summed as zero in the TPH calculation. The results were compared to the MTCA Method B indoor air cleanup levels for individual analytes and the generic MTCA Method B indoor air cleanup level for TPH. Analytical results are summarized by residential unit below.

3.4.4.1 Unit #125

In Unit #125, the concentration of naphthalene in the net indoor air results was greater than the MTCA Method B indoor air cleanup level in both the living room and bathroom (Table 4). However, the concentration of naphthalene at both locations is an order of magnitude larger than the concentration detected in the crawlspace (which was below the MTCA Method B indoor air cleanup level). This indicates that the concentration of naphthalene detected in indoor air is likely not due to vapor intrusion, but rather a background source from within the unit.

Similarly, the C9-C12 aliphatic fraction was detected in both samples but not in the crawlspace sample, further supporting a potential background source from within the unit. These results indicate that vapor intrusion is likely not a complete exposure pathway for Unit #125.

3.4.4.2 Unit #127

In Unit #127, the concentration of naphthalene in the net indoor air results was greater than MTCA Method B indoor air cleanup level in the bathroom (Table 4) but less than the MTCA Method B indoor air cleanup level in the living room. However, the concentration of naphthalene at both locations is an order of magnitude greater than the concentration detected in the crawlspace (which was below the MTCA Method B indoor air cleanup level). This indicates that the concentration of naphthalene detected in indoor air is likely due to a background source from within the unit, rather than migration of vapor from beneath the unit.

Similar to Unit #125, the C9-C12 aliphatic fraction was detected in both samples but not in the crawlspace sample, further supporting a potential background source from within the unit. The TPH concentration in both samples was less than the generic MTCA Method B indoor air cleanup level for TPH. These results indicate that vapor intrusion is likely not a complete exposure pathway for Unit #127.

3.4.4.3 Unit #129

In Unit #129, the concentration of naphthalene in the net indoor air results was greater than the MTCA Method B indoor air cleanup level in both the living room and bathroom (Table 4). Similar to the previous Units #125 and #127, the concentration of naphthalene at both locations is an order of magnitude larger than the concentration detected in the crawlspace (which was below the MTCA Method B indoor air cleanup level). This indicates that the concentration of naphthalene detected in indoor air is likely not due to vapor intrusion, but rather a background source from within the unit.

In Unit #129, both the C5-C8 and the C9-C12 aliphatic fractions were detected in both indoor air samples but not in the corresponding crawlspace sample, further supporting a potential background source contribution from within the unit. The TPH concentrations in both indoor air samples exceeded the generic MTCA Method B indoor air cleanup level. However, neither the C5-C8 nor the C9-C12 aliphatic fractions were detected in crawlspace air, and the TPH concentration in crawlspace air was below the MTCA Method B cleanup level. These results indicate that exceedances of TPH in indoor air are likely the result of a background source from within the unit, rather than migration of vapor from beneath the unit.

3.4.4.4 Unit #131

In Unit #131, the concentration of naphthalene in the net indoor air results was greater than MTCA Method B indoor air cleanup level in both the living room and bathroom (Table 4). Due to health and safety concerns[3], a crawlspace air sample was not collected from directly beneath Unit #131. Given the open-air exchange of the crawlspace, an

[3] After deploying sample intake tubing beneath Units #125, #127, and #129, multiple racoons were observed in the east end of the crawlspace beneath Unit #131.

average of the other crawlspace air results was used to evaluate the potential contribution of vapor intrusion from the crawlspace to indoor air (Table 4).

Similar to the previous Units #125, #127, and #129, the concentration of naphthalene at both locations is an order of magnitude larger than the concentration detected in the average crawlspace results (which were all below the MTCA Method B indoor air cleanup level). This indicates that the concentration of naphthalene detected in indoor air is likely due to a background source from within the unit, rather than migration of vapor from beneath the unit.

Benzene was detected at a concentration greater than the MTCA Method B indoor air cleanup level in both samples collected from the living room, but, similar to naphthalene, these concentrations were two orders of magnitude higher than the average net crawlspace air results.

Likewise, both the C5-C8 and the C9-C12 aliphatic fractions were detected in both indoor air samples but not in any of the three crawlspace air samples, further supporting a potential background source from within the unit. The TPH concentrations in both samples exceeded the generic MTCA Method B indoor air cleanup level. However, neither the C5-C8 nor the C9-C12 aliphatic fractions were detected in crawlspace air, and the TPH concentration in crawlspace air was below the MTCA Method B cleanup level. These results indicate that exceedances of TPH in indoor air are likely the result of a background source from within the unit, rather than migration of vapor from beneath the unit.

3.4.5 Possible Background Sources

Ecology guidance acknowledges there can be a wide variety of sources that contribute to measured concentrations of analytes in indoor air (Ecology, 2021). These background sources can include common household products such as cleaners, paint products, byproducts from smoking, and recently manufactured materials.

As shown in Table A below, the highest indoor air concentrations measured during the December 2021 sampling event are well within the range of potential background concentrations from non-vapor intrusion sources.

Table A. Comparison of Indoor Air Concentrations vs. Range of Potential Background Concentrations

Analyte	Highest Detected Indoor Air Concentration ($\mu g/m^3$)	Ecology Indoor Air Cleanup Levels ($\mu g/m^3$)	Range of Potential Background Concentrations ($\mu g/m^3$)
Benzene	1.1	0.32	<RL to 4.7
Naphthalene	0.60	0.074	0.18 to 1.7
TPH	301	46	116 - 594

Notes: Adapted from Table E-1 (Ecology, 2021).

4 Conclusions

Based on the results of the December 2021 Tier II assessment, the vapor intrusion exposure pathway for the Chri-Mar Apartments building does not appear to be complete. This conclusion is based on multiple lines of evidence:

1. Primarily, neither TPH nor any individual analytes were detected in crawlspace air above their respective MTCA Method B indoor air cleanup levels (Table 4). The results from all three crawlspace air samples were consistent, and air-phase hydrocarbons were not detected in any of the samples. These analytical results indicate soil gas is not intruding into the crawlspace air. Therefore, the vapor intrusion exposure pathway is likely not complete.

2. TPH, naphthalene, and benzene were detected in indoor air at a concentration exceeding their respective MTCA Method B indoor cleanup levels in one or more units in the Chri-Mar Apartments building. However, when comparing the concentrations in indoor air to crawlspace air, it is likely that background sources within each unit contribute to the concentration measured in indoor air based on the following lines of evidence:

    a. The three air-phase hydrocarbon fractions, which make up the TPH concentration, were not detected in any of the three crawlspace air samples. However, the C9-C12 aliphatic fraction was detected in every unit, and the C5-C8 aliphatic fraction was detected in both Units #129 and #131. These fractions are the primary components of the TPH exceedances in each unit but are not attributable to vapor intrusion from the crawlspace.

    b. Naphthalene was detected in every unit at a concentration greater than the MTCA Method B indoor air cleanup level. However, these concentrations were an order of magnitude larger than the concentrations detected in crawlspace air. Additionally, naphthalene was not detected in any of the December 2021 soil gas samples where TPH concentrations were elevated, and naphthalene has never been detected in Site soil gas at a concentration exceeding the MTCA Method B subslab soil gas screening level.

    c. Benzene was detected in Unit #131 at a concentration exceeding the MTCA Method B indoor air cleanup level. However, this concentration was two orders of magnitude larger than any of the benzene concentrations in the three crawlspace air samples, indicating the source of benzene in indoor air in Unit #131 was likely due to a background source within the unit.

3. The signature of the TPH mixture in soil gas as compared to indoor air does not correlate (i.e., the aliphatic and aromatic hydrocarbon fractions). In soil gas, the TPH mixture is characterized by a relatively high proportion (typically 80 percent) of the C5-C8 aliphatic fraction as compared to the C9-C12 aliphatic fraction. In indoor air, the same fractions were roughly equal when present, or otherwise only the C9-C12 aliphatic fraction was detected.

4. The range of measured TPH, benzene, and naphthalene concentrations in indoor air are well within the published range of potential background concentrations in indoor air from non-vapor intrusion background sources (Ecology, 2021).

Based on these multiple lines of evidence, the vapor intrusion exposure pathway in the Chri-Mar Apartments building is likely incomplete. Additionally, the interim action for the Site is currently being permitted with the City of Lynnwood and scheduled for implementation in the summer of 2022. The planned interim action targets the removal of the residual nonaqueous phase free product and impacts to soil above MTCA Method A cleanup levels, as well as incidental recovery of impacted groundwater at the Site. These three media represent the source of impacts to Site soil gas, and cleanup activities during the interim action are expected to significantly reduce source area concentrations.

Concentrations in soil gas and the potential for vapor intrusion can show seasonal and temporal variability. This variability can be due to several factors, including changes in groundwater elevation resulting in more or less contamination sorbed to soil being able to volatilize to soil gas; changes in barometric pressure; changes in the building heating/cooling resulting in variances in pressure differentials; as well as other factors.

Additionally, Ecology guidance recommends a minimum of two rounds of sampling approximately six months apart for vapor assessments. To confirm the results of this Tier II vapor intrusion assessment, Aspect recommends another round of soil gas and ambient, crawlspace, and indoor air sampling at the same locations as the December 2021 event prior to the implementation of the interim action. Additionally, following completion of the interim action, performance monitoring of soil gas on the Property will be completed to confirm the significant removal of source mass results in reduced concentrations in subsurface soil gas.

