



February 23, 2018

Washington State Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452

Attn: Ms. Donna Musa

Transmitted via e-mail to: dmus461@ecy.wa.gov

**Re: Notification of Release
TECT Aerospace Lease Area – Paine Field Airport
Everett, Washington
Project No. 0222052.020.021**

Dear Ms. Musa:

On behalf of Snohomish County, Landau Associates, Inc. (LAI) is submitting this letter to notify the Washington State Department of Ecology (Ecology) of a release at the TECT Aerospace Lease Area located in the southeastern portion of Snohomish County Airport (also known as Paine Field) in Everett, Washington (subject property). The subject property comprises Buildings C-20, C-21, C-22, and C-23, and associated land, and includes street addresses 2912, 2922, 2932, and 2933 109th Street SW. The subject property is owned by Snohomish County and is currently leased and operated by TECT Aerospace.


A focused Phase II environmental site assessment (ESA) was conducted at the subject property in May and October of 2017. Soil and/or soil gas samples were collected from 28 sample locations throughout the subject property. Groundwater was not encountered during the subsurface investigations. Volatile organic compounds, including trichloroethene (TCE), were detected at concentrations greater than the Model Toxics Control Act (MTCA) Method A cleanup levels for industrial properties in soil and at concentrations greater than the MTCA Method C cleanup levels in soil gas. The source of the VOCs has not been identified. A technical memorandum summarizing the results of the Focused Phase II ESA is provided as Attachment 1.

Based on the results of the subsurface investigation, an indoor air investigation was completed for the occupied portions of the subject property (Building C-23). Indoor air samples, including both 8-hour and 21-day samples, were collected at six locations in Building C-23 during November and December of 2017. TCE was not detected in indoor air samples at concentrations greater than the MTCA Method C cleanup levels for chronic exposure or the US Environmental Protection Agency screening levels for acute exposure. A technical memorandum summarizing the results of the indoor air sampling is provided as Attachment 2.

Snohomish County is planning to conduct a remedial investigation (RI) at the subject property to evaluate the source, nature, and extent of contamination at the TECT Aerospace Lease Area. Snohomish County is in the process of determining a scope and timeline for implementation of the RI and determining appropriate administrative and technical assistance options.

If you have any questions about the information in this letter, please contact Kathryn Hartley at (425) 778-0907 or Andrew Rardin, Environmental Manager for Paine Field / Snohomish County Airport, at (425) 388-5115.

LANDAU ASSOCIATES, INC.


Kathryn Hartley
Associate

KFH/SMM/ccy

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cc: Andrew Rardin, Snohomish County Airport/Paine Field

Attachments

Attachment 1: Focused Phase II Environmental Site Assessment Data Summary, dated February 8, 2018

Attachment 2: Indoor Air Sampling Results, dated January 5, 2018

**Focused Phase II Environmental Site Assessment
Data Summary, dated February 8, 2018**

Technical Memorandum

TO: Andrew Rardin, Environmental Manager, Snohomish County Airport
FROM: Sierra Mott and Kathryn Hartley
DATE: February 8, 2018
RE: **Focused Phase II Environmental Site Assessment Data Summary**
TECT Aerospace
Everett, Washington
Project No. 0222052.020.021

Introduction

At the request of Snohomish County (County), Landau Associates, Inc. (LAI) conducted a focused Phase II investigation at the TECT Aerospace lease area, which consists of Buildings C-20, C-21, C-22, and C-23 and associated land (subject property; Figure 1). The location of the subject property is the southeastern portion of Sector 5 of Paine Field (also known as Snohomish County Airport), northeast of the intersection of 30th Avenue West, 109th Street SW, and 29th Avenue West in Everett, Washington. The addresses associated with the subject property are 2912 (Building C-21), 2992 (Building C-20), 2932 (Building C-22), and 2933 (Building C-23) 109th Street SW. The County is currently leasing the subject property to TECT Aerospace (TECT) and TECT is planning to terminate its lease of the subject property.

The focused Phase II investigation was conducted to follow up on the findings of the Phase I environmental site assessment (ESA) that identified the potential for subsurface contamination at the subject property (LAI 2017)¹. The objective of the focused Phase II investigation was to collect information to evaluate the potential presence of subsurface contamination resulting from current and historical operations at the subject property. The scope of work performed was established in our Phase I and Limited Phase II Environmental Site Assessment (ESA) Services proposal dated March 2, 2017 and Supplemental Phase II ESA Services proposal dated June 22, 2017. The scope of work for the Phase II ESA included an evaluation of soil and soil gas conditions at locations selected based on the results of the Phase I ESA. This technical memorandum summarizes the results of the focused and supplemental Phase II investigations of soil and soil gas at the subject property. The supplemental Phase II scope of work included collection and analysis of groundwater samples; however, groundwater was not encountered during the investigation.

Field Investigations

Field investigations were completed May 2 and 3 and October 4 and 5, 2017. A total of 28 borings/sample locations were completed in and around Buildings C-20, C-21, C-22, and C-23 (Figure 2). The boring locations were selected based on information regarding historical operations

¹ LAI. 2017. Report: Phase I Environmental Site Assessment, TECT Aerospace Lease Area, Paine Field/Snohomish County Airport, Snohomish County, Washington. Landau Associates, Inc. May 16.

and subject property conditions identified during the Phase I ESA. Based on required sampling depth and access restrictions, borings were advanced using several methods, including direct-push probe and hollow-stem auger drilling techniques, a rotary hammer, and a hand auger.

During the May 2017 investigation, soil borings were advanced to a maximum depth of 5 feet (ft) below ground surface (bgs) at locations LAI-1 through LAI-12. During the October 2017 field investigation, soil borings were advanced to a maximum depth of 25 feet bgs at locations LAI-13 through LAI-28. Groundwater was not encountered during drilling at any location. Borings were visually classified for soil type and field-screened for potential contamination using visual and olfactory tests and for the presence of volatile organic compounds (VOCs) with a portable photoionization detector (PID). Soil encountered generally consisted of 1 to 5 ft of brown fine to coarse sand (fill) overlying gray, very silty, fine sand (glacial till). Additional details regarding subsurface conditions and the results of field screening are included on the boring logs, which are provided in Attachment 1.

As shown on Figure 2, samples were not collected from locations LAI-2, LAI-3b, LAI-4, and LAI-6. Standing water on the ground surface at LAI-2. The shallow till surface at locations LAI-4 and LAI-6 prevented installation of soil gas sampling ports. Samples were not collected from LAI-3b due to the proximity to LAI-3a and lack of evidence of contamination observed during field screening.

Soil Sampling and Analysis

A total of 22 soil samples were submitted to ALS Laboratory Group (ALS), of Everett, Washington for selected analysis for diesel-range and oil-range total petroleum hydrocarbons (TPH-D and TPH-O), VOCs, and glycols. The analytical results for the soil samples are provided in Table 1 along with a comparison of the detected concentrations to the Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A soil cleanup levels (CULs) based on unrestricted and industrial land uses. A copy of the laboratory analytical report is provided in Attachment 2. The analytical results and exceedances of MTCA Method A CULs for industrial land uses are summarized below.

- Glycols were not detected at concentrations greater than the laboratory reporting limits in the one sample submitted for analysis.
- TPH-D or TPH-O were detected in 9 of 21 samples at concentrations greater than the laboratory reporting limits. The detected concentrations of TPH-D were less than the Method A CUL of 2,000 milligrams per kilogram (mg/kg). TPH-O was detected at concentrations greater than the Method A CUL at two locations:
 - TPH-O was detected at a concentration of 4,200 mg/kg at LAI-10 at a depth of 1 ft bgs. This sample was collected from along the trench drain located north of Building C-20.
 - TPH-O was detected at a concentration of 6,900 mg/kg at LAI-16 at a depth of 2.1 ft bgs. Sample LAI-16 was collected from beneath the floor of the machine shop located in the southwestern portion of Building C-23 (Figure 2).

- The VOCs cis-1,2-dichloroethene (cis-1,2-DCE) and trichloroethene (TCE) were each detected in 4 of 17 samples at concentrations greater than the laboratory reporting limits. No other VOCs were detected in the samples.

TCE was detected at concentrations greater than the Method A CUL of 0.03 mg/kg in four samples collected from three locations:

- TCE was detected at a concentration of 4 mg/kg in the sample from LAI-25 at a depth of 15 ft bgs. Sample LAI-25 was collected from outside the southwest corner of Building C-22.
- TCE was detected at concentrations of 0.04 mg/kg at a depth of 6.5 ft bgs, and 1.4 mg/kg at a depth of 9.5 ft bgs in samples collected from LAI-26. Sample location LAI-26 was located outside the southwest corner of Building C-22.
- TCE was detected at a concentration of 3.8 mg/kg in the sample from LAI-27 at a depth of 8 ft bgs. Sample LAI-27 was collected from the alleyway between Buildings C-20, C-21, and C-22 (Figure 2).

There is no MTCA Method A cleanup level for cis-1,2-DCE. The detected concentration of cis-1,2-DCE (0.32 mg/kg) in the sample from LAI-25 at a depth of 15 ft bgs exceeded the Method B screening level (0.078 mg/kg – based on the protection of groundwater as drinking water).

Soil Gas Sampling and Analysis

Soil gas samples were collected from 25 locations and submitted for analysis to Eurofins Air Toxics, of Folsom, California for analysis for VOCs. The analytical results for the soil gas samples are provided in Table 2 along with a comparison of the detected concentrations to the Ecology MTCA Method B and Method C soil gas cleanup levels based on unrestricted and industrial land uses, respectively. Copies of the laboratory analytical reports are provided in Attachment 2.

VOCs were detected at 21 of 25 sampling locations at concentrations greater than the MTCA Method B cleanup levels and at 15 of 25 sample locations at concentrations greater than the Method C cleanup levels. Exceedances of MTCA Method B and C CULs are summarized below.

- 1,1-dichloroethane was detected at a concentration of 64 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) at LAI-23; this exceeds the Method B CUL of 52 $\mu\text{g}/\text{m}^3$, but is less than the Method C CUL of 521 $\mu\text{g}/\text{m}^3$.
- 1-3-butadiene was detected in nine samples at concentrations ranging from 3.2 $\mu\text{g}/\text{m}^3$ to 150 $\mu\text{g}/\text{m}^3$. The detected concentrations exceed the Method B CUL of 2.8 $\mu\text{g}/\text{m}^3$. The detected concentrations in six of the samples also exceeded the Method C CUL of 28 $\mu\text{g}/\text{m}^3$.
- Benzene was detected in eight samples at concentrations ranging from 12 $\mu\text{g}/\text{m}^3$ to 73 $\mu\text{g}/\text{m}^3$. The detected concentrations exceed the Method B CUL of 11 $\mu\text{g}/\text{m}^3$ but are less than the Method C CUL of 107 $\mu\text{g}/\text{m}^3$.

- Chloroform was detected in eight samples at concentrations ranging from 7.2 $\mu\text{g}/\text{m}^3$ to 64 $\mu\text{g}/\text{m}^3$, which exceed the Method B CUL of 3.6 $\mu\text{g}/\text{m}^3$. The detected concentration in one sample also exceeds the Method C CUL of 36 $\mu\text{g}/\text{m}^3$.
- TCE was detected in 13 samples at concentrations ranging from 29 $\mu\text{g}/\text{m}^3$ to 74,000 $\mu\text{g}/\text{m}^3$, which exceed the Method B CUL of 12 $\mu\text{g}/\text{m}^3$. At eight sample locations, the detected concentrations also exceed the Method C CUL of 67 $\mu\text{g}/\text{m}^3$.
- Vinyl chloride was detected in six samples at concentrations ranging from 31 $\mu\text{g}/\text{m}^3$ to 5,400 $\mu\text{g}/\text{m}^3$, which exceed the Method B CUL of 9.3 $\mu\text{g}/\text{m}^3$. The detected concentrations at three sample locations also exceeded the Method C CUL of 93 $\mu\text{g}/\text{m}^3$.

VOCs were detected at concentrations greater than the Method B and Method C cleanup levels at locations throughout the subject property. The highest concentrations of VOCs were detected in samples collected from beneath and outside the southwest corner of Building C-22 and from beneath the north end of Building C-23 (the annex).

Conclusions

A focused Phase II investigation was conducted at the subject property to evaluate the potential presence of subsurface contamination resulting from current and historical operations at the subject property and to document environmental conditions for the subject property. The investigation was conducted in May and October 2017 and included collection and analysis of soil and soil gas samples. Groundwater was not encountered during the investigation.

Shallow soil sampling at the subject property identified petroleum hydrocarbons at two locations and VOCs (TCE and cis-1,2-DCE) at four locations in soil at concentrations greater than the MTCA Method A cleanup levels for Industrial Properties.

The analytical results for the soil gas samples collected identified VOCs (benzene, TCE, 1,1-dichloroethane, vinyl chloride, 1,3-butadiene, and/or chloroform) at concentrations greater than the MTCA Method B cleanup levels at 21 sample locations and greater than the Method C cleanup levels at 15 sample locations.

The results for the focused Phase II investigation identified subsurface contamination at the subject property. Additional investigation is warranted to evaluate the source, nature, and extent of contamination at the subject property.

Use of This Technical Memorandum

This technical memorandum has been prepared for the exclusive use of Snohomish County for specific application to the subject property. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of LAI. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the

project or for any other project, without review and authorization by LAI, shall be at the user's sole risk. LAI warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied.

LANDAU ASSOCIATES, INC.



