

# VAPOR INTRUSION ASSESSMENT REPORT

Texaco Strickland Site

Prepared for: Strickland Real Estate Holdings, LLC

Project No. 180357 • March 8, 2022 • AGENCY REVIEW DRAFT



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Aspect Consulting, LLC

**Andrew Yonkofski, LHG**  
Senior Hydrogeologist  
ayonkofski@aspectconsulting.com

**Adam Griffin, PE**  
Associate Engineer  
agriffin@aspectconsulting.com

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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

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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-dibromomethane (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).<sup>1</sup> 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).

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<sup>1</sup> 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 ( $\mu\text{g}/\text{m}^3$ ) 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  $46 \mu\text{g}/\text{m}^3$ , resulting in a generic subslab soil gas screening level of  $1,500 \mu\text{g}/\text{m}^3$  (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

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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  $\mu\text{g}/\text{m}^3$  at gas probes GP-01 or GP-04 (Table 1).

## 2.3 November 2020 Delineation of Site Soil Gas Impacts

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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<sup>2</sup>, 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<sup>2</sup> 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<sup>2</sup> in the Chri-Mar Apartments building to the south at the two locations where indoor air samples were collected. Additionally, Aspect proposed

<sup>2</sup> 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

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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) canisters prepared under negative pressure and lab-certified clean for VOCs. The canisters 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 canisters was monitored, and sampling concluded when each canister 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

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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

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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 canisters prepared under negative pressure and lab-certified clean for VOCs. The canisters were equipped with dedicated flow regulators set at a fill rate set for an approximate 24-hour sampling event.

The pressure in each canister 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 canister 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 raccoons 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

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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

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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 is 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 is included as Appendix A. Upwind of the Chri-Mar Apartments building at location AMB-1, benzene was detected at a concentration of  $0.43 \mu\text{g}/\text{m}^3$ , which exceeds the MTCA Method B indoor air cleanup level of  $0.32 \mu\text{g}/\text{m}^3$ . 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  $\mu\text{g}/\text{m}^3$ , which is comparable to the MTCA Method B indoor air cleanup level of 0.074  $\mu\text{g}/\text{m}^3$ .

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 is 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 is 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<sup>3</sup>, a crawlspace air sample was not collected from directly beneath Unit #131. Given the open-air exchange of the crawlspace, an

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<sup>3</sup> 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 (µg/m <sup>3</sup> )	Ecology Indoor Air Cleanup Levels (µg/m <sup>3</sup> )	Range of Potential Background Concentrations (µg/m <sup>3</sup> )
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

DRAFT - UNVALIDATED PRELIMINARY DATA

Analyte	Unit	MTCA Method B Subslab Soil Gas SL <sup>(1)</sup>	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
Petroleum Hydrocarbon Related Volatile Organic Compounds (µg/m <sup>3</sup> )																		Probe Submerged; No Sample Collected <sup>(3)</sup>						
Benzene	µg/m <sup>3</sup>	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/m <sup>3</sup>	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/m <sup>3</sup>	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/m <sup>3</sup>	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/m <sup>3</sup>	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/m <sup>3</sup>	--	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/m <sup>3</sup>	--	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/m <sup>3</sup>	--	< 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 <sup>(2)</sup>	µg/m <sup>3</sup>	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/m<sup>3</sup> - 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					
<b>Total Petroleum Hydrocarbons</b>							
Gasoline Range Organics	mg/kg	30	< 5 U	< 5 U	< 5 U	< 5 U	
Diesel Range Organics	mg/kg	2000	< 50 U	< 50 U	< 50 U	< 50 U	
Motor Oil Range Organics	mg/kg	2000	< 250 U	< 250 U	< 250 U	< 250 U	
<b>Gasoline-Range Volatile Organic Compounds</b>							
Benzene	mg/kg	0.03	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	
Toluene	mg/kg	7	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	
Ethylbenzene	mg/kg	6	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	
Total Xylenes	mg/kg	9	< 0.06 U	< 0.06 U	< 0.06 U	< 0.06 U	
Naphthalene	mg/kg	5	< 0.05 U	< 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