5 References

Aspect Consulting, LLC (Aspect), 2019, Remedial Investigation Work Plan, Texaco Strickland Cleanup Site, 6808 196th Street Southwest, Lynnwood, Washington. Dated March 6, 2019.

Aspect Consulting, LLC (Aspect), 2020, Remedial Investigation Work Plan Addendum, Texaco Strickland Cleanup Site, 6808 196th Street Southwest, Lynnwood, Washington, dated May 28, 2020.

Aspect Consulting, LLC (Aspect), 2021a, Progress Report No. 9 – January 2021, Texaco Strickland Cleanup Site, 6808 196th Street Southwest, Lynnwood, Washington, dated January 18, 2021.

Aspect Consulting, LLC (Aspect), 2021b, Vapor Intrusion Assessment Results and Recommendations Memorandum, Texaco Strickland Site, Agreed Order No. 14315, dated October 14, 2021.

Washington State Department of Ecology (Ecology), 2018, Petroleum Vapor Intrusion (PVI): Updated Screening Levels, Cleanup Levels, and Assessing PVI Threats to Future Buildings, Implementation Memorandum No. 18, Publication No. 17-09-043, dated January 10, 2018.

Washington State Department of Ecology (Ecology), 2021, Draft Guidance for Evaluating Vapor Intrusion in Washington State, Investigation and Remedial Action, Toxics Cleanup Program, Publication No. 09-09-047, dated Draft for Public Comment: November 2021.

6 Limitations

Work for this project was performed for Strickland Real Estate Holdings, LLC (Client), and this report was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This report does not represent a legal opinion. No other warranty, expressed or implied, is made.

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Please refer to Appendix B titled "Report Limitations and Guidelines for Use" for additional information governing the use of this report.

TABLES

Table 1. Cumulative Soil Gas Analytical Results

Project No. 180357, Texaco Strickland Site, Lynnwood, Washington

			Location	GP-01		GP-02					GP-03					GP-04		GP-05			GP-06		
			Date	07/25/2019	08/20/2020	07/25/2019	08/20/2020	11/20/2020	07/20/2021	12/16/2021	07/25/2019	08/20/2020	11/20/2020	07/20/2021	12/16/2021	07/25/2019	08/20/2020	11/20/2020	07/20/2021	12/16/2021	11/20/2020	07/20/2021	12/16/2021
			Sample	GP-01-072519	GP-01-082020	GP-02-072519	GP-02-082020	GP-02-112020	GP-02-072021	GP-02-121621	GP-03-072519	GP-03-082020	GP-03-112020	GP-03-072021	GP-03-121621	GP-04-072519	GP-04-082020	GP-05-112020	GP-05-072021	--	GP-06-112020	GP-06-072021	GP-06-121621
Analyte	Unit	MTCA Method B Subslab Soil Gas SL[1]																		Probe Submerged; No Sample Collected[3]			
Petroleum Hydrocarbon Related Volatile Organic Compounds (µg/m³)																							
Benzene	µg/m³	11		**3.8**	< 1.1 U	**1.5**	< 1.1 U	< 1.1 U	**15**	**3.5**	**3.9**	**5.7**	< 2.7 U	**8**	< 1.9 U	**1.2**	**1.7**	**7.1**	**13**	--	**2.7**	**2.4**	< 2.6 U
Toluene	µg/m³	76,000		**28**	< 64 U	**12**	< 62 U	< 64 U	**150**	< 100 U	**17**	< 170 U	< 160 U	< 110 U	< 110 U	**11**	< 68 U	< 810 U	< 170 U	--	< 64 U	< 100 U	< 150 U
Ethylbenzene	µg/m³	15,000		**6**	< 1.5 U	**3.4**	**3.1**	**2.2**	**15**	< 2.3 U	**4.9**	**80**	< 3.6 U	**13**	< 2.6 U	**3.4**	**5.1**	< 19 U	**29**	--	**5**	**6.8**	< 3.5 U
Total Xylenes	µg/m³	1,500		**32.9**	< 3 U	**18.3**	**16.7**	**12**	**80**	< 4.6 U	**27.1**	**382**	**10**	**65**	**9.5**	**18.7**	**28.3**	< 37 U	**158**	--	**25.8**	**38**	< 7 U
Naphthalene	µg/m³	2.5		< 0.84 U	< 0.89 U	< 0.81 U	**1.2**	< 0.89 U	< 1.4 U	< 1.4 U	< 2 U	< 2.3 U	< 2.2 U	< 1.5 U	< 1.5 U	< 0.84 U	< 0.94 U	< 11 U	< 2.4 U	--	< 0.89 U	**1.6**	< 2.1 U
C5 - C8 Aliphatic Hydrocarbons	µg/m³	--		**410**	**580**	**350**	**630**	**210**	**1,300**	< 400 U	**8,700**	**13,000**	**3,700**	**4,500 J**	**3,600 ve**	**510**	**650**	**22,000**	**16,000 J**	--	**160**	**600**	< 610 U
C9 - C12 Aliphatic Hydrocarbons	µg/m³	--		**2,200**	**680**	**2,600**	**890**	**480**	**830**	**170**	**9,600**	**2,200**	**1,100**	**740**	**590**	**1,800**	**470**	**5,000**	**2,300**	--	**390**	**2,300**	**510**
C9 - C10 Aromatic Hydrocarbons	µg/m³	--		< 80 U	< 85 U	< 77 U	< 82 U	< 85 U	< 140 U	< 130 U	< 190 U	**220**	< 210 U	< 140 U	< 150 U	**100**	< 90 U	< 1100 U	< 230 U	--	< 85 U	**250**	< 200 U
Total Petroleum Hydrocarbons[2]	µg/m³	1,500		**2,721**	**1,338**	**3,024**	**1,614**	**780**	**2,461**	**489**	**18,449**	**15,974**	**5,001**	**5,452 J**	**4,333**	**2,445**	**1,235**	**28,005**	**18,701 J**	--	**658**	**3,249**	**998**
Conventionals (%)																							
Carbon Dioxide	%			--	**24.6**	--	**20.0**	**27.6**	**22.8 J**	--	--	**22.8**	**30.3**	**25.0 J**	--	--	**8.53**	**29.6**	**22.3 J**	--	**17.1**	**18.4 J**	--
Oxygen	%			--	**3.44**	--	**6.95**	**4.5**	**8.46 J**	--	--	**1.90**	**1.35**	**3.12 J**	--	--	**15.9**	**1.27**	**5.00 J**	--	**8.16**	**9.22 J**	--
Methane	%			--	< 0.0500 U	--	< 0.0500 U	< 0.05 U	< 0.110 UJ	--	--	**0.157**	**0.168**	< 0.105 UJ	--	--	< 0.0500 U	**0.515**	**0.485 J**	--	< 0.05 U	< 0.0950 UJ	--
Helium	%			--	< 0.6 U	--	< 0.6 U	< 0.6 U	< 0.6 U	--	--	< 0.6 U	< 0.6 U	< 0.6 U	--	--	< 0.6 U	< 0.6 U	< 0.6 U	--	< 0.6 U	< 0.6 U	--

Notes:

(1) Model Toxics Control Act (MTCA) Method B Subslab Soil Gas Screening Levels (SLs), including the generic Total Petroleum Hydrocarbons (TPH) Screening Level.

(2) Total petroleum hydrocarbons (TPH) concentration is the sum total of volatile organic compounds and aliphatic and aromatic hydrocarbons; one-half of the laboratory reporting limit was used for non-detects.

(3) Soil gas probe screen was submerged during the December 2021 sampling event due to seasonally higher groundwater elevation.

Bold - detected

Blue Shaded - Detected result exceeded generic MTCA Method B subslab soil gas screening level

U - Analyte not detected at or above Reporting Limit (RL) shown

J - Result value estimated

UJ - Analyte not detected and the Reporting Limit (RL) is an estimate

µg/m³ - micrograms per cubic meter

% - percent

Table 2. Soil Analytical Results for Gas Probes

Project No. 180357, Texaco Strickland Site, Lynnwood, Washington

			Location	GP-05		GP-06
			Date	11/10/2020	11/10/2020	11/10/2020
			Sample	GP-05-1.25	GP-05-6	GP-06-2.5
			Depth Below Ground Surface	1.25 ft	6 ft	2.5 ft
Analyte	**Unit**	**MTCA Method A Cleanup Level**				
Total Petroleum Hydrocarbons						
Gasoline Range Organics	**mg/kg**	**30**		< 5 U	< 5 U	< 5 U
Diesel Range Organics	**mg/kg**	**2000**		< 50 U	< 50 U	< 50 U
Motor Oil Range Organics	**mg/kg**	**2000**		< 250 U	< 250 U	< 250 U
Gasoline-Range Volatile Organic Compounds						
Benzene	**mg/kg**	**0.03**		< 0.02 U	< 0.02 U	< 0.02 U
Toluene	**mg/kg**	**7**		< 0.02 U	< 0.02 U	< 0.02 U
Ethylbenzene	**mg/kg**	**6**		< 0.02 U	< 0.02 U	< 0.02 U
Total Xylenes	**mg/kg**	**9**		< 0.06 U	< 0.06 U	< 0.06 U
Naphthalene	**mg/kg**	**5**		< 0.05 U	< 0.05 U	< 0.05 U