Sierra M. Mott
Project Scientist



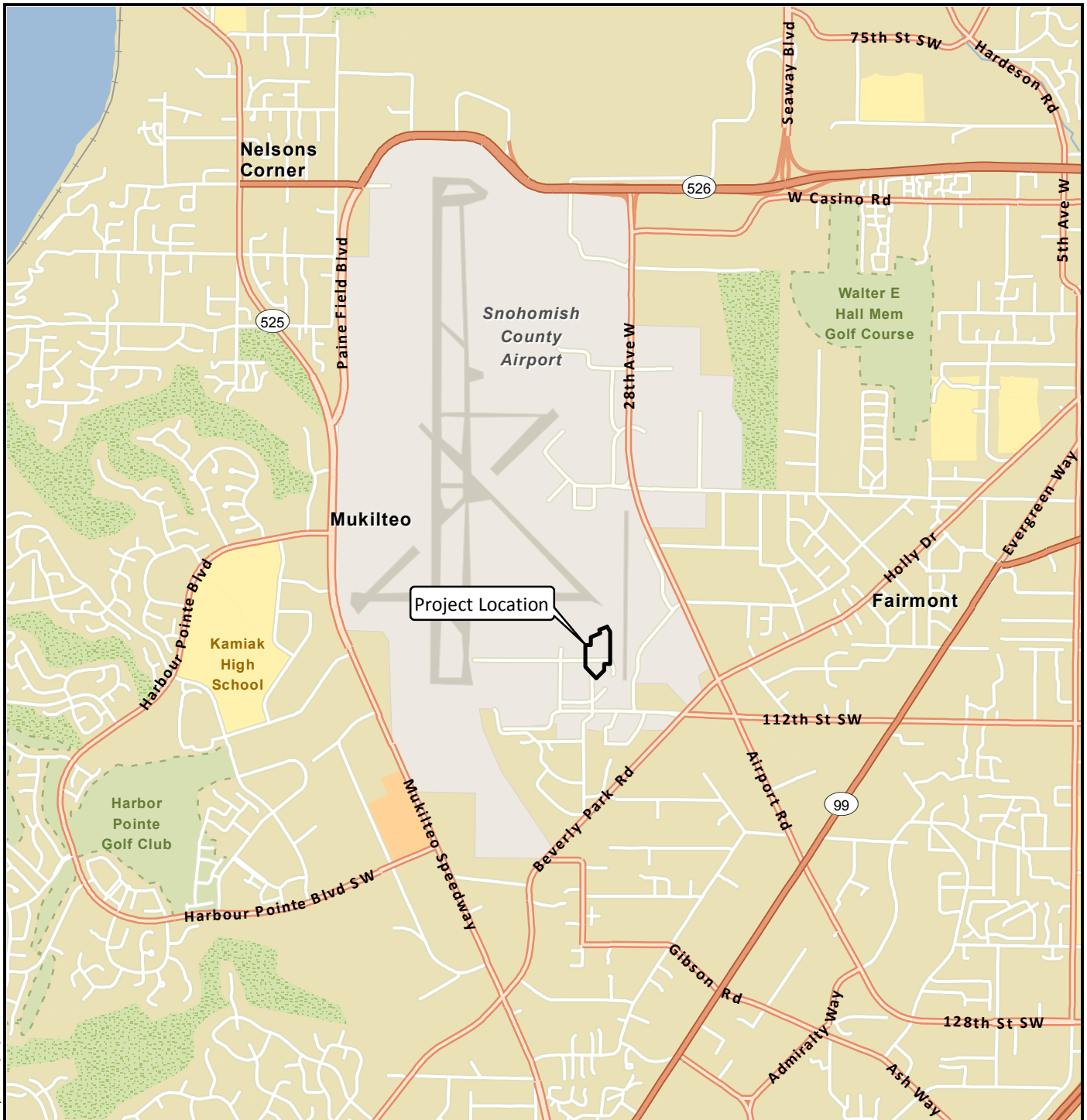
Kathryn F. Hartley
Associate

SMM/KFH/ccy

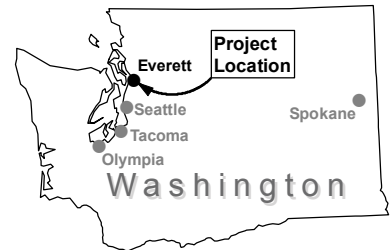
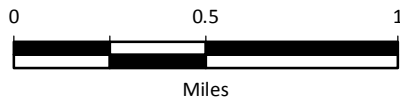
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Attachments:

- Figure 1: Vicinity Map
- Figure 2: Phase II Sampling Locations
- Table 1: Soil Analytical Results
- Table 2: Soil Gas Analytical Results
- Attachment 1: Soil Boring Logs
- Attachment 2: Laboratory Analytical Results



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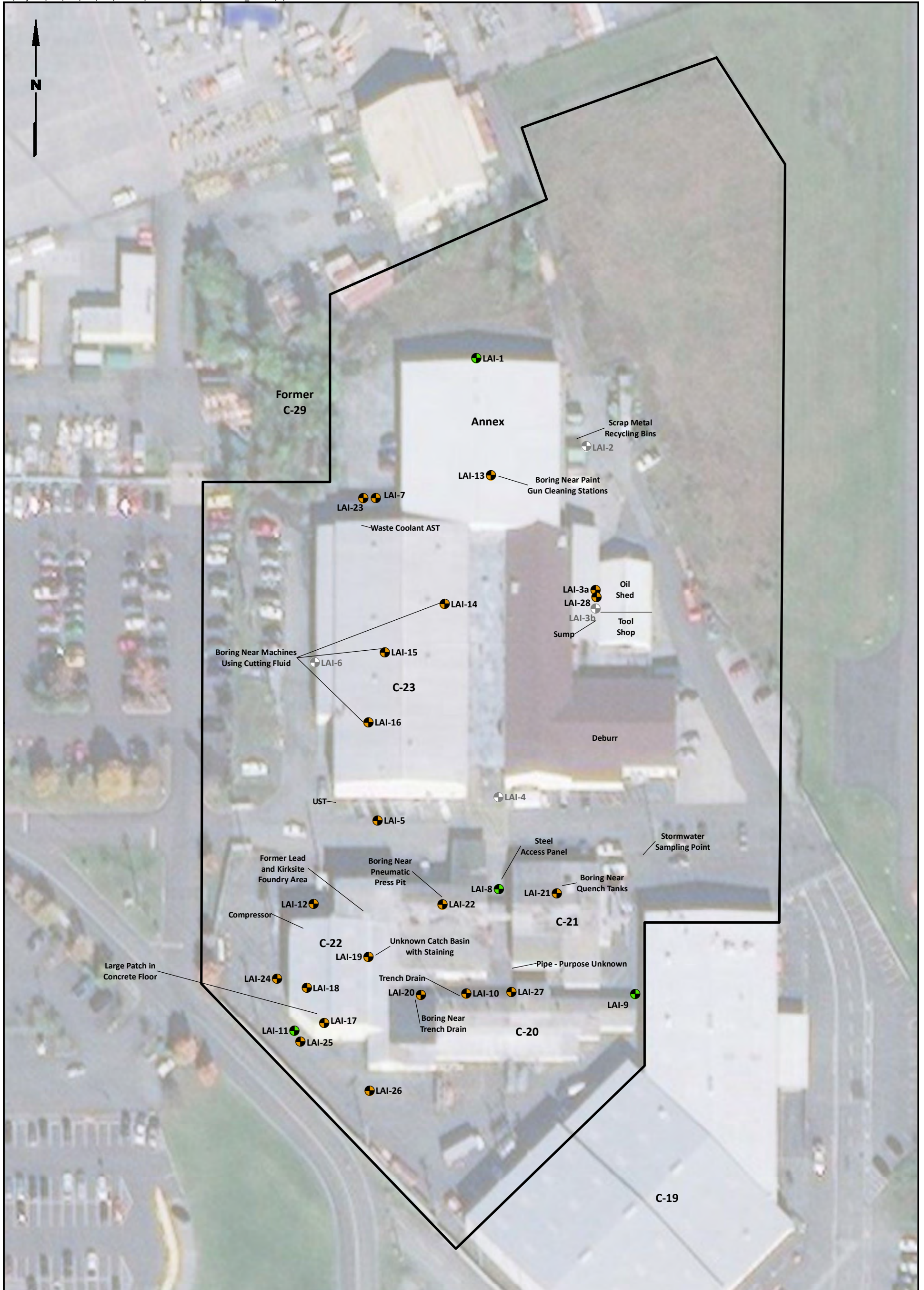
Data Source: Esri 2012

Environmental Due Diligence
TECT Aerospace Lease Area
Everett, Washington

Vicinity Map

Figure
1





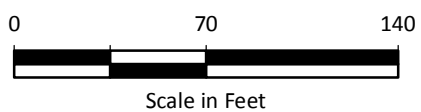
Legend

- Soil Gas Sample Location
- Soil and Soil Gas Sample Location
- No Sample Collected
- Subject Property

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: Esri World Imagery.



Soil Analytical Results
Focused Phase II Environmental Site Assessment Data Summary
TECT Aerospace – Everett, Washington

Analyte	MTCA Method A CUL	Sample Location, Sample Date, Laboratory Sample ID											
		LAI-3a (3)	LAI-5 (9)	LAI-7 (1)	LAI-10 (1)	LAI-12 (3)	LAI-13 (1.2)	LAI-14 (1.2)	LAI-15 (1.7)	LAI-16 (2.1)	LAI-17 (1.7)	LAI-18 (1.8)	LAI-19 (2.4)
		5/2/2017	5/2/2017	5/3/2017	5/2/2017	5/2/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017
		EV17050031-01	EV17050031-04	EV17050031-05	EV17050031-02	EV17050031-03	EV17100028-14	EV17100028-13	EV17100028-12	EV17100028-11	EV17100028-05	EV17100028-06	EV17100028-07
Total Petroleum Hydrocarbons (mg/kg; NWTPH-Dx)													
Diesel Range C12-C24	2,000	25 U	25 U	25 U	120 U	25 U	25 U	25 U	27	250 U	25 U	25 U	47
Oil Range C24-C40	2,000	50 U	50 U	76	4,200	50 U	460	50 U	70	6,900	50 U	50 U	50 U
Glycols (mg/kg; SW-846 8015C)													
Ethylene glycol	N/A	--	--	--	--	--	--	--	--	--	--	--	--
Propylene glycol	N/A	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organic Compounds (mg/kg; SW-846 8260C)													
1,1,1,2-Tetrachloroethane	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,1,1-Trichloroethane	2	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,1,2,2-Tetrachloroethane	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,1,2-Trichloroethane	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,1-Dichloroethane	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,1-Dichloroethene	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,1-Dichloropropene	NL	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,2,3-Trichlorobenzene	NL	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,2,3-Trichloropropane	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,2,4-Trichlorobenzene	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,2,4-Trimethylbenzene	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,2-Dibromo-3-chloropropane	N/A	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichlorobenzene	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,2-Dichloroethane	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,2-Dichloropropane	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,3,5-Trimethylbenzene	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,3-Dichlorobenzene	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,3-Dichloropropane	NL	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,4-Dichlorobenzene	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2,2-Dichloropropane	NL	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2-Butanone/MEK	N/A	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-Chlorotoluene	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2-Hexanone	NL	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4-Chlorotoluene	NL	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
4-Isopropyltoluene	NL	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
4-Methyl-2-pentanone (MIBK)	N/A	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Acetone	N/A	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Acrylonitrile	N/A	--	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Benzene	0.03	--	--	--	--	--	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Bromobenzene	NL	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Bromochloromethane	NL	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Bromodichloromethane	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Bromoform	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Bromomethane	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Carbon Disulfide	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

Soil Analytical Results
Focused Phase II Environmental Site Assessment Data Summary
TECT Aerospace – Everett, Washington

Analyte	MTCA Method A CUL	Sample Location, Sample Date, Laboratory Sample ID											
		LAI-3a (3)	LAI-5 (9)	LAI-7 (1)	LAI-10 (1)	LAI-12 (3)	LAI-13 (1.2)	LAI-14 (1.2)	LAI-15 (1.7)	LAI-16 (2.1)	LAI-17 (1.7)	LAI-18 (1.8)	LAI-19 (2.4)
		5/2/2017	5/2/2017	5/3/2017	5/2/2017	5/2/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017
		EV17050031-01	EV17050031-04	EV17050031-05	EV17050031-02	EV17050031-03	EV17100028-14	EV17100028-13	EV17100028-12	EV17100028-11	EV17100028-05	EV17100028-06	EV17100028-07
Carbon Tetrachloride	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Chlorobenzene	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Chloroethane	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Chloroform	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Chloromethane	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
cis-1,2-Dichloroethene	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
cis-1,3-Dichloropropene	NL	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Dibromochloromethane	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Dibromomethane	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Dichlorodifluoromethane	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ethylbenzene	6	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ethylene Dibromide	0.005	--	--	--	--	--	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Hexachlorobutadiene	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Isopropylbenzene	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
m,p-Xylene	NL	--	--	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Methylene Chloride	0.02	--	--	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Methyl-tert-butyl ether	0.10	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Naphthalene	5	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
n-Butylbenzene	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
n-Propylbenzene	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
o-Xylene	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
sec-Butylbenzene	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Styrene	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
tert-Butylbenzene	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Tetrachloroethene	0.05	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Toluene	7	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
trans-1,2-Dichloroethene	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
trans-1,3-Dichloropropene	NL	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Trichloroethene	0.03	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Trichlorofluoromethane (CFC 11)	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Vinyl Chloride	N/A	--	--	--	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

Soil Analytical Results
Focused Phase II Environmental Site Assessment Data Summary
TECT Aerospace – Everett, Washington

Analyte	MTCA Method A CUL	Sample Location, Sample Date, Laboratory Sample ID									
		LAI-20 (1.2)	LAI-21 (1.5)	LAI-22 (1.5)	LAI-23 (16.5)	LAI-24 (10.75)	LAI-25 (15.0)	LAI-26 (6.5)	LAI-26 (9.5)	LAI-27 (8)	LAI-28 (17.75)
		10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/9/2017	10/5/2017	10/5/2017	10/5/2017	10/6/2017	10/9/2017
		EV17100028-10	EV17100028-09	EV17100028-08	EV17100028-04	EV17100043-02	EV17100028-03	EV17100028-01	EV17100028-02	EV17100028-15	EV17100043-01
Total Petroleum Hydrocarbons (mg/kg; NWTPH-Dx)											
Diesel Range C12-C24	2,000	25 U	25 U	25 U	25 U	25 U	25 U	25 U	--	25 U	25 U
Oil Range C24-C40	2,000	50 U	52	50 U	50 U	320	50 U	80	--	50 U	50 U
Glycols (mg/kg; SW-846 8015C)											
Ethylene glycol	N/A	--	11 U	--	--	--	--	--	--	--	--
Propylene glycol	N/A	--	11 U	--	--	--	--	--	--	--	--
Volatile Organic Compounds (mg/kg; SW-846 8260C)											
1,1,1,2-Tetrachloroethane	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,1,1-Trichloroethane	2	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,1,2,2-Tetrachloroethane	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,1,2-Trichloroethane	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,1-Dichloroethane	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,1-Dichloroethene	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,1-Dichloropropene	NL	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,2,3-Trichlorobenzene	NL	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,2,3-Trichloropropane	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,2,4-Trichlorobenzene	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,2,4-Trimethylbenzene	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,2-Dibromo-3-chloropropane	N/A	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichlorobenzene	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,2-Dichloroethane	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,2-Dichloropropane	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,3,5-Trimethylbenzene	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,3-Dichlorobenzene	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,3-Dichloropropane	NL	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,4-Dichlorobenzene	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2,2-Dichloropropane	NL	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2-Butanone/MEK	N/A	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-Chlorotoluene	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2-Hexanone	NL	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4-Chlorotoluene	NL	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
4-Isopropyltoluene	NL	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
4-Methyl-2-pentanone (MIBK)	N/A	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Acetone	N/A	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Acrylonitrile	N/A	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Benzene	0.03	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Bromobenzene	NL	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Bromochloromethane	NL	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Bromodichloromethane	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Bromoform	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Bromomethane	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Carbon Disulfide	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