DRAFT

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 <sup>(1)</sup>	Crawlspace, Reported	Crawlspace, Net <sup>(1)</sup>	
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 <sup>(2)</sup> (Unrestricted Use)					
Petroleum Hydrocarbon Related Volatile Organic Compounds (µg/m <sup>3</sup> )						
Benzene	0.32	< 0.32 U	<b>1.2</b>	<b>1.2</b>	< 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	<b>2.16</b>	<b>2.16</b>	< 0.87 U	ND
Naphthalene	0.073	< 0.057 U	<b>0.13</b>	<b>0.13</b>	< 0.057 U	ND
C5 - C8 Aliphatic Hydrocarbons	--	<b>82</b>	<b>260</b>	<b>178</b>	<b>110</b>	<b>28</b>
C9 - C12 Aliphatic Hydrocarbons	--	< 25 U	<b>56</b>	<b>56</b>	< 25 U	ND
C9 - C10 Aromatic Hydrocarbons	--	< 25 U	< 25 U	ND	< 25 U	ND
Total Petroleum Hydrocarbons <sup>(3)</sup>	46	<b>118</b>	<b>342</b>	<b>234</b>	<b>146</b>	<b>28</b>

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 <sup>(1)</sup>	Crawlspace, Reported	Crawlspace, Net <sup>(1)</sup>	Crawlspace, Reported	Crawlspace, Net <sup>(1)</sup>	
Date	12/15/2021		12/15/2021		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 <sup>(2)</sup> (Unrestricted Use)								
Petroleum Hydrocarbon Related Volatile Organic Compounds (µg/m <sup>3</sup> )									
Benzene	0.32	<b>0.43</b>	<b>0.45</b>	<b>0.56</b>	<b>0.13</b>	<b>0.49</b>	<b>0.06</b>	<b>0.49</b>	<b>0.06</b>
Toluene	2300	< 19 U	< 19 U	< 19 U	ND	< 19 U	ND	< 19 U	ND
Ethylbenzene	460	< 0.43 U	< 0.43 U	<b>0.56</b>	<b>0.56</b>	< 0.43 U	ND	<b>0.54</b>	<b>0.54</b>
Total Xylenes	46	<b>1.0</b>	<b>1.2</b>	<b>3.3</b>	<b>2.25</b>	<b>1.5</b>	<b>0.5</b>	<b>3.0</b>	<b>1.97</b>
Naphthalene	0.073	<b>0.068 J</b>	< 0.057 J	<b>0.099 J</b>	<b>0.031 J</b>	<b>0.073 J</b>	<b>0.005 J</b>	<b>0.11</b>	<b>0.042 J</b>
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 <sup>(3)</sup>	46	<b>74</b>	<b>74</b>	<b>76</b>	<b>3.0</b>	<b>74</b>	<b>0.6</b>	<b>76</b>	<b>2.6</b>

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<sup>3</sup> = 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**

**DRAFT - UNVALIDATED PRELIMINARY DATA**

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

Chemical Name	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 <sup>(1)</sup>	Indoor Air, Reported	Indoor Air, Net <sup>(1)</sup>	Indoor Air, Reported	Indoor Air, Net <sup>(1)</sup>
	Sample ID	AMB-1-121521	AMB-2-121521	CS-125-121521	--	IA-125-1-121521	--	IA-125-2-121521	--
	<b>MTCA Method B CUL<sup>(2)</sup> (Unrestricted Use)</b>								
<b>Petroleum Hydrocarbon Related Volatile Organic Compounds (µg/m<sup>3</sup>)</b>									
Benzene	0.32	<b>0.43</b>	<b>0.45</b>	<b>0.56</b>	<b>0.13</b>	<b>0.41</b>	ND	<b>0.39</b>	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	<b>0.56</b>	<b>0.56</b>	<b>0.63</b>	<b>0.63</b>	<b>0.59</b>	<b>0.59</b>
Total Xylenes	46	<b>1.0</b>	<b>1.2</b>	<b>3.3</b>	<b>2.25</b>	<b>2.0</b>	<b>1.0</b>	<b>2.0</b>	<b>1.0</b>
Naphthalene	0.074	<b>0.068 J</b>	< 0.057 J	<b>0.099 J</b>	<b>0.031 J</b>	<b>0.33</b>	<b>0.26 J</b>	<b>0.39</b>	<b>0.32 J</b>
C5 - C8 Aliphatic Hydrocarbons	--	< 75 U	< 75 U	< 75 U	ND	< 75 U	ND	<b>75</b>	<b>75</b>
C9 - C12 Aliphatic Hydrocarbons	--	< 25 U	< 25 U	< 25 U	ND	<b>71</b>	<b>71</b>	<b>74</b>	<b>74</b>
C9 - C10 Aromatic Hydrocarbons	--	< 25 U	< 25 U	< 25 U	ND	< 25 U	ND	< 25 U	ND
Total Petroleum Hydrocarbons <sup>(3)</sup>	46	<b>74</b>	<b>74</b>	<b>76</b>	<b>3.0</b>	<b>134</b>	<b>73</b>	<b>174</b>	<b>151</b>