Notes:

U - Analyte not detected above the shown Reporting Limit (RL)

Table 3. Crawlspace and Ambient Air Analytical Results

Project No. 180357, Texaco Strickland Site, Lynnwood, Washington

		July 2021 Results				
	Location	**Ambient**	**Crawlspace**			
	Area	Outdoor, Upwind	East End of Crawlspace		Central Portion of Crawlspace	
	Sample Type	Background, Reported	Crawlspace, Reported	Crawlspace, Net[1]	Crawlspace, Reported	Crawlspace, Net[1]
	Date	07/20/2021	07/20/2021		07/20/2021	
	Sample ID	BA-01-072021	IA-01-072021	--	IA-02-072021	--
Analyte	**MTCA Method B CUL[2] (Unrestricted Use)**					
Petroleum Hydrocarbon Related Volatile Organic Compounds (µg/m^3)						
Benzene	0.32	< 0.32 U	**1.2**	**1.2**	< 0.32 U	ND
Toluene	2300	< 19 U	< 19 U	ND	< 19 U	ND
Ethylbenzene	460	< 0.43 U	< 0.43 U	ND	< 0.43 U	ND
Total Xylenes	46	< 0.87 U	**2.16**	**2.16**	< 0.87 U	ND
Naphthalene	0.073	< 0.057 U	**0.13**	**0.13**	< 0.057 U	ND
C5 - C8 Aliphatic Hydrocarbons	--	**82**	**260**	**178**	**110**	**28**
C9 - C12 Aliphatic Hydrocarbons	--	< 25 U	**56**	**56**	< 25 U	ND
C9 - C10 Aromatic Hydrocarbons	--	< 25 U	< 25 U	ND	< 25 U	ND
Total Petroleum Hydrocarbons[3]	46	**118**	**342**	**234**	**146**	**28**

		December 2021 Results							
	Location	**Ambient**		**Crawlspace**					
	Area	Outdoor, Upwind	Outdoor, Crosswind	Unit #125 (West End of Crawlspace)		Unit #127 (Central West Portion of Crawlspace)		Unit #129 (Central East Portion of Crawlspace)	
	Sample Type	Background, Reported	Background, Reported	Crawlspace, Reported	Crawlspace, Net[1]	Crawlspace, Reported	Crawlspace, Net[1]	Crawlspace, Reported	Crawlspace, Net[1]
	Date	12/15/2021	12/15/2021	12/15/21		12/15/21		12/15/21	
	Sample ID	AMB-1-121521	AMB-2-121521	CS-125-121521	--	CS-127-121521	--	CS-129-121521	
Analyte	**MTCA Method B CUL[2] (Unrestricted Use)**								
Petroleum Hydrocarbon Related Volatile Organic Compounds (µg/m^3)									
Benzene	0.32	**0.43**	**0.45**	**0.56**	**0.13**	**0.49**	**0.06**	**0.49**	**0.06**
Toluene	2300	< 19 U	< 19 U	< 19 U	ND	< 19 U	ND	< 19 U	ND
Ethylbenzene	460	< 0.43 U	< 0.43 U	**0.56**	**0.56**	< 0.43 U	ND	**0.54**	**0.54**
Total Xylenes	46	**1.0**	**1.2**	**3.3**	**2.25**	**1.5**	**0.5**	**3.0**	**1.97**
Naphthalene	0.073	**0.068 J**	< 0.057 J	**0.099 J**	**0.031 J**	**0.073 J**	**0.005 J**	**0.11**	**0.042 J**
C5 - C8 Aliphatic Hydrocarbons	--	< 75 U	< 75 U	< 75 U	ND	< 75 U	ND	< 75 U	ND
C9 - C12 Aliphatic Hydrocarbons	--	< 25 U	< 25 U	< 25 U	ND	< 25 U	ND	< 25 U	ND
C9 - C10 Aromatic Hydrocarbons	--	< 25 U	< 25 U	< 25 U	ND	< 25 U	ND	< 25 U	ND
Total Petroleum Hydrocarbons[3]	46	**74**	**74**	**76**	**3.0**	**74**	**0.6**	**76**	**2.6**

Notes:

(1) Net results were calculated by subtracting the upwind ambient air result from the crawlspace result. If the reported crawlspace result was less than the upwind ambient air concentration or if a certain analyte was not detected in either the crawlspace sample and the ambient air result, the net value is shown as ND and summed as zero in the Total Petroleum Hydrocarbon calculation.

(2) Model Toxic Control Act (MTCA) Method B Indoor Air Cleanup Levels (CULs), including the generic Total Petroleum Hydrocarbons CUL.

(3) Total petroleum hydrocarbon (TPH) concentration is the sum total of volatile organic compounds and aliphatic and aromatic hydrocarbons; one-half of the laboratory reporting limit was used for non-detects in reported results. Non-detects in net results (ND) were summed as zero.

Bold results indicate analyte was detected.

Blue-highlighted values exceed the generic MTCA Method B Indoor Air Cleanup Levels for Unrestricted Land Use.

µg/m^3 = micrograms per cubic meter

-- = not applicable

U - Analyte not detected at or above Reporting Limit (RL) shown

J - Result value estimated

Table 4. Ambient, Crawlspace, and Indoor Air Analytical Results - December 2021

Project No. 180357, Texaco Strickland Site, Lynnwood, Washington

	Location/Unit	Ambient		Unit #125					
	Area	Outdoor, Upwind	Outdoor, Crosswind	Crawlspace Beneath Bathroom		Living Room		Bathroom	
	Sample Type	Background, Reported	Background, Reported	Crawlspace, Reported	Crawlspace, Net[1]	Indoor Air, Reported	Indoor Air, Net[1]	Indoor Air, Reported	Indoor Air, Net[1]
	Sample ID	AMB-1-121521	AMB-2-121521	CS-125-121521	--	IA-125-1-121521	--	IA-125-2-121521	--
Chemical Name	**MTCA Method B CUL[2] (Unrestricted Use)**								
Petroleum Hydrocarbon Related Volatile Organic Compounds (µg/m^3)									
Benzene	0.32	**0.43**	**0.45**	**0.56**	**0.13**	**0.41**	ND	**0.39**	ND
Toluene	2,300	< 19 U	< 19 U	< 19 U	ND	< 19 U	ND	< 19 U	ND
Ethylbenzene	460	< 0.43 U	< 0.43 U	**0.56**	**0.56**	**0.63**	**0.63**	**0.59**	**0.59**
Total Xylenes	46	**1.0**	**1.2**	**3.3**	**2.25**	**2.0**	**1.0**	**2.0**	**1.0**
Naphthalene	0.074	**0.068 J**	< 0.057 J	**0.099 J**	**0.031 J**	**0.33**	**0.26 J**	**0.39**	**0.32 J**
C5 - C8 Aliphatic Hydrocarbons	--	< 75 U	< 75 U	< 75 U	ND	< 75 U	ND	**75**	**75**
C9 - C12 Aliphatic Hydrocarbons	--	< 25 U	< 25 U	< 25 U	ND	**71**	**71**	**74**	**74**
C9 - C10 Aromatic Hydrocarbons	--	< 25 U	< 25 U	< 25 U	ND	< 25 U	ND	< 25 U	ND
Total Petroleum Hydrocarbons[3]	46	**74**	**74**	**76**	**3.0**	**134**	**73**	**174**	**151**

	Location/Unit	Ambient		Unit #127					
	Area	Outdoor, Upwind	Outdoor, Crosswind	Crawlspace Beneath Bathroom		Living Room		Bathroom	
	Sample Type	Background, Reported	Background, Reported	Crawlspace, Reported	Crawlspace, Net[1]	Indoor Air, Reported	Indoor Air, Net[1]	Indoor Air, Reported	Indoor Air, Net[1]
	Sample ID	AMB-1-121521	AMB-2-121521	CS-127-121521	--	IA-127-1-121521	--	IA-127-2-121521	
Chemical Name	**MTCA Method B CUL[2] (Unrestricted Use)**								
Petroleum Hydrocarbon Related Volatile Organic Compounds (µg/m^3)									
Benzene	0.32	**0.43**	**0.45**	**0.49**	**0.06**	**0.39**	ND	**0.37**	ND
Toluene	2,300	< 19 U	< 19 U	< 19 U	ND	< 19 U	ND	< 19 U	ND
Ethylbenzene	460	< 0.43 U	< 0.43 U	< 0.43 U	ND	< 0.43 U	ND	< 0.43 U	ND
Total Xylenes	46	**1.0**	**1.2**	**1.5**	**0.5**	< 0.87 U	ND	< 0.87 U	ND
Naphthalene	0.074	**0.068 J**	< 0.057 J	**0.073 J**	**0.005 J**	**0.14**	**0.072 J**	**0.16**	**0.092 J**
C5 - C8 Aliphatic Hydrocarbons	--	< 75 U	< 75 U	< 75 U	ND	< 74 U	ND	< 74 U	ND
C9 - C12 Aliphatic Hydrocarbons	--	< 25 U	< 25 U	< 25 U	ND	**34**	**34**	**43**	**43**
C9 - C10 Aromatic Hydrocarbons	--	< 25 U	< 25 U	< 25 U	ND	< 25 U	ND	< 25 U	ND
Total Petroleum Hydrocarbons[3]	46	**74**	**74**	**74**	**0.6**	**94**	**34**	**103**	**43**

Notes:

(1) Adjusted results were calculated by subtracting the upwind ambient air result from the crawlspace or indoor air result. If the reported crawlspace or indoor air result was less than the upwind ambient air concentration or if a certain analyte was not detected in either the crawlspace or indoor air sample and the ambient air result, the adjusted value is shown as ND and summed as zero in the Total Petroleum Hydrocarbon calculation.