Soil Analytical Results
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TECT Aerospace – Everett, Washington

Analyte	MTCA Method A CUL	Sample Location, Sample Date, Laboratory Sample ID									
		LAI-20 (1.2)	LAI-21 (1.5)	LAI-22 (1.5)	LAI-23 (16.5)	LAI-24 (10.75)	LAI-25 (15.0)	LAI-26 (6.5)	LAI-26 (9.5)	LAI-27 (8)	LAI-28 (17.75)
		10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/9/2017	10/5/2017	10/5/2017	10/5/2017	10/6/2017	10/9/2017
		EV17100028-10	EV17100028-09	EV17100028-08	EV17100028-04	EV17100043-02	EV17100028-03	EV17100028-01	EV17100028-02	EV17100028-15	EV17100043-01
Carbon Tetrachloride	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Chlorobenzene	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Chloroethane	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Chloroform	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Chloromethane	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
cis-1,2-Dichloroethene	N/A	0.01 U	0.01 U	0.01 U	0.036	0.01 U	0.32	0.01 U	0.021	0.019	0.01 U
cis-1,3-Dichloropropene	NL	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Dibromochloromethane	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Dibromomethane	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Dichlorodifluoromethane	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ethylbenzene	6	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ethylene Dibromide	0.005	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Hexachlorobutadiene	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Isopropylbenzene	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
m,p-Xylene	NL	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Methylene Chloride	0.02	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Methyl-tert-butyl ether	0.10	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Naphthalene	5	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
n-Butylbenzene	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
n-Propylbenzene	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
o-Xylene	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
sec-Butylbenzene	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Styrene	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
tert-Butylbenzene	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Tetrachloroethene	0.05	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Toluene	7	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
trans-1,2-Dichloroethene	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
trans-1,3-Dichloropropene	NL	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Trichloroethene	0.03	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	4	0.04	1.4	3.8	0.01 U
Trichlorofluoromethane (CFC 11)	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Vinyl Chloride	N/A	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

Notes:

Bold text indicates detected analyte.
 Green shading indicates exceedance of applicable CUL.

Abbreviations and Acronyms:

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
 CUL = cleanup level
 ID = Identification
 mg/kg = milligrams per kilogram
 MTCA = Model Toxics Control Act
 N/A = not applicable
 NL = not listed
 NWTPH = Northwest Total Petroleum Hydrocarbon

Soil Gas Analytical Results
Focused Phase II Environmental Site Assessment Data Summary
TECT Aerospace – Everett, Washington

Analyte	Sub-Slab Soil Gas Screening Level Method B ¹	Sub-Slab Soil Gas Screening Level Method C ¹	Sample Location, Sample Date, Laboratory Sample ID									
			LA1-1	LA1-3	LA1-5	LA1-7	LA1-8	LA1-9	LA1-10	LA1-11	LA1-12	
			5/3/2017	5/2/2017	5/2/2017	5/3/2017	5/2/2017	5/3/2017	5/2/2017	5/2/2017	5/2/2017	
			1705175A-09A	1705175A-01A	1705175A-04A	1705175A-07A	1705175A-02A	1705175A-08A	1705175A-03A	1705175A-06A	1705175A-05A	
Volatile Organic Compounds (µg/m³; EPA TO-15)												
1,1,1-Trichloroethane	76,190	166,667	5.6 U	5.6 U	5.8 U	7.0 U	6 U	5.6 U	5.6 U	54 U	5.7 U	
1,1,2,2-Tetrachloroethane	1.4	14	7.0 U	7.0 U	7.3 U	8.8 U	7.6 U	7.0 U	7.1 U	68 U	7.2 U	
1,1,2-Trichloroethane	3.0	6.7	5.6 U	5.6 U	5.8 U	7.0 U	6.0 U	5.6 U	5.6 U	54 U	5.7 U	
1,1-Dichloroethane	52	521	4.1 U	4.1 U	4.3 U	5.2 U	4.4 U	4.1 U	4.2 U	40 U	4.2 U	
1,1-Dichloroethene	3,048	6,667	4.0 U	4.0 U	4.2 U	5.1 U	4.4 U	4.1 U	4.1 U	39 U	4.2 U	
1,2,4-Trichlorobenzene	30	67	30 U	30 U	31 U	38 U	33 U	30 U	30 U	300 U	31 U	
1,2,4-Trimethylbenzene	107	233	5.0 U	5.0 U	5.2 U	6.3 U	5.4 U	5.0 U	5.1 U	49 U	5.2 U	
1,2-Dibromoethane (EDB)	0.14	1.4	7.8 U	7.8 U	8.1 U	9.8 U	8.4 U	7.9 U	7.9 U	76 U	8.1 U	
1,2-Dichlorobenzene	3,048	6,667	6.1 U	6.1 U	6.4 U	7.7 U	6.6 U	6.2 U	6.2 U	60 U	6.3 U	
1,2-Dichloroethane	3.2	32	4.1 U	4.1 U	4.3 U	5.2 U	4.4 U	4.1 U	4.2 U	40 U	4.2 U	
1,2-Dichloropropane	8.3	83	4.7 U	4.7 U	4.9 U	5.9 U	5.1 U	4.7 U	4.8 U	46 U	4.8 U	
1,3,5-Trimethylbenzene	NL	NL	5.0 U	5.0 U	5.2 U	6.3 U	5.4 U	5.0 U	5.1 U	49 U	5.2 U	
1,3-Butadiene	2.8	28	2.2 U	2.2 U	150	2.8 U	2.4 U	2.3 U	2.3 U	22 U	120	
1,3-Dichlorobenzene	NL	NL	6.1 U	6.1 U	6.4 U	7.7 U	6.6 U	6.2 U	6.2 U	60 U	6.3 U	
1,4-Dichlorobenzene	7.6	76	6.1 U	6.1 U	6.4 U	7.7 U	6.6 U	6.2 U	6.2 U	60 U	6.3 U	
1,4-Dioxane	NL	NL	15 U	15 U	15 U	18 U	16 U	15 U	15 U	140 U	15 U	
2,2,4-Trimethylpentane	NL	NL	4.8 U	4.8 U	5.1	7.6	11	4.8 U	4.8 U	46 U	6.2	
2-Butanone	76,190	166,667	12 U	12 U	13	45	13 U	12 U	12 U	120 U	17	
2-Hexanone	NL	NL	17 U	17 U	17 U	21 U	18 U	17 U	17 U	160 U	17 U	
2-Propanol	NL	NL	10 U	10 U	10 U	12 U	11 U	10 U	10 U	98 U	10 U	
3-Chloropropene	NL	NL	13 U	13 U	13 U	16 U	14 U	13 U	13 U	120 U	13 U	
4-Ethyltoluene	NL	NL	5.0 U	5.0 U	5.2 U	6.3 U	5.4 U	5.0 U	5.1 U	49 U	5.2 U	
4-Methyl-2-pentanone	45,714	100,000	4.2 U	4.2 U	4.3 U	5.2 U	4.5 U	4.2 U	4.2 U	41 U	4.3 U	
Acetone	NL	NL	27	26	57	180	59	24 U	33	240 U	66	
alpha-Chlorotoluene	1.7	17	5.3 U	5.3 U	5.5 U	6.6 U	5.7 U	5.3 U	5.3 U	52 U	5.4 U	
Benzene	11	107	3.2 U	3.2 U	30	14	15	3.3 U	3.3 U	32 U	16	
Bromodichloromethane	2.3	23	6.8 U	6.8 U	7.1 U	8.6 U	7.4 U	6.9 U	6.9 U	67 U	7.0 U	
Bromoform	76	758	10 U	10 U	11 U	13 U	11 U	10 U	11 U	100 U	11 U	
Bromomethane	76	167	40 U	40 U	41 U	50 U	43 U	40 U	40 U	390 U	41 U	
Carbon Disulfide	10,667	23,333	13 U	13 U	13	17	17	13 U	13 U	160	13 U	
Carbon Tetrachloride	14	139	6.4 U	6.4 U	6.7 U	8 U	6.9 U	6.4 U	6.5 U	63 U	6.6 U	
Chlorobenzene	762	1,667	4.7 U	4.7 U	4.9 U	5.9 U	5.1 U	4.7 U	4.7 U	46 U	4.8 U	
Chloroethane	152,381	333,333	11 U	11 U	11 U	14 U	12 U	11 U	11 U	100 U	11 U	
Chloroform	3.6	36	5.0 U	5.0 U	5.2 U	6.2 U	5.4 U	5.0 U	5.0 U	48 U	5.1 U	
Chloromethane	1,371	3,000	21 U	21 U	22 U	26 U	23 U	21 U	21 U	200 U	22 U	
cis-1,2-Dichloroethene	NL	NL	4.0 U	4.0 U	4.2 U	16	4.4 U	4.1 U	4.1 U	440	4.2 U	
cis-1,3-Dichloropropene	NL	NL	4.6 U	4.6 U	4.8 U	5.8 U	5.0 U	4.6 U	4.7 U	45 U	4.8 U	
Cumene	6,095	13,333	5.0 U	5.0 U	5.2 U	6.3 U	5.4 U	5.0 U	5.1 U	49 U	5.2 U	

Soil Gas Analytical Results
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Analyte	Sub-Slab Soil Gas Screening Level Method B ¹	Sub-Slab Soil Gas Screening Level Method C ¹	Sample Location, Sample Date, Laboratory Sample ID								
			LA1-1	LA1-3	LA1-5	LA1-7	LA1-8	LA1-9	LA1-10	LA1-11	LA1-12
			5/3/2017	5/2/2017	5/2/2017	5/3/2017	5/2/2017	5/3/2017	5/2/2017	5/2/2017	5/2/2017
			1705175A-09A	1705175A-01A	1705175A-04A	1705175A-07A	1705175A-02A	1705175A-08A	1705175A-03A	1705175A-06A	1705175A-05A
Cyclohexane	NL	NL	3.5 U	3.5 U	16	28	200	3.5 U	3.5 U	34 U	22
Dibromochloromethane	3.1	31	8.7 U	8.7 U	9 U	11 U	9.4 U	8.7 U	8.8 U	85 U	8.9 U
Ethanol	NL	NL	7.9	26	8 U	25	27	7.7 U	34	75 U	33
Ethyl Benzene	15,238	33,333	4.4 U	4.4 U	4.6 U	5.6 U	5.4	4.4 U	4.5 U	43 U	4.6 U
Freon 11	10,667	23,333	5.7 U	5.7 U	6 U	7.2 U	6.2 U	5.8 U	5.8 U	56 U	5.9 U
Freon 113	457,143	1,000,000	7.8 U	7.8 U	8.1 U	9.8 U	8.4 U	7.8 U	7.9 U	76 U	8 U
Freon 114	NL	NL	7.1 U	7.1 U	7.4 U	8.9 U	7.7 U	7.2 U	7.2 U	70 U	7.3 U
Freon 12	1,524	3,333	5.0 U	5.0 U	5.2 U	6.3 U	5.4 U	5.1 U	5.1 U	49 U	5.2 U
Heptane	NL	NL	4.2 U	4.2 U	20	28	140	4.2 U	4.2 U	42	21
Hexachlorobutadiene	3.8	38	44 U	44 U	45 U	55 U	47 U	44 U	44 U	420 U	45 U
Hexane	10,667	23,333	3.6 U	3.6 U	47	57	350	3.6 U	3.6 U	60	85
m,p-Xylene	1,524	3,333	4.4 U	4.4 U	7.0	5.6 U	20	4.4 U	4.5 U	43 U	5.3
Methyl tert-butyl ether	321	3,205	15 U	15 U	15 U	18 U	16 U	15 U	15 U	140 U	15 U
Methylene Chloride	8,333	20,000	35 U	35 U	37 U	44 U	38 U	36 U	36 U	340 U	36 U
o-Xylene	1,524	3,333	4.4 U	4.4 U	4.6 U	5.6 U	6.7	4.4 U	4.5 U	43 U	4.6 U
Propylbenzene	NL	NL	5.0 U	5.0 U	5.2 U	6.3 U	5.4 U	5.0 U	5.1 U	49 U	5.2 U
Styrene	15,238	33,333	4.3 U	4.3 U	4.5 U	5.4 U	4.7 U	4.4 U	4.4 U	42 U	4.5 U
Tetrachloroethene	321	1,333	6.9 U	6.9 U	7.2 U	8.7 U	7.5 U	7.0 U	7.0 U	67 U	7.1 U
Tetrahydrofuran	NL	NL	3 U	3 U	3.1 U	3.8 U	3.2 U	3 U	3 U	29 U	3.1 U
Toluene	76,190	166,667	3.8 U	8.0	30	21	55	3.9 U	9.1	150	24
trans-1,2-Dichloroethene	NL	NL	4.0 U	4.0 U	4.2 U	5.1 U	4.4 U	4.1 U	4.1 U	39 U	4.2 U
trans-1,3-Dichloropropene	NL	NL	4.6 U	4.6 U	4.8 U	5.8 U	5.0 U	4.6 U	4.7 U	45 U	4.8 U
Trichloroethene	12	67	5.5 U	5.5 U	5.7 U	6.9 U	5.9 U	5.5 U	5.5 U	53 U	5.6 U
Vinyl Chloride	9.3	93	2.6 U	2.6 U	2.7 U	240	2.8 U	2.6 U	2.6 U	5,400	2.7 U
Natural Gas Analysis (%; modified ASTM D-1946)											
Helium	NL	NL	0.35	0.26	ND	ND	ND	0.42	0.17	ND	ND