Chemical Name	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 <sup>(1)</sup>	Indoor Air, Reported	Indoor Air, Net <sup>(1)</sup>	Indoor Air, Reported	Indoor Air, Net <sup>(1)</sup>
	Sample ID	AMB-1-121521	AMB-2-121521	CS-127-121521	--	IA-127-1-121521	--	IA-127-2-121521	--
	<b>MTCA Method B CUL<sup>(2)</sup> (Unrestricted Use)</b>								
<b>Petroleum Hydrocarbon Related Volatile Organic Compounds (µg/m<sup>3</sup>)</b>									
Benzene	0.32	<b>0.43</b>	<b>0.45</b>	<b>0.49</b>	<b>0.06</b>	<b>0.39</b>	ND	<b>0.37</b>	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	<b>1.0</b>	<b>1.2</b>	<b>1.5</b>	<b>0.5</b>	< 0.87 U	ND	< 0.87 U	ND
Naphthalene	0.074	<b>0.068 J</b>	< 0.057 J	<b>0.073 J</b>	<b>0.005 J</b>	<b>0.14</b>	<b>0.072 J</b>	<b>0.16</b>	<b>0.092 J</b>
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	<b>34</b>	<b>34</b>	<b>43</b>	<b>43</b>
C9 - C10 Aromatic Hydrocarbons	--	< 25 U	< 25 U	< 25 U	ND	< 25 U	ND	< 25 U	ND
Total Petroleum Hydrocarbons <sup>(3)</sup>	46	<b>74</b>	<b>74</b>	<b>74</b>	<b>0.6</b>	<b>94</b>	<b>34</b>	<b>103</b>	<b>43</b>

**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<sup>3</sup> = 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**

**DRAFT - UNVALIDATED PRELIMINARY DATA**

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

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

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

**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<sup>3</sup> = 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

0      20      40  
Feet

### June 2021 Soil Gas and Air Sampling Locations

Texaco Strickland Site  
6808 196th Street SW  
Lynnwood, WA

DRAFT

FIGURE NO.  
**1**

PROJECT NO. 180357	BY: WVG / TDR REVISED BY: WEG/SBM	
JAN-2022		

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

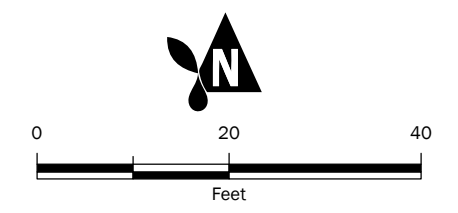




- Crawlspace Air Sampling Location
- Indoor Air Sampling Location
- Ambient Air Sampling Location
- Soil Gas Probe
- Soil Gas Probe (Not Sampled During This Event)
- Aloha Cafe Building
- Chri-Mar Apartment Building
- Property Boundary
- Former UST (Removed)
- Existing UST (Closed-In-Place or Abandoned)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



### December 2021 Soil Gas and Air Sampling Locations

Texaco Strickland Site  
6808 196th Street SW  
Lynnwood, WA

**DRAFT**

	JAN-2022	BY: WVG / TDR	FIGURE NO. <b>2</b>
	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: tullen | Print Date: 1/26/2022

## **APPENDIX A**

### **Laboratory Analytical 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.

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

January 5, 2022

Andrew Yonkofski, Project Manager  
Aspect Consulting, LLC  
710 2<sup>nd</sup> 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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

<u>Laboratory ID</u>	<u>Aspect Consulting, LLC</u>
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.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	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



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	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



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	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



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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



# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **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.