(2) Model Toxic Control Act (MTCA) Method B Indoor Air Cleanup Levels (CULs), including the generic Total Petroleum Hydrocarbons CUL.

(3) Total petroleum hydrocarbon (TPH) concentration is the sum total of volatile organic compounds and aliphatic and aromatic hydrocarbons; one-half of the laboratory reporting limit was used for non-detects in reported results. Non-detects in adjusted results (ND) were summed as zero.

Bold results indicate analyte was detected.

Blue-highlighted values exceed the MTCA Method B Indoor Air Cleanup Levels for Unrestricted Land Use; only ambient air, net crawlspace air, and net indoor air values are screened against the MTCA Method B Indoor Air Cleanup Levels.

µg/m^3 = micrograms per cubic meter

-- = not applicable

U - Analyte not detected at or above Reporting Limit (RL) shown

J - Result value estimated

Table 4. Ambient, Crawlspace, and Indoor Air Analytical Results - December 2021

Project No. 180357, Texaco Strickland Site, Lynnwood, Washington

	Location/Unit	Ambient		Unit #129					
	Area	Outdoor, Upwind	Outdoor, Crosswind	Crawlspace Beneath Bathroom		Living Room		Bathroom	
	Sample Type	Background, Reported	Background, Reported	Crawlspace, Reported	Crawlspace, Net[1]	Indoor Air, Reported	Indoor Air, Net[1]	Indoor Air, Reported	Indoor Air, Net[1]
	Sample ID	AMB-1-121521	AMB-2-121521	CS-129-121521	--	IA-129-1-121521	--	IA-129-2-121521	--
Chemical Name	**MTCA Method B CUL[2] (Unrestricted Use)**								
Petroleum Hydrocarbon Related Volatile Organic Compounds (µg/m^3)									
Benzene	0.32	**0.43**	**0.45**	**0.49**	**0.06**	**0.46**	**0.03**	**0.48**	**0.05**
Toluene	2,300	< 19 U	< 19 U	< 19 U	ND	< 19 U	ND	< 19 U	ND
Ethylbenzene	460	< 0.43 U	< 0.43 U	**0.54**	**0.54**	< 0.43 U	ND	< 0.43 U	ND
Total Xylenes	46	**1.0**	**1.2**	**3.0**	**1.97**	**1.6**	**0.57**	**1.5**	**0.5**
Naphthalene	0.074	**0.068 J**	< 0.057 J	**0.11**	**0.042 J**	**0.67**	**0.60 J**	**0.44**	**0.37 J**
C5 - C8 Aliphatic Hydrocarbons	--	< 75 U	< 75 U	< 75 U	ND	**170**	**170**	**130**	**130**
C9 - C12 Aliphatic Hydrocarbons	--	< 25 U	< 25 U	< 25 U	ND	**130**	**130**	**95**	**95**
C9 - C10 Aromatic Hydrocarbons	--	< 25 U	< 25 U	< 25 U	ND	< 25 U	ND	< 25 U	ND
Total Petroleum Hydrocarbons[3]	46	**74**	**74**	**76**	**2.6**	**325**	**301**	**250**	**226**

	Location/Unit	Ambient		Average Crawlspace Results		Unit #131			
	Area	Outdoor, Upwind	Outdoor, Crosswind	Average Crawlspace Results		Living Room			
	Sample Type	Background, Reported	Background, Reported	CS, Average, Reported	CS, Average, Net[1]	Indoor Air, Reported	Indoor Air, Net[1]	Indoor Air, Reported	Indoor Air, Net[1]
	Sample ID	AMB-1-121521	AMB-2-121521	--	-	IA-131-1-121521	--	IA-FD-121521	--
Chemical Name	**MTCA Method B CUL[2] (Unrestricted Use)**								
Petroleum Hydrocarbon Related Volatile Organic Compounds (µg/m^3)									
Benzene	0.32	**0.43**	**0.45**	**0.51**	**0.08**	**1.5**	**1.1**	**1.5**	**1.1**
Toluene	2,300	< 19 U	< 19 U	< 19 U	ND	< 19 U	ND	< 19 U	ND
Ethylbenzene	460	< 0.43 U	< 0.43 U	**0.44**	**0.44**	**0.57**	**0.57**	**0.58**	**0.58**
Total Xylenes	46	**1.0**	**1.2**	**2.6**	**1.6**	**2.3**	**1.3**	**2.4**	**1.4**
Naphthalene	0.074	**0.068 J**	< 0.057 J	**0.094 J**	**0.026 J**	**0.40**	**0.33 J**	**0.42**	**0.35 J**
C5 - C8 Aliphatic Hydrocarbons	--	< 75 U	< 75 U	< 75 U	ND	**110**	**110**	**120**	**120**
C9 - C12 Aliphatic Hydrocarbons	--	< 25 U	< 25 U	< 25 U	ND	**34**	**34**	**39**	**39**
C9 - C10 Aromatic Hydrocarbons	--	< 25 U	< 25 U	< 25 U	ND	< 25 U	ND	< 25 U	ND
Total Petroleum Hydrocarbons[3]	46	**74**	**74**	**76**	**2.1**	**171**	**147**	**186**	**162**

Notes:

(1) Net results were calculated by subtracting the upwind ambient air result from the crawlspace or indoor air result. If the reported crawlspace or indoor air result was less than the upwind ambient air concentration or if a certain analyte was not detected in either the crawlspace or indoor air sample and the ambient air result, the net value is shown as ND and summed as zero in the Total Petroleum Hydrocarbon calculation.

(2) Model Toxic Control Act (MTCA) Method B Indoor Air Cleanup Levels (CULs), including the generic Total Petroleum Hydrocarbons CUL.

(3) Total petroleum hydrocarbon (TPH) concentration is the sum total of volatile organic compounds and aliphatic and aromatic hydrocarbons; one-half of the laboratory reporting limit was used for non-detects in reported results. Non-detects in net results (ND) were summed as zero.

Bold results indicate analyte was detected.

Blue-highlighted values exceed the MTCA Method B Indoor Air Cleanup Levels for Unrestricted Land Use; only ambient air, net crawlspace air, and net indoor air values are screened against the MTCA Method B Indoor Air Cleanup Levels.

µg/m^3 = micrograms per cubic meter

-- = not applicable

U - Analyte not detected at or above Reporting Limit (RL) shown

J - Result value estimated

FIGURES

Crawlspace Air Sampling Location

Ambient Air Sampling Location

Soil Gas Probe

Soil Gas Probe (Not Sampled During This Event)

Aloha Cafe Building

Chri-Mar Apartment Building

Property Boundary

Former UST (Removed)

Existing UST (Closed-In-Place or Abandoned)

Tax Parcel

N

0 20 40

Feet

June 2021 Soil Gas and Air Sampling Locations

Texaco Strickland Site
6808 196th Street SW
Lynnwood, WA

Aspect Consulting	JAN-2022	BY: WVG / TDR	FIGURE NO. 1
	PROJECT NO. 180357	REVISED BY: WEG/SBM	

GIS Path: T:\projects_8\AlohaCafe\Delivered\January 2022\01 June 2021 Soil Gas and Air Sampling Locations.mxd || Coordinate System: NAD 1983 HARN StatePlane Washington North FIPS 4601 Feet || Date Saved: 1/26/2022 || User: tullen || Print Date: 1/26/2022

- Crawlspace Air Sampling Location
- Indoor Air Sampling Location
- Ambient Air Sampling Location
- Soil Gas Probe
- Soil Gas Probe (Not Sampled During This Event)
- Aloha Cafe Building
- Chri-Mar Apartment Building
- Property Boundary
- Former UST (Removed)
- Existing UST (Closed-In-Place or Abandoned)
- Tax Parcel

Note:

*** GP-5 was not sampled during the December 2021 sampling event. The screen of the gas probe was submerged due to seasonally high groundwater elevations.**

N

0 20 40

Feet

December 2021 Soil Gas and Air Sampling Locations

Texaco Strickland Site
6808 196th Street SW
Lynnwood, WA

Aspect CONSULTING	JAN-2022	BY: WVG / TDR	FIGURE NO. 2
	PROJECT NO. 180357	REVISED BY: WEG/SBM	

GIS Path: T:\projects_8\AlohaCafe\Delivered\January 2022\02 December 2021 Soil Gas and Air Sampling Locations.mxd || Coordinate System: NAD 1983 HARN StatePlane Washington North FIPS 4601 Feet || Date Saved: 1/26/2022 || User: trullen || Print Date: 1/26/2022

APPENDIX A

Laboratory Analytical Report and Data Validation Report

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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www.friedmanandbruya.com

January 5, 2022

Andrew Yonkofski, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Yonkofski:

Included are the results from the testing of material submitted on December 16, 2021 from the Texaco Strickland 180357, F&BI 112342 project. There are 46 pages included in this report.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Aspect Data
ASP0105R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on December 16, 2020 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Texaco Strickland 180357, F&BI 112342 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
112342 -01	IA-125-1-121521
112342 -02	IA-125-2-121521
112342 -03	CS-125-121521
112342 -04	CS-127-121521
112342 -05	CS-129-121521
112342 -06	AMB-1-121521
112342 -07	IA-131-1-121521
112342 -08	IA-FD-121521
112342 -09	IA-127-1-121521
112342 -10	IA-127-2-121521
112342 -11	IA-129-1-121521
112342 -12	IA-129-2-121521
112342 -13	AMB-2-121521
112342 -14	GP-02-121621
112342 -15	GP-03-121621
112342 -16	FD-121621
112342 -17	GP-06-121621
112342 -18	TB-121621

Non-petroleum compounds identified in the air phase hydrocarbon (APH) ranges were subtracted per the MA-APH method.