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Analyte	Sub-Slab Soil Gas Screening Level Method B ¹	Sub-Slab Soil Gas Screening Level Method C ¹	Sample Location, Sample Date, Laboratory Sample ID									
			LAI-13	LAI-14	LAI-15	LAI-16	LAI-17	LAI-18	LAI-19	LAI-20	LAI-21	
			10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	
			1710233A/B-09A	1710233A/B-08A	1710233A/B-07A	1710233A/B-06A	1710233A/B-02A	1710233A/B-03A	1710233A/B-01A	1710233A/B-10A	1710233A/B-05A	
Volatile Organic Compounds (µg/m³; EPA TO-15)												
1,1,1-Trichloroethane	76,190	166,667	66 U	6.6 U	6.4 U	6.1 U	41 U	41 U	6.4 U	6.5 U	12 U	
1,1,2,2-Tetrachloroethane	1.4	14	83 U	8.3 U	8.0 U	7.7 U	52 U	52 U	8.0 U	8.2 U	16 U	
1,1,2-Trichloroethane	3.0	6.7	66 U	6.6 U	6.4 U	6.1 U	41 U	41 U	6.4 U	6.5 U	12 U	
1,1-Dichloroethane	52	521	49 U	4.9 U	4.7 U	4.5 U	31 U	31 U	4.7 U	4.8 U	9.2 U	
1,1-Dichloroethene	3,048	6,667	48 U	4.8 U	4.6 U	4.4 U	30 U	30 U	4.6 U	4.7 U	9.1 U	
1,2,4-Trichlorobenzene	30	67	360 U	36 U	34 U	33 U	220 U	220 U	34 U	35 U	68 U	
1,2,4-Trimethylbenzene	107	233	59 U	33	7.0	5.6	37 U	37 U	30	30	52	
1,2-Dibromoethane (EDB)	0.14	1.4	93 U	9.3 U	9.0 U	8.6 U	58 U	58 U	9.0 U	9.1 U	18 U	
1,2-Dichlorobenzene	3,048	6,667	73 U	7.3 U	7.0 U	6.7 U	46 U	46 U	7.0 U	7.2 U	14 U	
1,2-Dichloroethane	3.2	32	49 U	4.9 U	4.7 U	4.5 U	31 U	31 U	4.7 U	4.8 U	9.2 U	
1,2-Dichloropropane	8.3	83	56 U	5.6 U	5.4 U	5.2 U	35 U	35 U	5.4 U	5.5 U	10 U	
1,3,5-Trimethylbenzene	NL	NL	59 U	10	5.7 U	5.5 U	37 U	37 U	8.2	8.4	17	
1,3-Butadiene	2.8	28	27 U	3.2	2.6 U	70	17 U	17 U	2.6 U	2.6 U	5.0 U	
1,3-Dichlorobenzene	NL	NL	73 U	7.3 U	7.0 U	6.7 U	46 U	46 U	7.0 U	7.2 U	14 U	
1,4-Dichlorobenzene	7.6	76	73 U	7.3 U	7.0 U	6.7 U	46 U	46 U	7.0 U	7.2 U	14 U	
1,4-Dioxane	NL	NL	170 U	17 U	17 U	16 U	110 U	110 U	17 U	17 U	33 U	
2,2,4-Trimethylpentane	NL	NL	56 U	5.6 U	5.4 U	5.2 U	36 U	36 U	5.4 U	15	11 U	
2-Butanone	76,190	166,667	140 U	110	71	520	90 U	90 U	120	62	52	
2-Hexanone	NL	NL	200 U	20 U	19 U	70	120 U	120 U	19 U	19 U	37 U	
2-Propanol	NL	NL	120 U	62	41	180	75 U	120	33	32	26	
3-Chloropropene	NL	NL	150 U	15 U	14 U	14 U	95 U	95 U	14 U	15 U	29 U	
4-Ethyltoluene	NL	NL	59 U	22	5.8	5.7	37 U	37 U	21	25	37	
4-Methyl-2-pentanone	45,714	100,000	50 U	28	5.5	880	31 U	31 U	9.2	9.0	9.4 U	
Acetone	NL	NL	290 U	200	140	730	180 U	180 U	170	3500 E	850	
alpha-Chlorotoluene	1.7	17	63 U	6.3 U	6.0 U	5.8 U	39 U	39 U	6.0 U	6.2 U	12 U	
Benzene	11	107	39 U	7.0	11	73	24 U	24 U	5.9	7.7	9.6	
Bromodichloromethane	2.3	23	81 U	8.1 U	7.8 U	7.5 U	51 U	51 U	7.8 U	8.0 U	15 U	
Bromoform	76	758	120 U	12 U	12 U	12 U	78 U	78 U	12 U	12 U	24 U	
Bromomethane	76	167	470 U	47 U	45 U	43 U	300 U	300 U	45 U	46 U	89 U	
Carbon Disulfide	10,667	23,333	150 U	15 U	14 U	170	95 U	95 U	14 U	15 U	28 U	
Carbon Tetrachloride	14	139	76 U	7.8	7.3 U	7.0 U	48 U	48 U	7.3 U	7.5 U	14 U	
Chlorobenzene	762	1,667	56 U	5.6 U	5.4 U	5.2 U	35 U	35 U	5.4 U	5.5 U	10 U	
Chloroethane	152,381	333,333	130 U	13 U	12 U	12 U	80 U	80 U	12 U	12 U	24 U	
Chloroform	3.6	36	59 U	16	23	34	37 U	37 U	25	17	11 U	
Chloromethane	1,371	3,000	250 U	25 U	24 U	23 U	160 U	160 U	24 U	24 U	47 U	
cis-1,2-Dichloroethene	NL	NL	59	4.8 U	4.6 U	4.4 U	300	1,600	4.6 U	120	9.0 U	
cis-1,3-Dichloropropene	NL	NL	55 U	5.5 U	5.3 U	5.1 U	34 U	34 U	5.3 U	5.4 U	10 U	
Cumene	6,095	13,333	59 U	5.9 U	5.7 U	5.5 U	37 U	37 U	5.7 U	5.8 U	11 U	

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Analyte	Sub-Slab Soil Gas Screening Level Method B ¹	Sub-Slab Soil Gas Screening Level Method C ¹	Sample Location, Sample Date, Laboratory Sample ID								
			LAI-13	LAI-14	LAI-15	LAI-16	LAI-17	LAI-18	LAI-19	LAI-20	LAI-21
			10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017
			1710233A/B-09A	1710233A/B-08A	1710233A/B-07A	1710233A/B-06A	1710233A/B-02A	1710233A/B-03A	1710233A/B-01A	1710233A/B-10A	1710233A/B-05A
Cyclohexane	NL	NL	42 U	12	8.8	34	26 U	26 U	4.0 U	5.1	12
Dibromochloromethane	3.1	31	100 U	10 U	9.9 U	9.5 U	65 U	65 U	9.9 U	10 U	19 U
Ethanol	NL	NL	200	340	480	360	710	1,800	430	300	290
Ethyl Benzene	15,238	33,333	52 U	5.2 U	5.0 U	5.9	33 U	33 U	6.6	7.2	9.9 U
Freon 11	10,667	23,333	68 U	6.8 U	6.5 U	6.3 U	43 U	43 U	6.5 U	6.7 U	13 U
Freon 113	457,143	1,000,000	93 U	9.3 U	8.9 U	8.6 U	58 U	58 U	8.9 U	9.1 U	18 U
Freon 114	NL	NL	84 U	8.4 U	8.1 U	7.8 U	53 U	53 U	8.1 U	8.3 U	16 U
Freon 12	1,524	3,333	60 U	6.0 U	5.8 U	5.5 U	38 U	38 U	5.8 U	5.9 U	11 U
Heptane	NL	NL	50 U	13	10	62	31 U	31 U	4.8 U	4.9 U	37
Hexachlorobutadiene	3.8	38	520 U	52 U	50 U	48 U	320 U	320 U	50 U	51 U	97 U
Hexane	10,667	23,333	43 U	15	16	92	27 U	27 U	11	23	38
m,p-Xylene	1,524	3,333	52 U	21	9.4	16	33 U	33 U	25	29	17
Methyl tert-butyl ether	321	3,205	170 U	17 U	17 U	16 U	110 U	110 U	17 U	17 U	33 U
Methylene Chloride	8,333	20,000	420 U	42 U	40 U	39 U	260 U	260 U	40 U	41 U	79 U
o-Xylene	1,524	3,333	52 U	8.0	5.0 U	5.4	33 U	33 U	9.6	11	9.9 U
Propylbenzene	NL	NL	59 U	5.9 U	5.7 U	5.5 U	37 U	37 U	5.7 U	5.8 U	11 U
Styrene	15,238	33,333	52 U	5.2 U	5.0 U	4.8 U	32 U	32 U	5.0 U	5.1 U	9.7 U
Tetrachloroethene	321	1,333	82 U	8.2 U	18	36	52 U	52 U	7.9 U	8.2	15 U
Tetrahydrofuran	NL	NL	36 U	16	13	17	22 U	22 U	13	7.6	8.1
Toluene	76,190	166,667	46 U	18	16	60	29 U	29 U	25	23	19
trans-1,2-Dichloroethene	NL	NL	48 U	4.8 U	4.6 U	4.4 U	30 U	51	4.6 U	5.8	9.0 U
trans-1,3-Dichloropropene	NL	NL	55 U	5.5 U	5.3 U	5.1 U	34 U	34 U	5.3 U	5.4 U	10 U
Trichloroethene	12	67	15,000	1,200	9.0	41	12,000	16,000	29	1,300	410
Vinyl Chloride	9.3	93	31 U	3.1 U	3.0 U	2.9 U	19 U	19 U	3.0 U	3.0 U	5.8 U
Natural Gas Analysis (%; modified ASTM D-1946)											
Helium	NL	NL	0.12 U	0.12 U	0.12 U	0.11 U	0.11 U	0.11 U	1.2	0.12 U	0.11 U

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Analyte	Sub-Slab Soil Gas Screening Level Method B ¹	Sub-Slab Soil Gas Screening Level Method C ¹	Sample Location, Sample Date, Laboratory Sample ID							
			LAI-22	LAI-23	LAI-24	LAI-25	LAI-26	LAI-27	LAI-28	
			10/4/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	
			1710233A/B-04A	1710233A/B-11A	1710233A/B-15A	1710233A/B-13A	1710233A/B-12A	1710233A/B-16A	1710233A/B-14A	
Volatile Organic Compounds (µg/m³; EPA TO-15)										
1,1,1-Trichloroethane	76,190	166,667	12 U	26 U	14 U	85 U	65 U	6.1 U	6.5 U	
1,1,2,2-Tetrachloroethane	1.4	14	15 U	33 U	18 U	110 U	82 U	7.6 U	8.2 U	
1,1,2-Trichloroethane	3.0	6.7	12 U	26 U	14 U	85 U	65 U	6.1 U	6.5 U	
1,1-Dichloroethane	52	521	8.9 U	64	11 U	63 U	48 U	4.5 U	4.8 U	
1,1-Dichloroethene	3,048	6,667	8.7 U	19 U	10 U	130	480	4.4 U	4.7 U	
1,2,4-Trichlorobenzene	30	67	65 U	140 U	78 U	460 U	350 U	33 U	35 U	
1,2,4-Trimethylbenzene	107	233	72	23 U	13 U	76 U	58 U	10	5.8 U	
1,2-Dibromoethane (EDB)	0.14	1.4	17 U	36 U	20 U	120 U	91 U	8.6 U	9.1 U	
1,2-Dichlorobenzene	3,048	6,667	13 U	28 U	16 U	93 U	72 U	6.7 U	7.2 U	
1,2-Dichloroethane	3.2	32	8.9 U	19 U	11 U	63 U	48 U	4.5 U	4.8 U	
1,2-Dichloropropane	8.3	83	10 U	22 U	12 U	72 U	55 U	5.2 U	5.5 U	
1,3,5-Trimethylbenzene	NL	NL	19	23 U	13 U	76 U	58 U	5.5 U	5.8 U	
1,3-Butadiene	2.8	28	4.9 U	31	5.8 U	71	51	28	6.1	
1,3-Dichlorobenzene	NL	NL	13 U	28 U	16 U	93 U	72 U	6.7 U	7.2 U	
1,4-Dichlorobenzene	7.6	76	13 U	28 U	16 U	93 U	72 U	6.7 U	7.2 U	
1,4-Dioxane	NL	NL	32 U	68 U	38 U	220 U	170 U	16 U	17 U	
2,2,4-Trimethylpentane	NL	NL	10 U	22 U	12 U	73 U	57	9.8	29	
2-Butanone	76,190	166,667	36	56 U	31 U	180 U	140 U	29	150	
2-Hexanone	NL	NL	36 U	78 U	43 U	250 U	190 U	18 U	19 U	
2-Propanol	NL	NL	63	47 U	26 U	150 U	120 U	92	43	
3-Chloropropene	NL	NL	28 U	60 U	33 U	190 U	150 U	14 U	15 U	
4-Ethyltoluene	NL	NL	38	23 U	13 U	76 U	58 U	11	5.8 U	
4-Methyl-2-pentanone	45,714	100,000	9.0 U	19 U	17	64 U	49 U	11	6.8	
Acetone	NL	NL	2,300 E	150	62 U	370 U	110 U	94	540	
alpha-Chlorotoluene	1.7	17	11 U	25 U	14 U	80 U	62 U	5.8 U	6.2 U	
Benzene	11	107	7.0 U	46	8.4 U	50 U	38 U	17	12	
Bromodichloromethane	2.3	23	15 U	32 U	18 U	100 U	80 U	7.5 U	8.0 U	
Bromoform	76	758	23 U	49 U	27 U	160 U	120 U	12 U	12 U	
Bromomethane	76	167	86 U	180 U	100 U	600 U	180 U	43 U	46 U	
Carbon Disulfide	10,667	23,333	27 U	59 U	33 U	190 U	150 U	14 U	53	
Carbon Tetrachloride	14	139	14 U	30 U	16 U	98 U	75 U	7.0 U	7.5 U	
Chlorobenzene	762	1,667	10 U	22 U	12 U	72 U	55 U	5.1 U	5.5 U	
Chloroethane	152,381	333,333	23 U	50 U	28 U	160 U	120 U	12 U	12 U	
Chloroform	3.6	36	11	23 U	64	76 U	58 U	5.4 U	7.2	
Chloromethane	1,371	3,000	46 U	98 U	54 U	320 U	98 U	23 U	24 U	
cis-1,2-Dichloroethene	NL	NL	8.7 U	85	10 U	1,500	13,000	170	9.3	
cis-1,3-Dichloropropene	NL	NL	10 U	22 U	12 U	70 U	54 U	5.1 U	5.4 U	
Cumene	6,095	13,333	11 U	23 U	13 U	76 U	58 U	5.5 U	5.8 U	