112342  
 Report To Andrew Yankowski  
 Company Aspera Consulting  
 Address \_\_\_\_\_  
 City, State, ZIP \_\_\_\_\_  
 Phone \_\_\_\_\_ Email \_\_\_\_\_

SAMPLERS (signature) B CW PROJECT NAME & ADDRESS Te Xas Straddlers PO # 180357 ME 12-13-21 Page # 1 of 3

NOTES: \_\_\_\_\_ INVOICE TO \_\_\_\_\_

TURNAROUND TIME  
 Standard  
 RUSH  
 Rush charges authorized by: \_\_\_\_\_

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

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				Notes	
										TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH		
IA-125-1-121521	01	20593	07846	IA / SG	12/15/21	>30	1147	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	23236	15218	IA / SG		28	1120	6	0929						
AMB-1-121521	06	40711	15216	IA / SG		29	1121	6	0938						
IA-131-1-121521	07	21937	07876	IA / SG		36	1112	7.5	0833						
IA-FD-121521	08	40703	15215	IA / SG		>36	1112	9	0833						

Friedman & Bruya, Inc.  
 3012 16th Avenue West  
 Seattle, WA 98119-2029  
 Ph. (206) 285-8282  
 Fax (206) 283-5044  
 FORMS/COC/COCCTO.15.DOC

SIGNATURE		PRINT NAME		COMPANY		DATE	TIME
<u>B CW</u>		<u>Baxter Cohn</u>		<u>Aspera</u>		<u>12/16/21</u>	<u>1515</u>
<u>Michael E. Cohn</u>		<u>Michael E. Cohn</u>		<u>FLR</u>		<u>12/16/21</u>	<u>1511</u>
Received by:		Samples received at:				<u>1800</u>	

Report To Andrew Yonkefski

Company Aspett Consulting  
 Address \_\_\_\_\_

City, State, ZIP \_\_\_\_\_  
 Phone \_\_\_\_\_ Email \_\_\_\_\_

ME 12-16-21 Page # 2 of 3

SAMPLERS (signature) B CM  
 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

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				Notes	
										TO15 Full Scan	TO16 BTEXN	TO15 cVOCs	APH	Helium	
IA-127-1-121521	09	18573	05357	IA / SG	12/15/21	730	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	1100	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	1026	7	0942						
GP-02-121621	14	3675	305	IA / SG	12/16/21	730	1111	5	1117			X			
GP-05-121621		2305	255	IA / SG											
GP-03-121621	15	2434	241	IA / SG		30	1201	5	1214						

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

Reinquished by: B CM

Received by: [Signature]

PRINT NAME

Bruya Carl  
Michael Belli

COMPANY

Aspett  
FR

DATE

12/16/21  
1

TIME

RTS  
1

Report To Andrew Yankofski  
 1123 ~~Company~~ Aspect Consulting  
 Address \_\_\_\_\_

City, State, ZIP \_\_\_\_\_  
 Phone \_\_\_\_\_ Email \_\_\_\_\_

SAMPLERS (signature) B CM PO # 188357 Me 12-16-21 Page # 3 of 3  
 PROJECT NAME & ADDRESS Texas Steidlhard TURNAROUND TIME  
 NOTES: INVOICE TO

Standard  
 RUSH  
 Rush charges authorized by: \_\_\_\_\_

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

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				Notes
										TO15 Full Scan	TO15 BTEXN	TO15 eVOCs	APH	
FD-121621	16	3255	308	IA / <u>SG</u>	12/16/21	29	1216	5	1221	X	X	X	X	
GP-06-121621	17	3260	303	IA / <u>SG</u>	↓	28	1217	12	1257	X	X	X	X	
TR-121621	18	2437	244	IA / <u>SG</u>	↓	-	-	-	-	X	X	X	X	
				IA / SG										
				IA / SG										
				IA / SG										
				IA / SG										
				IA / SG										

Friedman & Bryne, Inc.  
 3012 16th Avenue West  
 Seattle, WA 98119-2029  
 Ph. (206) 285-8282  
 Fax (206) 283-5044  
 FORMS C00C00CTO-15.DOC

SIGNATURE		PRINT NAME		COMPANY		DATE	TIME
Relinquished by: <u>B CM</u>		<u>Bryan Cam</u>		<u>Aspect</u>		12/16/21	1515
Received by: <u>[Signature]</u>		<u>Michael Eckel</u>		<u>F&amp;R</u>		12/16/21	1511
Relinquished by:							
Received by:							

## **APPENDIX B**

### **Report Limitations and Guidelines for Use**

# REPORT LIMITATIONS AND USE GUIDELINES

## Reliance Conditions for Third Parties

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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

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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

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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**

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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**

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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**

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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**

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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.