The APH EC5-8 aliphatics concentration in samples GP-03-121621 and FD-121621 exceeded the calibration range of the instrument. The data were flagged accordingly.

All quality control requirements were acceptable.

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-125-1-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-01
Date Analyzed:	12/20/21	Data File:	122015.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	71
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-125-2-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-02
Date Analyzed:	12/20/21	Data File:	122016.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	75
APH EC9-12 aliphatics	74
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	CS-125-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-03
Date Analyzed:	12/20/21	Data File:	122017.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	79	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	CS-127-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-04
Date Analyzed:	12/20/21	Data File:	122018.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	CS-129-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-05
Date Analyzed:	12/20/21	Data File:	122019.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	79	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	AMB-1-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-06
Date Analyzed:	12/20/21	Data File:	122020.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	79	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-131-1-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-07
Date Analyzed:	12/20/21	Data File:	122021.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	110
APH EC9-12 aliphatics	34
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-FD-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-08
Date Analyzed:	12/21/21	Data File:	122022.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	120
APH EC9-12 aliphatics	39
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-127-1-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-09
Date Analyzed:	12/21/21	Data File:	122023.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	78	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	34
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-127-2-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-10
Date Analyzed:	12/21/21	Data File:	122024.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	79	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	43
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-129-1-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-11
Date Analyzed:	12/21/21	Data File:	122025.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	89	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	170
APH EC9-12 aliphatics	130
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-129-2-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-12
Date Analyzed:	12/21/21	Data File:	122026.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	89	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	130
APH EC9-12 aliphatics	95
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	AMB-2-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-13
Date Analyzed:	12/21/21	Data File:	122027.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	78	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	GP-02-121621	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-14 1/5.3
Date Analyzed:	12/28/21	Data File:	122812.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<400
APH EC9-12 aliphatics	170
APH EC9-10 aromatics	<130

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	GP-03-121621	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-15 1/5.9
Date Analyzed:	12/28/21	Data File:	122813.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	100	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,600 ve
APH EC9-12 aliphatics	590
APH EC9-10 aromatics	<150

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	FD-121621	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-16 1/5.9
Date Analyzed:	12/28/21	Data File:	122814.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	100	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	3,400 ve
APH EC9-12 aliphatics	600
APH EC9-10 aromatics	<150

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	GP-06-121621	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-17 1/8.1
Date Analyzed:	12/28/21	Data File:	122815.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	88	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<610
APH EC9-12 aliphatics	510
APH EC9-10 aromatics	<200

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	TB-121621	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-18
Date Analyzed:	12/28/21	Data File:	122811.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	87	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	180357, F&BI 112342
Date Collected:	Not Applicable	Lab ID:	01-2855 MB
Date Analyzed:	12/28/21	Data File:	122810.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	180357, F&BI 112342
Date Collected:	Not Applicable	Lab ID:	01-2840 MB
Date Analyzed:	12/20/21	Data File:	122014.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	76	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-125-1-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-01
Date Analyzed:	12/20/21	Data File:	122015.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	87	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	0.41	0.13
Toluene	<19	<5
Ethylbenzene	0.63	0.14
m,p-Xylene	1.4	0.32
o-Xylene	0.61	0.14
Naphthalene	0.33	0.062

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-125-2-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-02
Date Analyzed:	12/20/21	Data File:	122016.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	88	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	0.39	0.12
Toluene	<19	<5
Ethylbenzene	0.59	0.14
m,p-Xylene	1.4	0.31
o-Xylene	0.58	0.13
Naphthalene	0.39	0.074

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	CS-125-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-03
Date Analyzed:	12/20/21	Data File:	122017.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3	ppbv
Benzene	0.56	0.17
Toluene	<19	<5
Ethylbenzene	0.56	0.13
m,p-Xylene	2.8	0.64
o-Xylene	0.45	0.10
Naphthalene	0.099 j	0.019 j

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	CS-127-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-04
Date Analyzed:	12/20/21	Data File:	122018.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	87	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	0.49	0.15
Toluene	<19	<5
Ethylbenzene	<0.43	<0.1
m,p-Xylene	1.5	0.35
o-Xylene	<0.43	<0.1
Naphthalene	0.073 j	0.014 j

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	CS-129-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-05
Date Analyzed:	12/20/21	Data File:	122019.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3	ppbv
Benzene	0.49	0.15
Toluene	<19	<5
Ethylbenzene	0.54	0.12
m,p-Xylene	2.3	0.53
o-Xylene	0.67	0.15
Naphthalene	0.11	0.021

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	AMB-1-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-06
Date Analyzed:	12/20/21	Data File:	122020.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3	ppbv
Benzene	0.43	0.14
Toluene	<19	<5
Ethylbenzene	<0.43	<0.1
m,p-Xylene	1.0	0.23
o-Xylene	<0.43	<0.1
Naphthalene	0.068 j	0.013 j

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-131-1-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-07
Date Analyzed:	12/20/21	Data File:	122021.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	88	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	1.5	0.46
Toluene	<19	<5
Ethylbenzene	0.57	0.13
m,p-Xylene	1.8	0.43
o-Xylene	0.52	0.12
Naphthalene	0.40	0.077

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-FD-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-08
Date Analyzed:	12/21/21	Data File:	122022.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	87	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	1.5	0.47
Toluene	<19	<5
Ethylbenzene	0.58	0.13
m,p-Xylene	1.9	0.43
o-Xylene	0.53	0.12
Naphthalene	0.42	0.080

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-127-1-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-09
Date Analyzed:	12/21/21	Data File:	122023.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3	ppbv
Benzene	0.39	0.12
Toluene	<19	<5
Ethylbenzene	<0.43	<0.1
m,p-Xylene	<0.87	<0.2
o-Xylene	<0.43	<0.1
Naphthalene	0.14	0.027

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-127-2-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-10
Date Analyzed:	12/21/21	Data File:	122024.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3	ppbv
Benzene	0.37	0.11
Toluene	<19	<5
Ethylbenzene	<0.43	<0.1
m,p-Xylene	<0.87	<0.2
o-Xylene	<0.43	<0.1
Naphthalene	0.16	0.031

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-129-1-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-11
Date Analyzed:	12/21/21	Data File:	122025.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	97	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	0.46	0.14
Toluene	<19	<5
Ethylbenzene	<0.43	<0.1
m,p-Xylene	1.1	0.24
o-Xylene	0.47	0.11
Naphthalene	0.67	0.13

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-129-2-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-12
Date Analyzed:	12/21/21	Data File:	122026.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	97	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	0.48	0.15
Toluene	<19	<5
Ethylbenzene	<0.43	<0.1
m,p-Xylene	1.0	0.24
o-Xylene	0.45	0.10
Naphthalene	0.44	0.083

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	AMB-2-121521	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-13
Date Analyzed:	12/21/21	Data File:	122027.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3	ppbv
Benzene	0.45	0.14
Toluene	<19	<5
Ethylbenzene	<0.43	<0.1
m,p-Xylene	1.2	0.27
o-Xylene	<0.43	<0.1
Naphthalene	<0.057 j	<0.011 j

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	GP-02-121621	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-14 1/5.3
Date Analyzed:	12/28/21	Data File:	122812.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	3.5	1.1
Toluene	<100	<26
Ethylbenzene	<2.3	<0.53
m,p-Xylene	<4.6	<1.1
o-Xylene	<2.3	<0.53
Naphthalene	<1.4	<0.26

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	GP-03-121621	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-15 1/5.9
Date Analyzed:	12/28/21	Data File:	122813.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	102	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	<1.9	<0.59
Toluene	<110	<29
Ethylbenzene	<2.6	<0.59
m,p-Xylene	6.5	1.5
o-Xylene	3.0	0.68
Naphthalene	<1.5	<0.29

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	FD-121621	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-16 1/5.9
Date Analyzed:	12/28/21	Data File:	122814.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	103	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	<1.9	<0.59
Toluene	<110	<29
Ethylbenzene	<2.6	<0.59
m,p-Xylene	6.2	1.4
o-Xylene	3.0	0.68
Naphthalene	<1.5	<0.29

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	GP-06-121621	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-17 1/8.1
Date Analyzed:	12/28/21	Data File:	122815.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	89	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	<2.6	<0.81
Toluene	<150	<40
Ethylbenzene	<3.5	<0.81
m,p-Xylene	<7	<1.6
o-Xylene	<3.5	<0.81
Naphthalene	<2.1	<0.4