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Analyte	Sub-Slab Soil Gas Screening Level Method B ¹	Sub-Slab Soil Gas Screening Level Method C ¹	Sample Location, Sample Date, Laboratory Sample ID						
			LAI-22	LAI-23	LAI-24	LAI-25	LAI-26	LAI-27	LAI-28
			10/4/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017
			1710233A/B-04A	1710233A/B-11A	1710233A/B-15A	1710233A/B-13A	1710233A/B-12A	1710233A/B-16A	1710233A/B-14A
Cyclohexane	NL	NL	7.6 U	200	15	54 U	52	59	120
Dibromochloromethane	3.1	31	19 U	40 U	22 U	130 U	100 U	9.5 U	10 U
Ethanol	NL	NL	790	530	290	1,300	480 J	630	530
Ethyl Benzene	15,238	33,333	9.6 U	21 U	11 U	68 U	52 U	16	5.2 U
Freon 11	10,667	23,333	12 U	27 U	15 U	87 U	67 U	6.3 U	6.7 U
Freon 113	457,143	1,000,000	17 U	36 U	20 U	120 U	91 U	8.5 U	9.1 U
Freon 114	NL	NL	15 U	33 U	18 U	110 U	83 U	7.8 U	8.3 U
Freon 12	1,524	3,333	11 U	24 U	13 U	77 U	59 U	5.5 U	5.9 U
Heptane	NL	NL	13	110	11 U	64 U	49 U	60	80
Hexachlorobutadiene	3.8	38	94 U	200 U	110 U	660 U	510 U	48 U	51 U
Hexane	10,667	23,333	21	250	12	55 U	110	73	160
m,p-Xylene	1,524	3,333	12	21 U	15	68 U	52 U	58	7.7
Methyl tert-butyl ether	321	3,205	32 U	68 U	38 U	220 U	43 U	16 U	17 U
Methylene Chloride	8,333	20,000	77 U	160 U	91 U	540 U	160 U	39 U	41 U
o-Xylene	1,524	3,333	9.6 U	21 U	11 U	68 U	52 U	16	5.2 U
Propylbenzene	NL	NL	11 U	23 U	13 U	76 U	58 U	5.5 U	5.8 U
Styrene	15,238	33,333	9.4 U	20 U	11 U	66 U	51 U	4.7 U	5.1 U
Tetrachloroethene	321	1,333	42	32 U	18 U	100 U	130	7.6 U	8.1 U
Tetrahydrofuran	NL	NL	6.5 U	14 U	7.7 U	46 U	35 U	3.3 U	3.5 U
Toluene	76,190	166,667	13	18	26	58 U	45 U	170	35
trans-1,2-Dichloroethene	NL	NL	8.7 U	19 U	10 U	170	140	4.4 U	4.7 U
trans-1,3-Dichloropropene	NL	NL	10 U	22 U	12 U	70 U	54 U	5.1 U	5.4 U
Trichloroethene	12	67	29	30	14 U	29,000	74,000	34	6.4 U
Vinyl Chloride	9.3	93	5.6 U	4,200	6.7 U	40 U	31	59	69
Natural Gas Analysis (%; modified ASTM D-1946)									
Helium	NL	NL	0.11 U	0.12 U	0.26 U	0.12 U	0.12 U	0.11 U	0.12 U

Notes:

Bold text indicates detected analyte

 Blue shading indicates exceedance of MTCA Method B screening level.

 Green shading indicates exceedance of MTCA Method C screening level.

¹ For the purposes of data evaluation, both cancer and non-cancer screening levels were compared and the minimum of the two was selected for both Method B and Method C 2015 Sub-Slab MTCA soil-gas screening levels.

Abbreviations and Acronyms:

µg/m³ = micrograms per cubic meter

% = percent

CUL = cleanup level

ID = Identification

ND = not detected

NL = not listed

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

E = Result exceeds the instrument calibration range.

ATTACHMENT 1

Soil Boring Logs

Soil Classification System

	MAJOR DIVISIONS	CLEAN GRAVEL (Little or no fines)	GRAPHIC SYMBOL	LETTER SYMBOL ⁽¹⁾	TYPICAL DESCRIPTIONS ⁽²⁾⁽³⁾
COARSE-GRAINED SOIL (More than 50% of material is larger than No. 200 sieve size)	GRAVEL AND GRAVELLY SOIL (More than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (Little or no fines)		GW	Well-graded gravel; gravel/sand mixture(s); little or no fines
		GRAVEL WITH FINES (Appreciable amount of fines)		GP	Poorly graded gravel; gravel/sand mixture(s); little or no fines
		GRAVEL WITH FINES (Appreciable amount of fines)		GM	Silty gravel; gravel/sand/silt mixture(s)
	SAND AND SANDY SOIL (More than 50% of coarse fraction passed through No. 4 sieve)	CLEAN SAND (Little or no fines)		SW	Well-graded sand; gravelly sand; little or no fines
		CLEAN SAND (Little or no fines)		SP	Poorly graded sand; gravelly sand; little or no fines
		SAND WITH FINES (Appreciable amount of fines)		SM	Silty sand; sand/silt mixture(s)
FINE-GRAINED SOIL (More than 50% of material is smaller than No. 200 sieve size)	SILT AND CLAY (Liquid limit less than 50)	CLEAN SAND (Little or no fines)		ML	Inorganic silt and very fine sand; rock flour; silty or clayey fine sand or clayey silt with slight plasticity
		SILT AND CLAY (Liquid limit less than 50)		CL	Inorganic clay of low to medium plasticity; gravelly clay; sandy clay; silty clay; lean clay
		SILT AND CLAY (Liquid limit less than 50)		OL	Organic silt; organic, silty clay of low plasticity
	SILT AND CLAY (Liquid limit greater than 50)	SILT AND CLAY (Liquid limit greater than 50)		MH	Inorganic silt; micaceous or diatomaceous fine sand
		SILT AND CLAY (Liquid limit greater than 50)		CH	Inorganic clay of high plasticity; fat clay
		SILT AND CLAY (Liquid limit greater than 50)		OH	Organic clay of medium to high plasticity; organic silt
	HIGHLY ORGANIC SOIL		PT	Peat; humus; swamp soil with high organic content	

OTHER MATERIALS	GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
PAVEMENT		AC or PC	Asphalt concrete pavement or Portland cement pavement
ROCK		RK	Rock (See Rock Classification)
WOOD		WD	Wood, lumber, wood chips
DEBRIS		DB	Construction debris, garbage

- Notes:
- USCS letter symbols correspond to symbols used by the Unified Soil Classification System and ASTM classification methods. Dual letter symbols (e.g., SP-SM for sand or gravel) indicate soil with an estimated 5-15% fines. Multiple letter symbols (e.g., ML/CL) indicate borderline or multiple soil classifications.
 - Soil descriptions are based on the general approach presented in the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), outlined in ASTM D 2488. Where laboratory index testing has been conducted, soil classifications are based on the Standard Test Method for Classification of Soils for Engineering Purposes, as outlined in ASTM D 2487.
 - Soil description terminology is based on visual estimates (in the absence of laboratory test data) of the percentages of each soil type and is defined as follows:
 - Primary Constituent: > 50% - "GRAVEL," "SAND," "SILT," "CLAY," etc.
 - Secondary Constituents: > 30% and ≤ 50% - "very gravelly," "very sandy," "very silty," etc.
 - > 15% and ≤ 30% - "gravelly," "sandy," "silty," etc.
 - Additional Constituents: > 5% and ≤ 15% - "with gravel," "with sand," "with silt," etc.
 - ≤ 5% - "with trace gravel," "with trace sand," "with trace silt," etc., or not noted.
 - Soil density or consistency descriptions are based on judgement using a combination of sampler penetration blow counts, drilling or excavating conditions, field tests, and laboratory tests, as appropriate.

Drilling and Sampling Key		Field and Lab Test Data																																																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">SAMPLER TYPE</th> <th style="width: 85%;">DESCRIPTION</th> </tr> </thead> <tbody> <tr><td>a</td><td>3.25-inch O.D., 2.42-inch I.D. Split Spoon</td></tr> <tr><td>b</td><td>2.00-inch O.D., 1.50-inch I.D. Split Spoon</td></tr> <tr><td>c</td><td>Shelby Tube</td></tr> <tr><td>d</td><td>Grab Sample</td></tr> <tr><td>e</td><td>Single-Tube Core Barrel</td></tr> <tr><td>f</td><td>Double-Tube Core Barrel</td></tr> <tr><td>g</td><td>2.50-inch O.D., 2.00-inch I.D. WSDOT</td></tr> <tr><td>h</td><td>3.00-inch O.D., 2.375-inch I.D. Mod. California</td></tr> <tr><td>i</td><td>Other - See text if applicable</td></tr> <tr><td>1</td><td>300-lb Hammer, 30-inch Drop</td></tr> <tr><td>2</td><td>140-lb Hammer, 30-inch Drop</td></tr> <tr><td>3</td><td>Pushed</td></tr> <tr><td>4</td><td>Vibrocore (Rotasonic/Geoprobe)</td></tr> <tr><td>5</td><td>Other - See text if applicable</td></tr> </tbody> </table>	SAMPLER TYPE	DESCRIPTION	a	3.25-inch O.D., 2.42-inch I.D. Split Spoon	b	2.00-inch O.D., 1.50-inch I.D. Split Spoon	c	Shelby Tube	d	Grab Sample	e	Single-Tube Core Barrel	f	Double-Tube Core Barrel	g	2.50-inch O.D., 2.00-inch I.D. WSDOT	h	3.00-inch O.D., 2.375-inch I.D. Mod. California	i	Other - See text if applicable	1	300-lb Hammer, 30-inch Drop	2	140-lb Hammer, 30-inch Drop	3	Pushed	4	Vibrocore (Rotasonic/Geoprobe)	5	Other - See text if applicable		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Code</th> <th style="width: 85%;">Description</th> </tr> </thead> <tbody> <tr><td>PP = 1.0</td><td>Pocket Penetrometer, tsf</td></tr> <tr><td>TV = 0.5</td><td>Torvane, tsf</td></tr> <tr><td>PID = 100</td><td>Photoionization Detector VOC screening, ppm</td></tr> <tr><td>W = 10</td><td>Moisture Content, %</td></tr> <tr><td>D = 120</td><td>Dry Density, pcf</td></tr> <tr><td>-200 = 60</td><td>Material smaller than No. 200 sieve, %</td></tr> <tr><td>GS</td><td>Grain Size - See separate figure for data</td></tr> <tr><td>AL</td><td>Atterberg Limits - See separate figure for data</td></tr> <tr><td>GT</td><td>Other Geotechnical Testing</td></tr> <tr><td>CA</td><td>Chemical Analysis</td></tr> </tbody> </table>	Code	Description	PP = 1.0	Pocket Penetrometer, tsf	TV = 0.5	Torvane, tsf	PID = 100	Photoionization Detector VOC screening, ppm	W = 10	Moisture Content, %	D = 120	Dry Density, pcf	-200 = 60	Material smaller than No. 200 sieve, %	GS	Grain Size - See separate figure for data	AL	Atterberg Limits - See separate figure for data	GT	Other Geotechnical Testing	CA	Chemical Analysis
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<h3 style="margin: 0;">Groundwater</h3>																																																						
		Approximate water level at time of drilling (ATD)																																																				
		Approximate water level at time other than ATD																																																				

LAI-01

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description	Groundwater
0							Drilling Method: <u>Direct-Push</u> Ground Elevation (ft): <u>not measured</u> Drilled By: <u>ESN</u>	
0 - 0.5		d3				SP	Brown, fine to medium SAND with organics (grass roots; no odor, no sheen) (TOPSOIL)	Groundwater not encountered.
0.5 - 5.0						SM	Brown, silty, fine to coarse SAND (no odor, no sheen) (medium dense, moist) (FILL) - Driller indicates easy drilling to 5 ft, not likely TILL Soil gas sample: LAI-1@4.5 to 5.5 ft bgs	

Boring Completed 05/03/17
Total Depth of Boring = 5.0 ft.

222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG

- Notes:
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 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



TECT Aerospace Focused
Phase II ESA
Everett, Washington

Log of Boring LAI-01

Figure
1-2

LAI-02

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	
	0				[Solid Black]	AC	Asphalt concrete
	1	d3			[Small Circles]	GP	Gray-brown, sandy GRAVEL (no odor, no sheen) (medium dense, moist) (FILL)
	2				[Dotted]	SP-SM	Gray, fine SAND with silt (no odor, no sheen) (dense, damp) (TILL) - Driller indicates hard drilling at 1.5 to 2 ft
							Groundwater not encountered.

Boring Completed 05/03/17
Total Depth of Boring = 5.0 ft.

222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG

- Notes:
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Log of Boring LAI-02

Figure
1-3

LAI-03

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description	Groundwater
0							Drilling Method: <u>Direct-Push</u> Ground Elevation (ft): <u>not measured</u> Drilled By: <u>ESN</u>	
0 - 0.5		d3			[Symbol]	AC	Asphalt concrete	Groundwater not encountered.
0.5 - 2.5					[Symbol]	SP-SM	Gray, fine to coarse SAND with silt and some organics (no odor, no sheen) Soil gas sample: LAI-3@0.5 to 1.5 ft bgs	
2.5 - 5.0					[Symbol]	SP-SM	Gray, fine SAND with silt (no odor, no sheen) (TILL) Soil sample: LAI-3a(3)@2.5 to 3.5 ft bgs	

Boring Completed 05/02/17
 Total Depth of Boring = 5.0 ft.

222052.01 2/7/18 \\EDM\DATA\02\GINT\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG

- Notes:
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 Everett, Washington

Log of Boring LAI-03

Figure
1-4

LAI-03b

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	
	0			4.5	[Solid Black]	AC	Asphalt concrete
	[Interval]	d3		4.1	[Dotted]	SP	Gray-brown, fine to coarse SAND with gravel and weathered, peaty layer
	2				[Vertical Lines]	SP-SM	Gray, fine SAND with silt
							Groundwater not encountered.

Boring Completed 05/03/17
Total Depth of Boring = 5.0 ft.

222052.01 2/7/18 \\EDM\DATA02\GINT\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG

- Notes:
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LAI-05

SAMPLE DATA		SOIL PROFILE			GROUNDWATER			
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Direct-Push</u> Ground Elevation (ft): <u>not measured</u> Drilled By: <u>ESN</u>	
	d3				AC SP		Asphalt concrete Gray, fine SAND with gravel (no odor, no sheen) (medium dense, damp) (FILL)	Groundwater not encountered.
2					SP-SM		Gray, fine SAND with silt (no odor, no sheen) (dense, damp) (TILL) - Extremely hard drilling beginning at 5 ft Soil gas sample: LAI-5@4.5 to 5.5 ft bgs	
4							Soil sample: LAI-5(9)@8.5 to 9.5 ft bgs	
6	d3							
8								
10								

Boring Completed 05/02/17
 Total Depth of Boring = 10.0 ft.