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	TB-121621	Client:	Aspect Consulting, LLC
Date Received:	12/16/21	Project:	180357, F&BI 112342
Date Collected:	12/15/21	Lab ID:	112342-18
Date Analyzed:	12/28/21	Data File:	122811.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	89	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	<0.32	<0.1
Toluene	<19	<5
Ethylbenzene	<0.43	<0.1
m,p-Xylene	<0.87	<0.2
o-Xylene	<0.43	<0.1
Naphthalene	<0.26	<0.05

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	180357, F&BI 112342
Date Collected:	Not Applicable	Lab ID:	01-2855 MB
Date Analyzed:	12/28/21	Data File:	122810.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	<0.32	<0.1
Toluene	<19	<5
Ethylbenzene	<0.43	<0.1
m,p-Xylene	<0.87	<0.2
o-Xylene	<0.43	<0.1
Naphthalene	<0.26	<0.05

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	180357, F&BI 112342
Date Collected:	Not Applicable	Lab ID:	01-2840 MB
Date Analyzed:	12/20/21	Data File:	122014.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3	ppbv
Benzene	<0.32	<0.1
Toluene	<19	<5
Ethylbenzene	<0.43	<0.1
m,p-Xylene	<0.87	<0.2
o-Xylene	<0.43	<0.1
Naphthalene	<0.057 j	<0.011 j

Date of Report: 01/05/22
Date Received: 12/16/21
Project: Texaco Strickland 180357, F&BI 112342

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD MA-APH

Laboratory Code: 112287-01 1/18 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
APH EC5-8 aliphatics	ug/m3	1,700	2,600	42 vo
APH EC9-12 aliphatics	ug/m3	9,200	9,200	0
APH EC9-10 aromatics	ug/m3	<450	<450	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	67	87	70-130
APH EC9-12 aliphatics	ug/m3	67	119	70-130
APH EC9-10 aromatics	ug/m3	67	119	70-130

Date of Report: 01/05/22
Date Received: 12/16/21
Project: Texaco Strickland 180357, F&BI 112342

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD MA-APH

Laboratory Code: 112145-01 1/5.5 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
APH EC5-8 aliphatics	ug/m3	600	560	7
APH EC9-12 aliphatics	ug/m3	170	170	0
APH EC9-10 aromatics	ug/m3	<140	<140	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	67	81	70-130
APH EC9-12 aliphatics	ug/m3	67	98	70-130
APH EC9-10 aromatics	ug/m3	67	102	70-130

Date of Report: 01/05/22
Date Received: 12/16/21
Project: Texaco Strickland 180357, F&BI 112342

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

Laboratory Code: 112287-01 1/18 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Benzene	ug/m3	29	28	4
Toluene	ug/m3	<340	<340	nm
Ethylbenzene	ug/m3	7.8	7.8	0
m,p-Xylene	ug/m3	21	21	0
o-Xylene	ug/m3	9.9	9.8	1
Naphthalene	ug/m3	62	64	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/m3	43	97	70-130
Toluene	ug/m3	51	87	70-130
Ethylbenzene	ug/m3	59	94	70-130
m,p-Xylene	ug/m3	120	93	70-130
o-Xylene	ug/m3	59	99	70-130
Naphthalene	ug/m3	71	81	70-130

Date of Report: 01/05/22
Date Received: 12/16/21
Project: Texaco Strickland 180357, F&BI 112342

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

Laboratory Code: 112145-01 1/5.5 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Benzene	ug/m3	<1.8	<1.8	nm
Toluene	ug/m3	<100	<100	nm
Ethylbenzene	ug/m3	<2.4	<2.4	nm
m,p-Xylene	ug/m3	<4.8	<4.8	nm
o-Xylene	ug/m3	<2.4	<2.4	nm
Naphthalene	ug/m3	<1.4	<1.4	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/m3	43	95	70-130
Toluene	ug/m3	51	107	70-130
Ethylbenzene	ug/m3	59	102	70-130
m,p-Xylene	ug/m3	120	110	70-130
o-Xylene	ug/m3	59	115	70-130
Naphthalene	ug/m3	71	115	70-130

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SAMPLE CHAIN OF CUSTODY

112342

Report To Andrew Yonkofski

Company Aspect Consulting

Address

City, State, ZIP

Phone Email

SAMPLERS (signature) B Cln

ME 12-16-21

Page # 1 of 3

PROJECT NAME & ADDRESS: Texaco Strickland

PO # 180357

NOTES:

INVOICE TO

TURNAROUND TIME
- [x] Standard
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Default: Clean after 3 days
- [ ] Archive (Fee may apply)

SAMPLE INFORMATION

Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	ANALYSIS REQUESTED: TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium		Notes
IA-125-1-121521	01	20543	07846	(IA) / SG	12/15/21	>30	1107	7	0844		X		X			
IA-125-2-121521	02	35331	15212	(IA) / SG		29	1108	8	0845							
CS-125-121521	03	40705	15219	(IA) / SG		29	1126	7	0925							
CS-127-121521	04	37235	15209	(IA) / SG		29	1126	8	0927							
CS-129-121521	05	23230	15218	(IA) / SG		28	1120	6	0929							
AMB-1-121521	06	40711	15210	(IA) / SG		29	1121	6	0938							
IA-131-1-121521	07	21437	07870	(IA) / SG		30	1112	7.5	0833							
IA-FD-121521	08	40703	15215	(IA) / SG		>30	1112	9	0833							

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: B Cln	Baxter Cohn	Aspect	12/16/21	1515
Received by:	Michael Erochi	FiBrn	12/16/21	1515
Relinquished by:				
Received by:		Samples received at 18°C		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SAMPLE CHAIN OF CUSTODY

ME 12-16-21

Page # 2 of 3

Report To Andrew Yunkofski

11234 Company Aspect Consulting

Address

City, State, ZIP

Phone Email

SAMPLERS (signature) B Cm

PROJECT NAME & ADDRESS: Texaco Strickland

PO # 180357

NOTES:

INVOICE TO

TURNAROUND TIME
- [X] Standard
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Default: Clean after 3 days
- [ ] Archive (Fee may apply)

SAMPLE INFORMATION

Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	ANALYSIS REQUESTED: TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium		Notes
IA-127-1-121521	09	18573	05351	(IA) / SG	12/15/21	>30	1056	8	0902		X		X			
IA-127-2-121521	10	20549	15217	(IA) / SG		29	1055	7	0903							
IA-129-1-121521	11	40702	15216	(IA) / SG		29	1108	8	0854							
IA-129-2-121521	12	37203	15214	(IA) / SG		29	1059	9.5	0855							
AMB-2-121521	13	18576	08183	(IA) / SG		30	1106	7	0942							
GP-02-121621	14	3675	305	IA / (SG)	12/16/21	>30	1111	5	1117				X			
BC ~~GP-05-121621~~		~~2305~~	~~255~~	IA / (SG)												
GP-03-121621	15	2434	241	IA / (SG)		30	1201	5	1214							

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: B Cm	Brandon Cavil	Aspect	12/16/21	1515
Received by:	Michael Ezell	FB	1	1
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COCTO-15.DOC

SIMPLE CHAIN OF CUSTODY

Report To Andrew Yankofski
Company Aspect consulting
Address
City, State, ZIP
Phone Email

SAMPLERS (signature) B CM MC 12-16-21 Page # 3 of 3

PROJECT NAME & ADDRESS: Texaco Strickland
PO # 180357
NOTES:
INVOICE TO

TURNAROUND TIME
☒ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Default: Clean after 3 days
☐ Archive (Fee may apply)

SAMPLE INFORMATION / ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium		Notes
FD-121621	16	3255	308	IA / (SG)	12/16/21	29	1216	5	1221		X		X	X		
GP-06-121621	17	3260	303	IA / (SG)	↓	28	1217	12	1257		↓		↓	↓		
TB-121621	18	2437	244	IA / (SG)	↓	—	—	—	—		↓		↓			
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: B CM	Barrie CM	Aspect	12/16/21	1515
~~Received by:~~	Michael Endahl	FaBa	12/16/21	1515
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Aspect Consulting LLC
701 Second Ave., Suite 550
Seattle, WA 98104
ATTN: Jason Yabandeh
jyabandeh@aspectconsulting.com

February 7, 2022

SUBJECT: Aloha Café, Data Validation

Dear Mr. Yabandeh,

Enclosed are the final validation reports for the fractions listed below. This SDG was received on January 10, 2022. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #53142:

SDG #	Fraction
112342	Volatiles

The data validation was performed under Stage 2A guidelines. The analyses were validated using the following documents, as applicable to each method:

- Appendix E, CEMC Review Draft, Sampling and Analysis/Quality Assurance Project Plan (February 2019)
- USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (November 2020)

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
Project Manager/Senior Chemist
crink@lab-data.com

50 pages-EM

Attachment 1

Stage 2A EDD

LDC# 53142 (Aspect Consulting, LLC - Seattle, WA / Aloha Cafe)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (TO-15)		VOA (MA-APH)																															
Matrix: Air/Soil				A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
A	112342	01/10/22	01/31/22	18	0	18	0																														
Total	T/CR			18	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36

Shaded cells indicate Stage 4 validation (all other cells are Stage 2A validation). These sample counts do not include MS, MSD, or DUP's. V:\LOGIN\Aspect Consulting\Aloha Cafe\53142ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Aloha Café

LDC Report Date: February 3, 2022

Parameters: Volatiles

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc., Seattle, WA

Sample Delivery Group (SDG): 112342

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
IA-125-1-121521	112342-01	Air	12/15/21
IA-125-2-121521	112342-02	Air	12/15/21
CS-125-121521	112342-03	Air	12/15/21
CS-127-121521	112342-04	Air	12/15/21
CS-129-121521	112342-05	Air	12/15/21
AMB-1-121521	112342-06	Air	12/15/21
IA-131-1-121521	112342-07	Air	12/15/21
IA-FD-121521	112342-08	Air	12/15/21
IA-127-1-121521	112342-09	Air	12/15/21
IA-127-2-121521	112342-10	Air	12/15/21
IA-129-1-121521	112342-11	Air	12/15/21
IA-129-2-121521	112342-12	Air	12/15/21
AMB-2-121521	112342-13	Air	12/15/21
GP-02-121621	112342-14	Air	12/16/21
GP-03-121621	112342-15	Air	12/16/21
FD-121621	112342-16	Air	12/16/21
GP-06-121621	112342-17	Air	12/16/21
TB-121621	112342-18	Air	12/16/21

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Appendix E, CEMC Review Draft, Sampling and Analysis/Quality Assurance Project Plan (February 2019) and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (November 2020). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) Method TO-15

All sample results were subjected to Stage 2A data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U (Non-detected): The analyte was analyzed for but was determined to be non-detect above the reported sample quantitation limit, or the quantitation limit was raised to the concentration found in the sample due to blank contamination.

UJ (Non-detected estimated): The analyte was not detected above the reported quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R (Rejected): The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet QC criteria. The presence or absence of the analyte cannot be verified.

DNR (Do Not Report): Do not report from this analysis; the result for this analyte is to be reported from an alternative analysis.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

The canisters were properly pressurized and handled.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample TB-121621 was identified as a trip blank. No contaminants were found.

Samples AMB-1-121521 and AMB-2-121521 were identified as ambient blanks. No contaminants were found with the following exceptions:

Blank ID	Analyte	Concentration
AMB-1-121521	Benzene m,p-Xylenes Naphthalene	0.43 ug/m^3 1.0 ug/m^3 0.068 ug/m^3
AMB-2-121521	Benzene m,p-Xylenes	0.45 ug/m^3 1.2 ug/m^3

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

Samples IA-131-1-121521 and IA-FD-121521 and samples GP-03-121621 and FD-121621 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/m³)		RPD (Limits)	Difference (Limits)
	IA-131-1-121521	IA-FD-121521		
Benzene	1.5	1.5	-	0.00 (≤0.64)
Ethylbenzene	0.57	0.58	-	0.01 (≤0.86)
m,p-Xylenes	1.8	1.9	-	0.1 (≤0.74)
o-Xylene	0.52	0.53	-	0.01 (≤0.86)
Naphthalene	0.40	0.42	-	0.02 (≤0.52)

Analyte	Concentration (ug/m³)		RPD (Limits)	Difference (Limits)
	GP-03-121621	FD-121621		
m,p-Xylenes	6.5	6.2	5 (≤35)	-
o-Xylene	3.0	3.0	0 (≤35)	-

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Target Analyte Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Analyte Identification

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Leak Check Compounds

The leak check compound, Helium, was not detected in samples.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Aloha Café
Volatiles - Data Qualification Summary - SDG 112342

No Sample Data Qualified in this SDG

Aloha Café
Volatiles - Laboratory Blank Data Qualification Summary - SDG 112342

No Sample Data Qualified in this SDG

Aloha Café
Volatiles - Field Blank Data Qualification Summary - SDG 112342

No Sample Data Qualified in this SDG

LDC #: 53142A48a **VALIDATION COMPLETENESS WORKSHEET** Date: 01/28/22
SDG #: 112342 Stage 2A Page: 1 of 1
Laboratory: Friedman & Bruya, Inc., Seattle, WA Reviewer: JVL
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA Method TO-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	SW	TB = 18 AB = 6, 13
VII.	Surrogate spikes	~~N~~ A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	SW	D = 7/8, 15/16
XI.	Internal standards	N	
XII.	Target analyte quantitation	N	
XIII.	Target analyte identification	N	
XIV.	System performance	N	
XV.	Leak Check Compounds	N	
XVI.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID		Lab ID	Matrix	Date
1	IA-125-1-121521		112342-01	Air	12/15/21
2	IA-125-2-121521		112342-02	Air	12/15/21
3	CS-125-121521		112342-03	Air	12/15/21
4	CS-127-121521		112342-04	Air	12/15/21
5	CS-129-121521		112342-05	Air	12/15/21
6	AMB-1-121521		112342-06	Air	12/15/21
7	IA-131-1-121521	D	112342-07	Air	12/15/21
8	IA-FD-121521	D	112342-08	Air	12/15/21
9	IA-127-1-121521		112342-09	Air	12/15/21
10	IA-127-2-121521		112342-10	Air	12/15/21
11	IA-129-1-121521		112342-11	Air	12/15/21
12	IA-129-2-121521		112342-12	Air	12/15/21
13	AMB-2-121521		112342-13	Air	12/15/21

LDC #: 53142A48a **VALIDATION COMPLETENESS WORKSHEET** Date: 01/28/22
SDG #: 112342 Stage 2A Page: 2 of 2
Laboratory: Friedman & Bruya, Inc., Seattle, WA Reviewer: SVG
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA Method TO-15)

	Client ID	Lab ID	Matrix	Date
14	GP-02-121621	112342-14	Air	12/16/21
15	GP-03-121621	112342-15	Air	12/16/21
16	FD-121621	112342-16	Air	12/16/21
17	GP-06-121621	112342-17	Air	12/16/21
18	TB-121621	112342-18	Air	12/16/21
19				
20				
21				

Notes:

-	01-2840-IMB						
	01-2855-I						

(BTEX + Naphthalene only)

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2. 1,2,4,5-Tetramethylbenzene
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1. P-Diethylbenzene	Z2.

LDC #: 53142A48a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: JVG

METHOD: GC/MS VOA (EPA Method TO-15)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

Sample: 6 Field Blank / Other AB

Compound	Concentration units (ug/m3)
V	0.43
RRR	1.0
MMM	0.068

Sample: 13 Field Blank / Other AB

Compound	Concentration units (ug/m3)
V	0.45
RRR	1.2

Sample: _____ Field Blank / Other _____

Compound	Concentration units ( )

LDC#: 53142A48a

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: JVG

METHOD: GCMS VOA (EPA Method TO15)

Compound	Concentration (ug/m3		RPD (≤35%)	Difference (ug/m3	Limits (±2xLOQ)	Qualifications (Parent Only)
	7	8				
V	1.5	1.5		0.00	≤0.64	
EE	0.57	0.58		0.01	≤0.86	
RRR	1.8	1.9		0.1	≤1.74	
SSS	0.52	0.53		0.01	≤0.86	
MMM	0.40	0.42		0.02	≤0.52	

Compound	Concentration (ug/m3		RPD (≤35%)	Difference (ug/m3	Limits (±2xLOQ)	Qualifications (Parent Only)
	15	16				
RRR	6.5	6.2	5			
SSS	3.0	3.0	0			

V:\Josephine\FIELD DUPLICATES\53142A48a aspect aloha diff.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Aloha Café

LDC Report Date: February 4, 2022

Parameters: Volatiles

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc., Seattle, WA

Sample Delivery Group (SDG): 112342

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
IA-125-1-121521	112342-01	Air	12/15/21
IA-125-2-121521	112342-02	Air	12/15/21
CS-125-121521	112342-03	Air	12/15/21
CS-127-121521	112342-04	Air	12/15/21
CS-129-121521	112342-05	Air	12/15/21
AMB-1-121521	112342-06	Air	12/15/21
IA-131-1-121521	112342-07	Air	12/15/21
IA-FD-121521	112342-08	Air	12/15/21
IA-127-1-121521	112342-09	Air	12/15/21
IA-127-2-121521	112342-10	Air	12/15/21
IA-129-1-121521	112342-11	Air	12/15/21
IA-129-2-121521	112342-12	Air	12/15/21
AMB-2-121521	112342-13	Air	12/15/21
GP-02-121621	112342-14	Air	12/16/21
GP-03-121621	112342-15	Air	12/16/21
FD-121621	112342-16	Air	12/16/21
GP-06-121621	112342-17	Air	12/16/21
TB-121621	112342-18	Air	12/16/21

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Appendix E, CEMC Review Draft, Sampling and Analysis/Quality Assurance Project Plan (February 2019) and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (November 2020). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) by MA-APH

All sample results were subjected to Stage 2A data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U (Non-detected): The analyte was analyzed for but was determined to be non-detect above the reported sample quantitation limit, or the quantitation limit was raised to the concentration found in the sample due to blank contamination.

UJ (Non-detected estimated): The analyte was not detected above the reported quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R (Rejected): The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet QC criteria. The presence or absence of the analyte cannot be verified.

DNR (Do Not Report): Do not report from this analysis; the result for this analyte is to be reported from an alternative analysis.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

The canisters were properly pressurized and handled.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample TB-121621 was identified as a trip blank. No contaminants were found.