- Notes:
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 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG



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 Everett, Washington

Log of Boring LAI-05

Figure
1-7

LAI-06

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	
	d3				AC SP	SP- SM	Groundwater not encountered.
0					Asphalt concrete		
2					Brown, fine to coarse SAND with gravel (no odor, no sheen) (medium dense, damp) (FILL)		
4					Gray, fine SAND with silt (no odor, no sheen) (dense, damp) (TILL)		
6					Refusal at 4.5 ft bgs		
8							
10							
12							
14							

Boring Completed 05/03/17
Total Depth of Boring = 4.5 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
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222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG



LAI-07

SAMPLE DATA		SOIL PROFILE			GROUNDWATER			
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Direct-Push</u> Ground Elevation (ft): <u>not measured</u> Drilled By: <u>ESN</u>	
	0				AC		Asphalt concrete	Groundwater not encountered.
	2	d3			SM		Gray-brown, silty, fine SAND (no odor, no sheen) (medium dense, damp) (FILL) Soil sample: LAI-7(1)@0.5 to 1.5 ft bgs Soil gas sample: LAI-7@1.5 to 2.5 ft bgs	
	4				SP-SM		Gray, fine SAND with silt (no odor, no sheen) (dense, damp) (TILL)	
6	Boring Completed 05/03/17 Total Depth of Boring = 5.0 ft.							
8								
10								
12								
14								

222052.01 2/1/18 N:\PROJECTS\222052.01\014.GPJ SOIL BORING LOG

- Notes:
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Everett, Washington

Log of Boring LAI-07

Figure
1-9

LAI-08

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	
	d3				AC SP SM		
0	Drilling Method: <u>Direct-Push</u> Ground Elevation (ft): <u>not measured</u> Drilled By: <u>ESN</u>						
2	Asphalt concrete Gray-brown, fine to coarse SAND with silt (no odor, no sheen) (medium dense, damp) (FILL) Soil gas sample: LAI-8@0.5 to 1.5 ft bgs - Driller indicates hard drilling at 1 ft Gray, silty, fine SAND (no odor, no sheen) (dense, damp) (TILL)						Groundwater not encountered.
4							

Boring Completed 05/02/17
 Total Depth of Boring = 5.0 ft.

222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG

- Notes:
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 Everett, Washington

Log of Boring LAI-08

Figure
1-10

LAI-09

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	
	d3				[Dotted Pattern]	AC SP	Groundwater not encountered.
0					[Solid Black]		
						Asphalt concrete	
						Brown, fine to coarse SAND with gravel (no odor, no sheen) (medium dense, moist) (FILL)	
2						Soil gas sample: LAI-9@1.5 to 2.5 ft bgs	
4							

Boring Completed 05/03/17
Total Depth of Boring = 5.0 ft.

222052.01 2/1/18 N:\PROJECTS\222052.01\014.GPJ SOIL BORING LOG

- Notes:
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TECT Aerospace Focused Phase II ESA Everett, Washington	Log of Boring LAI-09	Figure 1-11
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LAI-10b

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	
	d3			2.5	[Patterned Box]	AC SP- SM	Groundwater not encountered.
				Drilling Method: <u>Direct-Push</u> Ground Elevation (ft): <u>not measured</u> Drilled By: <u>ESN</u>			
				Asphalt concrete Brown, fine SAND with silt and gravel - no sheen - grades without gravel			

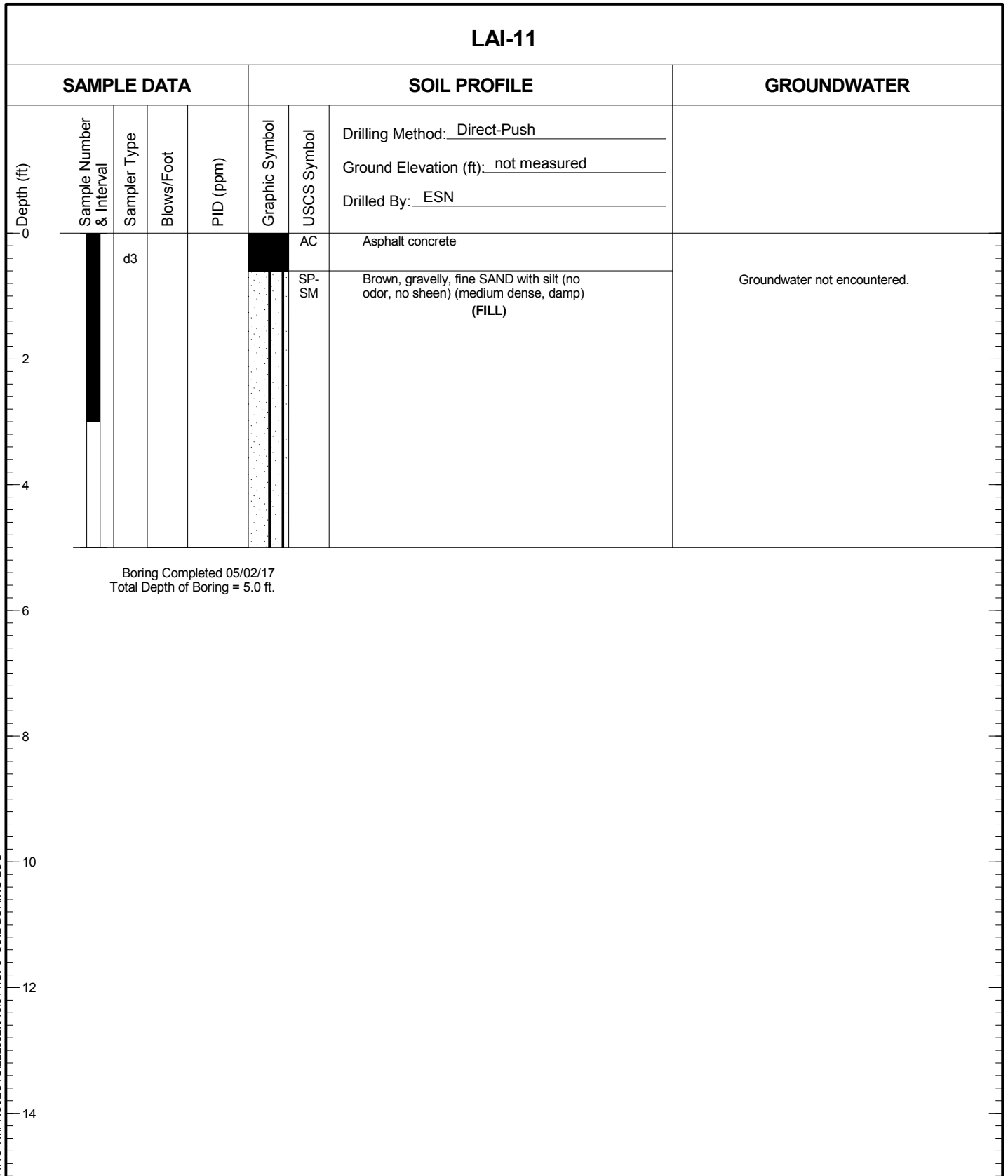
Boring Completed 05/03/17
Total Depth of Boring = 5.0 ft.

222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



LAI-11



- Notes:
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 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG



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Everett, Washington

Log of Boring LAI-11

Figure
1-14

LAI-12

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	
	0				[Solid Black]	AC	Asphalt concrete
	2	d3			[Dotted]	SP	Light-brown, fine SAND with gravel (no odor, no sheen) (medium dense, damp) (FILL)
	4				[Dotted]	SP	Soil sample: LAI-12(3)@2.5 to 3.5 ft bgs Soil gas sample: LAI-12@2.5 to 3.5 ft bgs Gray, fine SAND with gravel (no odor, no sheen) (dense, damp) (TILL)

Boring Completed 05/02/17
Total Depth of Boring = 5.0 ft.

Groundwater not encountered.

222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG

- Notes:
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 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



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Everett, Washington

Log of Boring LAI-12

Figure
1-15

LAI-13

SAMPLE DATA		SOIL PROFILE			GROUNDWATER			
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Hand Auger</u> Ground Elevation (ft): <u>not surveyed</u> Drilled By: <u>LAI</u>	
	d5					CON C GP	Concrete Grayish-brown, sandy, fine GRAVEL (no odor, no sheen) (medium dense, dry) (FILL) Soil gas sample: LAI-13@0.75 to 1 ft bgs Soil sample: LAI-13(1.2)@0.9 to 1.2 ft bgs	Groundwater not encountered.

Boring Completed 10/05/17
 Total Depth of Boring = 1.2 ft.

2

4



- Notes:
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 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG



TECT Aerospace Focused Phase II ESA Everett, Washington	Log of Boring LAI-13	Figure 1-16
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LAI-14

SAMPLE DATA		SOIL PROFILE			GROUNDWATER			
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Hand Auger</u> Ground Elevation (ft): <u>not surveyed</u> Drilled By: <u>LAI</u>	
	d5					CON C	Concrete	Groundwater not encountered.
						GP	Grayish-brown, sandy GRAVEL (no odor, no sheen) (medium dense, dry) (FILL) Soil sample: LAI-14(1.2)@0.9 to 1.2 ft bgs Soil gas sample: LAI-14@0.8 to 1.3 ft bgs	

Boring Completed 10/05/17
Total Depth of Boring = 1.2 ft.

2

4

- Notes:
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222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG



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Everett, Washington

Log of Boring LAI-14

Figure
1-17

LAI-15

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	
		d5				Drilling Method: <u>Hand Auger</u> Ground Elevation (ft): <u>not surveyed</u> Drilled By: <u>LAI</u>	
					CON C	Concrete	Groundwater not encountered.
					GP	Grayish-brown, sandy, fine GRAVEL (no odor, no sheen); difficult augering (very dense, dry) (FILL) Soil gas sample: LAI-15@0.8 to 1.1 ft bgs Soil sample: LAI-15(1.7)@1.4 to 1.7 ft bgs	

Boring Completed 10/05/17
Total Depth of Boring = 1.7 ft.

222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



TECT Aerospace Focused
Phase II ESA
Everett, Washington

Log of Boring LAI-15

Figure
1-18

LAI-16

SAMPLE DATA		SOIL PROFILE			GROUNDWATER	
Depth (ft) 0	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Drilling Method: <u>Hand Auger</u> Ground Elevation (ft): <u>not surveyed</u> Drilled By: <u>LAI</u>	
	Graphic Symbol	USCS Symbol	Concrete Brownish-gray, very sandy GRAVEL (no odor, no sheen) (medium dense, damp) (FILL) Soil sample: LAI-16(2.1)@0.8 to 2.1 ft bgs Soil gas sample: LAI-16@1 to 1.25 ft bgs - Lube/cutting oil-like odor			
2	d5					Groundwater not encountered.

Boring Completed 10/05/17
Total Depth of Boring = 2.1 ft.

222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG

- Notes:
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Log of Boring LAI-16

Figure
1-19

LAI-17

SAMPLE DATA		SOIL PROFILE			GROUNDWATER				
o	Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Hand Auger</u> Ground Elevation (ft): <u>not surveyed</u> Drilled By: <u>LAI</u>	Groundwater not encountered.
		d5				CON C	Concrete		
						SP	Grayish-brown, fine to coarse SAND (no odor, no sheen) (medium dense, dry) (FILL)	Soil gas sample: LAI-17@0.9 to 1.3 ft bgs Soil sample: LAI-17(1.7)@1.4 to 1.7 ft bgs	

Boring Completed 10/05/17
Total Depth of Boring = 1.7 ft.

2

4

- Notes:
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 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG



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Log of Boring LAI-17

Figure
1-20

LAI-18

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	
	d5					CON C SP	
	Drilling Method: <u>Hand Auger</u> Ground Elevation (ft): <u>not surveyed</u> Drilled By: <u>LAI</u>						
	Concrete						Groundwater not encountered.
	Brownish-gray, fine to coarse SAND with pea gravel (medium dense, dry) (FILL) Soil gas sample: LAI-18@1.05 to 1.35 ft bgs Soil sample: LAI-18(1.8)@1.4 to 1.8 ft bgs						



Boring Completed 10/05/17
Total Depth of Boring = 1.8 ft.

222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG

- Notes:
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LAI-19

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
o Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	Drilling Method: <u>Hand Auger</u> Ground Elevation (ft): <u>not surveyed</u> Drilled By: <u>LAI</u>	
	d5					CON C Concrete	Groundwater not encountered.
2					SP Dark gray, fine to medium SAND (no sheen, solvent odor) (medium dense, dry) (FILL) Soil gas sample: LAI-19@1.1 to 1.4 ft bgs Soil sample: LAI-19(2.4)@2.1 to 2.4 ft bgs		

Boring Completed 10/05/17
Total Depth of Boring = 2.4 ft.

222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG

- Notes:
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Phase II ESA
Everett, Washington

Log of Boring LAI-19

Figure
1-22

LAI-20

SAMPLE DATA		SOIL PROFILE			GROUNDWATER			
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Hand Auger</u> Ground Elevation (ft): <u>not surveyed</u> Drilled By: <u>LAI</u>	
	d5					CON C	Concrete	Groundwater not encountered.
						SP	Brownish-gray, fine to coarse SAND (no odor, no sheen) (medium dense, dry) (FILL) Soil sample: LAI-20(1.2)@0.9 to 1.2 ft bgs Soil gas sample: LAI-20@0.8 to 1.2 ft bgs	

Boring Completed 10/05/17
Total Depth of Boring = 1.2 ft.

2

4

- Notes:
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 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG



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Phase II ESA
Everett, Washington

Log of Boring LAI-20

Figure
1-23

LAI-21

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	
	d5					CON C SP	
					Drilling Method: <u>Hand Auger</u> Ground Elevation (ft): <u>not surveyed</u> Drilled By: <u>LAI</u>		
					Concrete		Groundwater not encountered.
					Brownish-gray, fine to coarse SAND with gravel (medium dense, dry) (FILL) Soil gas sample: LAI-21@0.7 to 1 ft bgs Soil sample: LAI-21(1.5)@1.2 to 1.5 ft bgs - Hit refusal at 1.5 ft bgs on some large gravels		

Boring Completed 10/05/17
Total Depth of Boring = 1.5 ft.

2

4

- Notes:
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 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG



LAI-22

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
o Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	
	d5					CON C GP	Drilling Method: <u>Hand Auger</u> Ground Elevation (ft): <u>not surveyed</u> Drilled By: <u>LAI</u>
							Concrete
							Pea gravel (no sheen, organic odor) (medium dense, dry)
							Soil gas sample: LAI-22@0.75 to 1.05 ft bgs Soil sample: LAI-22(1.5)@1.0 to 1.5 ft bgs

Boring Completed 10/05/17
Total Depth of Boring = 1.5 ft.