Samples AMB-1-121521 and AMB-2-121521 were identified as ambient blanks. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

Samples IA-131-1-121521 and IA-FD-121521 and samples GP-03-121621 and FD-121621 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/m³)		RPD (Limits)	Difference (Limits)
	IA-131-1-121521	IA-FD-121521		
APH EC5-8 aliphatics	110	120	-	10.00 (≤150)
APH EC9-12 aliphatics	34	39	-	5 (≤50)

Analyte	Concentration (ug/m³)		RPD (Limits)	Difference (Limits)
	GP-03-121621	FD-121621		
APH EC5-8 aliphatics	3600	3400	6 (≤35)	-
APH EC9-12 aliphatics	590	600	2 (≤35)	-

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Target Analyte Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Analyte Identification

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Aloha Café
Volatiles - Data Qualification Summary - SDG 112342

No Sample Data Qualified in this SDG

Aloha Café
Volatiles - Laboratory Blank Data Qualification Summary - SDG 112342

No Sample Data Qualified in this SDG

Aloha Café
Volatiles - Field Blank Data Qualification Summary - SDG 112342

No Sample Data Qualified in this SDG

LDC #: 53142A48b **VALIDATION COMPLETENESS WORKSHEET** Date: 01/28/22
SDG #: 112342 Stage 2A Page: 1 of 7
Laboratory: Friedman & Bruya, Inc., Seattle, WA Reviewer: NV
2nd Reviewer:

METHOD: GC/MS Volatiles (MA-APH)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	TB = 18 AB = 6, 13
VII.	Surrogate spikes	~~N~~ A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	SW	D = 7/8, 15/16
XI.	Internal standards	N	
XII.	Target analyte quantitation	N	
XIII.	Target analyte identification	N	
XIV.	System performance	N	
XV.	Leak Check Compounds	N	
XVI	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	IA-125-1-121521	112342-01	Air	12/15/21
2	IA-125-2-121521	112342-02	Air	12/15/21
3	CS-125-121521	112342-03	Air	12/15/21
4	CS-127-121521	112342-04	Air	12/15/21
5	CS-129-121521	112342-05	Air	12/15/21
6	AMB-1-121521	112342-06	Air	12/15/21
7	IA-131-1-121521 D1	112342-07	Air	12/15/21
8	IA-FD-121521 D1	112342-08	Air	12/15/21
9	IA-127-1-121521	112342-09	Air	12/15/21
10	IA-127-2-121521	112342-10	Air	12/15/21
11	IA-129-1-121521	112342-11	Air	12/15/21
12	IA-129-2-121521	112342-12	Air	12/15/21
13	AMB-2-121521	112342-13	Air	12/15/21

LDC #: 53142A48b

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 01/28/22

SDG #: 112342

Page: 2 of 2

Laboratory: Friedman & Bruya, Inc., Seattle, WA

Reviewer: SVG

2nd Reviewer:

METHOD: GC/MS Volatiles (MA-APH)

	Client ID	Lab ID	Matrix	Date
14	GP-02-121621	112342-14	Air	12/16/21
15	GP-03-121621 Dr	112342-15	Air	12/16/21
16	FD-121621 Dr	112342-16	Air	12/16/21
17	GP-06-121621	112342-17	Air	12/16/21
18	TB-121621	112342-18	Air	12/16/21
19				
20				
21				

Notes:

-1	01-2855 MB						
-2	01-2856 - ↓						

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene	A2. 1,2,4,5-Tetramethylbenzene
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane	B2.
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane	C2.
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene	D2.
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11	E2.
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12	F2.
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113	G2.
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114	H2.
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane	I2.
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide	J2.
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane	K2.
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane	L2.
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane	M2.
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane	N2.
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane	O2.
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane	P2.
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane	Q2.
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane	R2.
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane	S2.
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane	T2.
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal	U2.
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene	V2.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol	W2.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene	X2.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol	Y2.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1. P-Diethylbenzene	Z2.

LDC#: 53142A48b

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: JVG

METHOD: GCMS VOA (MA-APH)

Compound	Concentration (ug/m3)		RPD (≤35%)	Difference (ug/m3	Limits (±2xQ)	Qualifications (Parent Only)
	7	8				
APH EC5-8 aliphatics	110	120		10.00	≤150	
APH EC9-12 aliphatics	34	39		5	≤ 50	

Compound	Concentration (ug/m3)		RPD (≤35%)	Difference (ug/m3	Limits (±2xQ)	Qualifications (Parent Only)
	15	16				
APH EC5-8 aliphatics	3600	3400	6			
APH EC9-12 aliphatics	590	600	2			

V:\Josephine\FIELD DUPLICATES\53142A48b aspect aloha diff.wpd

APPENDIX B

Report Limitations and Guidelines for Use

REPORT LIMITATIONS AND USE GUIDELINES

Reliance Conditions for Third Parties

This report was prepared for the exclusive use of the Client. No other party may rely on this report or the product of our services without the express written consent of Aspect Consulting, LLC (Aspect). This limitation is to provide our firm with reasonable protection against liability claims by third parties with whom there would otherwise be no contractual conditions or limitations and guidelines governing their use of the report. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and recognized standards of professionals in the same locality and involving similar conditions.

Services for Specific Purposes, Persons and Projects

Aspect has performed the services in general accordance with the scope and limitations of our Agreement. This report has been prepared for the exclusive use of the Client and their authorized third parties, approved in writing by Aspect. This report is not intended for use by others, and the information contained herein is not applicable to other properties.

This report is not, and should not, be construed as a warranty or guarantee regarding the presence or absence of hazardous substances or petroleum products that may affect the subject property. The report is not intended to make any representation concerning title or ownership to the subject property. If real property records were reviewed, they were reviewed for the sole purpose of determining the subject property's historical uses. All findings, conclusions, and recommendations stated in this report are based on the data and information provided to Aspect, current use of the subject property, and observations and conditions that existed on the date and time of the report.

Aspect structures its services to meet the specific needs of our clients. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and subject property. This report should not be applied for any purpose or project except the purpose described in the Agreement.

This Report Is Project-Specific

Aspect considered a number of unique, project-specific factors when establishing the Scope of Work for this project and report. You should not rely on this report if it was:

- Not prepared for you
- Not prepared for the specific purpose identified in the Agreement
- Not prepared for the specific real property assessed
- Completed before important changes occurred concerning the subject property, project or governmental regulatory actions

If changes are made to the project or subject property after the date of this report, Aspect should be retained to assess the impact of the changes with respect to the conclusions contained in the report.

Geoscience Interpretations

The geoscience practices (geotechnical engineering, geology, and environmental science) require interpretation of spatial information that can make them less exact than other engineering and natural science disciplines. It is important to recognize this limitation in evaluating the content of the report. If you are unclear how these "Report Limitations and Use Guidelines" apply to your project or site, you should contact Aspect.

Discipline-Specific Reports Are Not Interchangeable

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually address any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding the subject property.

Environmental Regulations Are Not Static

Some hazardous substances or petroleum products may be present near the subject property in quantities or under conditions that may have led, or may lead, to contamination of the subject property, but are not included in current local, state or federal regulatory definitions of hazardous substances or petroleum products or do not otherwise present potential liability. Changes may occur in the standards for appropriate inquiry or regulatory definitions of hazardous substance and petroleum products; therefore, this report has a limited useful life.

Property Conditions Change Over Time

This report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time (for example, Phase I ESA reports are applicable for 180 days), by events such as a change in property use or occupancy, or by natural events, such as floods, earthquakes, slope failure or groundwater fluctuations. If more than six months have passed since issuance of our report, or if any of the described events may have occurred following the issuance of the report, you should contact Aspect so that we may evaluate whether changed conditions affect the continued reliability or applicability of our conclusions and recommendations.

Phase I ESAs – Uncertainty Remains After Completion

Aspect has performed the services in general accordance with the scope and limitations of our Agreement and the current version of the "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process", ASTM E1527, and U.S. Environmental Protection Agency (EPA)'s Federal Standard 40 CFR Part 312 "Innocent Landowners, Standards for Conducting All Appropriate Inquiries".

No ESA can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with subject property. Performance of an ESA study is intended to reduce, but not eliminate, uncertainty regarding the potential for environmental conditions affecting the subject property. There is always a potential that areas with contamination that were not identified during this ESA exist at the subject property or in the study area. Further evaluation of such potential would require additional research, subsurface exploration, sampling and/or testing.

Historical Information Provided by Others

Aspect has relied upon information provided by others in our description of historical conditions and in our review of regulatory databases and files. The available data does not provide definitive information with regard to all past uses, operations or incidents affecting the subject property or adjacent properties. Aspect makes no warranties or guarantees regarding the accuracy or completeness of information provided or compiled by others.

Exclusion of Mold, Fungus, Radon, Lead, and HBM

Aspect's services do not include the investigation, detection, prevention or assessment of the presence of molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts. Accordingly, this report does not include any interpretations, recommendations, findings, or conclusions regarding the detection, assessment, prevention or abatement of molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts. Aspect's services also do not include the investigation or assessment of hazardous building materials (HBM) such as asbestos, polychlorinated biphenyls (PCBs) in light ballasts, lead based paint, asbestos-containing building materials, urea-formaldehyde insulation in on-site structures or debris or any other HBMs. Aspect's services do not include an evaluation of radon or lead in drinking water, unless specifically requested.