222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
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 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



LAI-23

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile Description	Groundwater
0							Drilling Method: <u>Hollow-Stem Auger</u> Ground Elevation (ft): <u>not surveyed</u> Drilled By: <u>Cascade Drilling Inc.</u>	
0 - 1.9	a1		30	1.9	CON	C	Concrete	Groundwater not encountered.
1.9 - 1.968	a1	50/6"	1.968		SP-SM		Brownish-black, medium to coarse SAND with silt and gravel (no odor, no sheen) (loose, damp)	
1.968 - 2.5					(FILL)		(FILL)	
2.5 - 3.2					SP-SM		Gray, fine to coarse SAND with gravel (no odor, no sheen) (loose, damp)	
3.2 - 5.17	a1		0.517		ML		Brown to gray, fine to medium SAND with silt (no odor, no sheen) (loose, damp) Soil gas sample: LAI-23@1.8 to 2.5 ft bgs	
5.17 - 6.8					(TILL)		(TILL)	
6.8 - 7.351	a1	50/5"	0.351				Gray, fine SAND with silt (no odor, no sheen) (very dense, damp)	
7.351 - 8.35	a1	50/6"	0.35		ML		Gray SILT with fine sand and trace gravel (no odor, no sheen) (hard, damp) - Hard drilling at 3 ft bgs	
8.35 - 9.772			0.772				Tan SILT with fine sand (no odor, no sheen) (hard, damp)	
9.772 - 11.926	a1	50/6"	1.926				Gray SILT with trace fine sand, gravel, and fine cobbles (no odor, no sheen) (hard, damp)	
11.926 - 15.01							Soil sample: LAI-23(16.5)@15 to 16.5 ft bgs	
15.01 - 16.5	a1	50/6"	2.01		SP-SM		Gray to brown, medium SAND with silt and trace gravel (no odor, no sheen) (very dense, moist)	
16.5 - 18.23	a1	50/6"	0.23		ML		Gray, gravelly SILT with trace fine sand (no odor, no sheen) (hard, damp)	
18.23 - 20.1567	a1	50/6"	1.567					
20.1567 - 22.249	a1	50/6"	1.249					

Boring Completed 10/05/17
Total Depth of Boring = 25.0 ft.

- Notes:
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 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222052.01 2/1/18 N:\PROJECTS\222052.01\014.GPJ SOIL BORING LOG



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Phase II ESA
Everett, Washington

Log of Boring LAI-23

Figure
1-26

LAI-24

SAMPLE DATA				SOIL PROFILE		GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol
				Drilling Method: <u>Hollow-Stem Auger</u> Ground Elevation (ft): <u>not surveyed</u> Drilled By: <u>Cascade Drilling Inc.</u>		
0					AC	Asphalt
5	a2	50/6"	4.47		SP-SM	Brown, fine to coarse SAND with silt and gravel (no odor, no sheen) (very dense, damp) (FILL) Soil gas sample: LAI-24@0.9 to 1.45 ft bgs
10	a2	50/6"	3.4		ML	Light-brown SILT with fine sand and trace gravel (spicy odor, no sheen) (hard, damp) (TILL)
15	a2	50/6"	1.65		SP-SM	Blackish-brown, fine to coarse SAND with silt (no odor, no sheen) (very dense, moist)
20	a2	50/3"	1.401		ML	Gray SILT with trace coarse sand (no odor, no sheen) (hard, damp)
25	a2	50/3"	6.5			Soil sample: LAI-24(10.75)@10.5 to 10.75 ft bgs
30	a2	50/3"	1.674			
35	a2	50/5"	3.14		SP-SM	Gray, medium SAND with silt (no odor, no sheen) (very dense, wet)
40	a2	50/5"	2.448		ML	Gray SILT with trace fine to medium sand and gravel (no odor, no sheen) (hard, damp)
45	a2	50/4"	1.468			- Fine cobble lense approximately 0.3' thick
50	a2	50/6"	2.37			- No sheen, sweet odor

Boring Completed 10/09/17
 Total Depth of Boring = 25.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG



LAI-25

SAMPLE DATA				SOIL PROFILE		GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol
					Drilling Method: <u>Hollow-Stem Auger</u> Ground Elevation (ft): <u>not surveyed</u> Drilled By: <u>Cascade Drilling Inc.</u>	
0	a1	a1	21	0.0	AC SP	Asphalt
5	a1	a1	16	0.0	ML	Gray, gravelly, fine to coarse SAND with trace silt (no odor, no sheen) (loose, dry) (FILL) Reddish-brown SILT with sand, trace gravel, and wood chips (no odor, no sheen) (soft, damp) Soil gas sample: LAI-25@3.5 to 4.5 ft bgs
10	a1	a1	22	0.0 0.0	ML	Brown SILT with medium coarse sand and gravel (no odor, no sheen) (hard, damp) (TILL)
15	a1	a1	50/6"	0.0	SM	Tan, very silty, fine SAND with gravel and medium sand (no odor, no sheen) (very dense, damp)
20	a1	a1	50/6"	0.495 0.427	ML	Gray SILT with fine sand and trace gravel (no odor, no sheen) (hard, damp)
25	a1	a1	50/6"	13	SM	Silty, fine SAND with trace coarse sand and gravel (no odor, no sheen) (very dense, damp)
30	a1	a1	50/6"	3.457 2.160	ML	- Very hard rock
35	a1	a1	50/6"	13.5	SM	Silty, fine SAND with trace coarse sand and gravel (no odor, no sheen) (very dense, damp) Soil sample: LAI-25(15)@14 to 15 ft bgs
40	a1	a1	50/6"	0.702	SM	- Very hard rock
45				0.017		- Very hard rock

Boring Completed 10/05/17
Total Depth of Boring = 21.5 ft.

- Notes:
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 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG



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Phase II ESA
Everett, Washington

Log of Boring LAI-25

Figure
1-28

LAI-26

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	
	Drilling Method: <u>Hollow-Stem Auger</u> Ground Elevation (ft): <u>not surveyed</u> Drilled By: <u>Cascade Drilling Inc.</u>						
0	a1	a1	50	54 87 38.4	AC SP- SM	SM	Groundwater not encountered.
	a1	a1	60	76 80	SM	SM	
5	a1	a1	50/ 6"	150 557	SM	SM	
	a1	a1	50/ 6"	364			
	a1	a1	50/ 6"	60			
10	a1	a1	50/ 6"	44			
	a1	a1	50/ 6"	0.35			

Boring Completed 10/05/17
 Total Depth of Boring = 12.5 ft.

- Notes:
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222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG



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 Everett, Washington

Log of Boring LAI-26

Figure
1-29

LAI-27

SAMPLE DATA				SOIL PROFILE		GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	
	Drilling Method: <u>Hollow-Stem Auger</u> Ground Elevation (ft): <u>not surveyed</u> Drilled By: <u>Cascade Drilling Inc.</u>						
	a1	33	0.013	AC SP	Asphalt	Groundwater not encountered.	
	a1	17	0.468	(FILL)	Medium brown, medium to coarse SAND with gravel and trace fine cobble (no odor, no sheen) (loose, damp)		
	a1	27	0.948	1.563	ML		Soil gas sample: LAI-27@2.0 to 2.8 ft bgs
	a1	50/6"	4.097	SM	- Grades to brown (no odor, no sheen)		
	a1	50/6"	14.43	SP- SM	Medium brown, silty, fine SAND with trace gravel (no odor, no sheen) (very dense, damp)		
	a1	50/6"	Soil sample: LAI-27(8)@7.5 to 8 ft bgs	Gray, fine to medium SAND with silt and trace gravel (no odor, no sheen) (very dense, damp)			
	a1	50/5"	No Recovery	- Sluff from the overlying layer of SAND with silt from 10 to 10.5 ft bgs			
	a1	50/5"	0.308	ML	Gray SILT with fine sand and trace coarse sand and fine gravel (no odor, no sheen) (hard, damp)		
a1	50/5"	1.941	0.321	a1			
a1	50/6"	0.676	1.208	a1			

Boring Completed 10/06/17
 Total Depth of Boring = 25.0 ft.

- Notes:
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 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

222052.01 2/1/18 N:\PROJECTS\222052.01\014.GPJ SOIL BORING LOG



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 Everett, Washington

Log of Boring LAI-27

Figure
1-30

LAI-28

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description	Groundwater
							Drilling Method: <u>Hollow-Stem Auger</u> Ground Elevation (ft): <u>not surveyed</u> Drilled By: <u>Cascade Drilling Inc.</u>	
0					CON C		Concrete	
	a2			5.934	SP		Gray to brown, fine to coarse SAND with gravel (slight sweet odor, no sheen) (loose, dry)	Groundwater not encountered.
	a2			2.901	SP		Soil gas sample: LAI-28@1.1 to 2.1 ft bgs	
	a2	50/4"		2.520	ML		Gray, medium SAND with trace silt (grease-like odor, no sheen) (hard, damp)	
5	a2	50/4"		1.489	SM		Medium brown, sandy SILT with trace gravel (no odor, no sheen) (hard, damp)	
							Gray, very silty, fine SAND with trace gravel (sweet odor, no sheen) (very dense, dry)	
	a2	50/4"		2.230			- no odor, no sheen	
10	a2	50/4"		2.230			- sweet odor, no sheen	
	a2	50/4"		3.045	ML		Gray SILT with fine to coarse sand and trace gravel (sweet odor, no sheen) (hard, damp)	
15	a2	50/4"		3.986				
	a2	50/4"		50			Soil sample: LAI-28(17.75)@17.5 to 17.75 ft bgs	
20	a2	50/4"		2.022			- rock in shoe	
	a2	50/4"		1.506			- rock in shoe	

Boring Completed 10/09/17
Total Depth of Boring = 25.0 ft.

- Notes:
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222052.01 2/1/18 N:\PROJECTS\222052.01\0.014.GPJ SOIL BORING LOG



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Phase II ESA
Everett, Washington

Log of Boring LAI-28

Figure
1-31

Laboratory Analytical Results

5/18/2017

Ms. Kathryn Hartley
Landau Associates, Inc.
130 2nd Avenue South

Edmonds WA 98020

Project Name: TECT Phase II

Project #: 222052.010.013

Workorder #: 1705175A

Dear Ms. Kathryn Hartley

The following report includes the data for the above referenced project for sample(s) received on 5/8/2017 at Air Toxics Ltd.

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

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

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1705175A

Work Order Summary

CLIENT: Ms. Kathryn Hartley
Landau Associates, Inc.
130 2nd Avenue South
Edmonds, WA 98020

BILL TO: Ms. Kathryn Hartley
Landau Associates, Inc.
130 2nd Avenue South
Edmonds, WA 98020

PHONE: 425-329-0268

P.O. # 222052.010.013

FAX: 425-778-6409

PROJECT # 222052.010.013 TECT Phase II

DATE RECEIVED: 05/08/2017

CONTACT: Kelly Buettner

DATE COMPLETED: 05/18/2017

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	LA1-3	TO-15	0.2 "Hg	15.1 psi
02A	LA1-8	TO-15	2.4 "Hg	15 psi
03A	LA1-10	TO-15	0.8 "Hg	14.8 psi
04A	LA1-5	TO-15	1.2 "Hg	15.2 psi
05A	LA1-12	TO-15	0.6 "Hg	15.6 psi
06A	LA1-11	TO-15	0.2 "Hg	14.4 psi
07A	LA1-7	TO-15	6.3 "Hg	15 psi
08A	LA1-9	TO-15	0.6 "Hg	14.9 psi
09A	LA1-1	TO-15	0.4 "Hg	14.9 psi
10A	Lab Blank	TO-15	NA	NA
11A	CCV	TO-15	NA	NA
12A	LCS	TO-15	NA	NA
12AA	LCSD	TO-15	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 05/18/17

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
 TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
 Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.

Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
EPA Method TO-15
Landau Associates, Inc.
Workorder# 1705175A

Nine 1 Liter Summa Canister samples were received on May 08, 2017. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Dilution was performed on sample LA1-11 due to the presence of high level target species.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

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

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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

Client Sample ID: LA1-3

Lab ID#: 1705175A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	4.1	14	7.7	26
Acetone	10	11	24	26
Toluene	1.0	2.1	3.8	8.0

Client Sample ID: LA1-8

Lab ID#: 1705175A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	4.4	14	8.3	27
Acetone	11	25	26	59
Carbon Disulfide	4.4	5.5	14	17
Hexane	1.1	99	3.9	350
Cyclohexane	1.1	57	3.8	200
2,2,4-Trimethylpentane	1.1	2.4	5.1	11
Benzene	1.1	4.7	3.5	15
Heptane	1.1	33	4.5	140
Toluene	1.1	15	4.1	55
Ethyl Benzene	1.1	1.2	4.8	5.4
m,p-Xylene	1.1	4.6	4.8	20
o-Xylene	1.1	1.6	4.8	6.7

Client Sample ID: LA1-10

Lab ID#: 1705175A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	4.1	18	7.8	34
Acetone	10	14	24	33
Toluene	1.0	2.4	3.9	9.1

Client Sample ID: LA1-5

Lab ID#: 1705175A-04A

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

Client Sample ID: LA1-5

Lab ID#: 1705175A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	1.1	68	2.3	150
Acetone	11	24	25	57
Carbon Disulfide	4.2	4.2	13	13
Hexane	1.1	13	3.7	47
2-Butanone (Methyl Ethyl Ketone)	4.2	4.5	12	13
Cyclohexane	1.1	4.7	3.6	16
2,2,4-Trimethylpentane	1.1	1.1	5.0	5.1
Benzene	1.1	9.4	3.4	30
Heptane	1.1	5.0	4.3	20
Toluene	1.1	8.0	4.0	30
m,p-Xylene	1.1	1.6	4.6	7.0

Client Sample ID: LA1-12

Lab ID#: 1705175A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	1.0	55	2.3	120
Ethanol	4.2	17	7.9	33
Acetone	10	28	25	66
Hexane	1.0	24	3.7	85
2-Butanone (Methyl Ethyl Ketone)	4.2	5.8	12	17
Cyclohexane	1.0	6.4	3.6	22
2,2,4-Trimethylpentane	1.0	1.3	4.9	6.2
Benzene	1.0	5.2	3.4	16
Heptane	1.0	5.1	4.3	21
Toluene	1.0	6.3	4.0	24
m,p-Xylene	1.0	1.2	4.6	5.3

Client Sample ID: LA1-11

Lab ID#: 1705175A-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	10	2100	25	5400

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

Client Sample ID: LA1-11

Lab ID#: 1705175A-06A

Carbon Disulfide	40	52	120	160
Hexane	10	17	35	60
cis-1,2-Dichloroethene	10	110	39	440
Heptane	10	10	41	42
Toluene	10	40	37	150

Client Sample ID: LA1-7

Lab ID#: 1705175A-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.3	92	3.3	240
Ethanol	5.1	13	9.6	25
Acetone	13	76	30	180
Carbon Disulfide	5.1	5.6	16	17
Hexane	1.3	16	4.5	57
2-Butanone (Methyl Ethyl Ketone)	5.1	15	15	45
cis-1,2-Dichloroethene	1.3	3.9	5.1	16
Cyclohexane	1.3	8.1	4.4	28
2,2,4-Trimethylpentane	1.3	1.6	6.0	7.6
Benzene	1.3	4.2	4.1	14
Heptane	1.3	6.9	5.2	28
Toluene	1.3	5.6	4.8	21

Client Sample ID: LA1-9

Lab ID#: 1705175A-08A

No Detections Were Found.

Client Sample ID: LA1-1

Lab ID#: 1705175A-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	4.1	4.2	7.7	7.9
Acetone	10	11	24	27



Air Toxics

Client Sample ID: LA1-3

Lab ID#: 1705175A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051521	Date of Collection:	5/2/17 3:54:00 PM
Dil. Factor:	2.04	Date of Analysis:	5/15/17 10:45 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.0	Not Detected	5.0	Not Detected
Freon 114	1.0	Not Detected	7.1	Not Detected
Chloromethane	10	Not Detected	21	Not Detected
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
1,3-Butadiene	1.0	Not Detected	2.2	Not Detected
Bromomethane	10	Not Detected	40	Not Detected
Chloroethane	4.1	Not Detected	11	Not Detected
Freon 11	1.0	Not Detected	5.7	Not Detected
Ethanol	4.1	14	7.7	26
Freon 113	1.0	Not Detected	7.8	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.0	Not Detected
Acetone	10	11	24	26
2-Propanol	4.1	Not Detected	10	Not Detected
Carbon Disulfide	4.1	Not Detected	13	Not Detected
3-Chloropropene	4.1	Not Detected	13	Not Detected
Methylene Chloride	10	Not Detected	35	Not Detected
Methyl tert-butyl ether	4.1	Not Detected	15	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.0	Not Detected
Hexane	1.0	Not Detected	3.6	Not Detected
1,1-Dichloroethane	1.0	Not Detected	4.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.1	Not Detected	12	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.0	Not Detected
Tetrahydrofuran	1.0	Not Detected	3.0	Not Detected
Chloroform	1.0	Not Detected	5.0	Not Detected
1,1,1-Trichloroethane	1.0	Not Detected	5.6	Not Detected
Cyclohexane	1.0	Not Detected	3.5	Not Detected
Carbon Tetrachloride	1.0	Not Detected	6.4	Not Detected
2,2,4-Trimethylpentane	1.0	Not Detected	4.8	Not Detected
Benzene	1.0	Not Detected	3.2	Not Detected
1,2-Dichloroethane	1.0	Not Detected	4.1	Not Detected
Heptane	1.0	Not Detected	4.2	Not Detected
Trichloroethene	1.0	Not Detected	5.5	Not Detected
1,2-Dichloropropane	1.0	Not Detected	4.7	Not Detected
1,4-Dioxane	4.1	Not Detected	15	Not Detected
Bromodichloromethane	1.0	Not Detected	6.8	Not Detected
cis-1,3-Dichloropropene	1.0	Not Detected	4.6	Not Detected
4-Methyl-2-pentanone	1.0	Not Detected	4.2	Not Detected
Toluene	1.0	2.1	3.8	8.0
trans-1,3-Dichloropropene	1.0	Not Detected	4.6	Not Detected
1,1,2-Trichloroethane	1.0	Not Detected	5.6	Not Detected
Tetrachloroethene	1.0	Not Detected	6.9	Not Detected
2-Hexanone	4.1	Not Detected	17	Not Detected

Client Sample ID: LA1-3

Lab ID#: 1705175A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051521	Date of Collection:	5/2/17 3:54:00 PM
Dil. Factor:	2.04	Date of Analysis:	5/15/17 10:45 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.0	Not Detected	8.7	Not Detected
1,2-Dibromoethane (EDB)	1.0	Not Detected	7.8	Not Detected
Chlorobenzene	1.0	Not Detected	4.7	Not Detected
Ethyl Benzene	1.0	Not Detected	4.4	Not Detected
m,p-Xylene	1.0	Not Detected	4.4	Not Detected
o-Xylene	1.0	Not Detected	4.4	Not Detected
Styrene	1.0	Not Detected	4.3	Not Detected
Bromoform	1.0	Not Detected	10	Not Detected
Cumene	1.0	Not Detected	5.0	Not Detected
1,1,2,2-Tetrachloroethane	1.0	Not Detected	7.0	Not Detected
Propylbenzene	1.0	Not Detected	5.0	Not Detected
4-Ethyltoluene	1.0	Not Detected	5.0	Not Detected
1,3,5-Trimethylbenzene	1.0	Not Detected	5.0	Not Detected
1,2,4-Trimethylbenzene	1.0	Not Detected	5.0	Not Detected
1,3-Dichlorobenzene	1.0	Not Detected	6.1	Not Detected
1,4-Dichlorobenzene	1.0	Not Detected	6.1	Not Detected
alpha-Chlorotoluene	1.0	Not Detected	5.3	Not Detected
1,2-Dichlorobenzene	1.0	Not Detected	6.1	Not Detected
1,2,4-Trichlorobenzene	4.1	Not Detected	30	Not Detected
Hexachlorobutadiene	4.1	Not Detected	44	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	108	70-130



Air Toxics

Client Sample ID: LA1-8

Lab ID#: 1705175A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051522	Date of Collection:	5/2/17 4:37:00 PM
Dil. Factor:	2.20	Date of Analysis:	5/15/17 11:12 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.4	Not Detected
Freon 114	1.1	Not Detected	7.7	Not Detected
Chloromethane	11	Not Detected	23	Not Detected
Vinyl Chloride	1.1	Not Detected	2.8	Not Detected
1,3-Butadiene	1.1	Not Detected	2.4	Not Detected
Bromomethane	11	Not Detected	43	Not Detected
Chloroethane	4.4	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.2	Not Detected
Ethanol	4.4	14	8.3	27
Freon 113	1.1	Not Detected	8.4	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Acetone	11	25	26	59
2-Propanol	4.4	Not Detected	11	Not Detected
Carbon Disulfide	4.4	5.5	14	17
3-Chloropropene	4.4	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	38	Not Detected
Methyl tert-butyl ether	4.4	Not Detected	16	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Hexane	1.1	99	3.9	350
1,1-Dichloroethane	1.1	Not Detected	4.4	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.4	Not Detected	13	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Tetrahydrofuran	1.1	Not Detected	3.2	Not Detected
Chloroform	1.1	Not Detected	5.4	Not Detected
1,1,1-Trichloroethane	1.1	Not Detected	6.0	Not Detected
Cyclohexane	1.1	57	3.8	200
Carbon Tetrachloride	1.1	Not Detected	6.9	Not Detected
2,2,4-Trimethylpentane	1.1	2.4	5.1	11
Benzene	1.1	4.7	3.5	15
1,2-Dichloroethane	1.1	Not Detected	4.4	Not Detected
Heptane	1.1	33	4.5	140
Trichloroethene	1.1	Not Detected	5.9	Not Detected
1,2-Dichloropropane	1.1	Not Detected	5.1	Not Detected
1,4-Dioxane	4.4	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.4	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.0	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.5	Not Detected
Toluene	1.1	15	4.1	55
trans-1,3-Dichloropropene	1.1	Not Detected	5.0	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.0	Not Detected
Tetrachloroethene	1.1	Not Detected	7.5	Not Detected
2-Hexanone	4.4	Not Detected	18	Not Detected



Air Toxics

Client Sample ID: LA1-8

Lab ID#: 1705175A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051522	Date of Collection:	5/2/17 4:37:00 PM
Dil. Factor:	2.20	Date of Analysis:	5/15/17 11:12 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.4	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.4	Not Detected
Chlorobenzene	1.1	Not Detected	5.1	Not Detected
Ethyl Benzene	1.1	1.2	4.8	5.4
m,p-Xylene	1.1	4.6	4.8	20
o-Xylene	1.1	1.6	4.8	6.7
Styrene	1.1	Not Detected	4.7	Not Detected
Bromoform	1.1	Not Detected	11	Not Detected
Cumene	1.1	Not Detected	5.4	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.6	Not Detected
Propylbenzene	1.1	Not Detected	5.4	Not Detected
4-Ethyltoluene	1.1	Not Detected	5.4	Not Detected
1,3,5-Trimethylbenzene	1.1	Not Detected	5.4	Not Detected
1,2,4-Trimethylbenzene	1.1	Not Detected	5.4	Not Detected
1,3-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.7	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.6	Not Detected
1,2,4-Trichlorobenzene	4.4	Not Detected	33	Not Detected
Hexachlorobutadiene	4.4	Not Detected	47	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	110	70-130



Air Toxics

Client Sample ID: LA1-10

Lab ID#: 1705175A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051523	Date of Collection:	5/2/17 5:01:00 PM
Dil. Factor:	2.06	Date of Analysis:	5/15/17 11:38 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.0	Not Detected	5.1	Not Detected
Freon 114	1.0	Not Detected	7.2	Not Detected
Chloromethane	10	Not Detected	21	Not Detected
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
1,3-Butadiene	1.0	Not Detected	2.3	Not Detected
Bromomethane	10	Not Detected	40	Not Detected
Chloroethane	4.1	Not Detected	11	Not Detected
Freon 11	1.0	Not Detected	5.8	Not Detected
Ethanol	4.1	18	7.8	34
Freon 113	1.0	Not Detected	7.9	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Acetone	10	14	24	33
2-Propanol	4.1	Not Detected	10	Not Detected
Carbon Disulfide	4.1	Not Detected	13	Not Detected
3-Chloropropene	4.1	Not Detected	13	Not Detected
Methylene Chloride	10	Not Detected	36	Not Detected
Methyl tert-butyl ether	4.1	Not Detected	15	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Hexane	1.0	Not Detected	3.6	Not Detected
1,1-Dichloroethane	1.0	Not Detected	4.2	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.1	Not Detected	12	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Tetrahydrofuran	1.0	Not Detected	3.0	Not Detected
Chloroform	1.0	Not Detected	5.0	Not Detected
1,1,1-Trichloroethane	1.0	Not Detected	5.6	Not Detected
Cyclohexane	1.0	Not Detected	3.5	Not Detected
Carbon Tetrachloride	1.0	Not Detected	6.5	Not Detected
2,2,4-Trimethylpentane	1.0	Not Detected	4.8	Not Detected
Benzene	1.0	Not Detected	3.3	Not Detected
1,2-Dichloroethane	1.0	Not Detected	4.2	Not Detected
Heptane	1.0	Not Detected	4.2	Not Detected
Trichloroethene	1.0	Not Detected	5.5	Not Detected
1,2-Dichloropropane	1.0	Not Detected	4.8	Not Detected
1,4-Dioxane	4.1	Not Detected	15	Not Detected
Bromodichloromethane	1.0	Not Detected	6.9	Not Detected
cis-1,3-Dichloropropene	1.0	Not Detected	4.7	Not Detected
4-Methyl-2-pentanone	1.0	Not Detected	4.2	Not Detected
Toluene	1.0	2.4	3.9	9.1
trans-1,3-Dichloropropene	1.0	Not Detected	4.7	Not Detected
1,1,2-Trichloroethane	1.0	Not Detected	5.6	Not Detected
Tetrachloroethene	1.0	Not Detected	7.0	Not Detected
2-Hexanone	4.1	Not Detected	17	Not Detected



Air Toxics

Client Sample ID: LA1-10

Lab ID#: 1705175A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051523	Date of Collection:	5/2/17 5:01:00 PM
Dil. Factor:	2.06	Date of Analysis:	5/15/17 11:38 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.0	Not Detected	8.8	Not Detected
1,2-Dibromoethane (EDB)	1.0	Not Detected	7.9	Not Detected
Chlorobenzene	1.0	Not Detected	4.7	Not Detected
Ethyl Benzene	1.0	Not Detected	4.5	Not Detected
m,p-Xylene	1.0	Not Detected	4.5	Not Detected
o-Xylene	1.0	Not Detected	4.5	Not Detected
Styrene	1.0	Not Detected	4.4	Not Detected
Bromoform	1.0	Not Detected	11	Not Detected
Cumene	1.0	Not Detected	5.1	Not Detected
1,1,2,2-Tetrachloroethane	1.0	Not Detected	7.1	Not Detected
Propylbenzene	1.0	Not Detected	5.1	Not Detected
4-Ethyltoluene	1.0	Not Detected	5.1	Not Detected
1,3,5-Trimethylbenzene	1.0	Not Detected	5.1	Not Detected
1,2,4-Trimethylbenzene	1.0	Not Detected	5.1	Not Detected
1,3-Dichlorobenzene	1.0	Not Detected	6.2	Not Detected
1,4-Dichlorobenzene	1.0	Not Detected	6.2	Not Detected
alpha-Chlorotoluene	1.0	Not Detected	5.3	Not Detected
1,2-Dichlorobenzene	1.0	Not Detected	6.2	Not Detected
1,2,4-Trichlorobenzene	4.1	Not Detected	30	Not Detected
Hexachlorobutadiene	4.1	Not Detected	44	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	89	70-130
4-Bromofluorobenzene	108	70-130



Air Toxics

Client Sample ID: LA1-5

Lab ID#: 1705175A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051524	Date of Collection:	5/2/17 3:19:00 PM
Dil. Factor:	2.12	Date of Analysis:	5/16/17 12:04 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.2	Not Detected
Freon 114	1.1	Not Detected	7.4	Not Detected
Chloromethane	11	Not Detected	22	Not Detected
Vinyl Chloride	1.1	Not Detected	2.7	Not Detected
1,3-Butadiene	1.1	68	2.3	150
Bromomethane	11	Not Detected	41	Not Detected
Chloroethane	4.2	Not Detected	11	Not Detected
Freon 11	1.1	Not Detected	6.0	Not Detected
Ethanol	4.2	Not Detected	8.0	Not Detected
Freon 113	1.1	Not Detected	8.1	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Acetone	11	24	25	57
2-Propanol	4.2	Not Detected	10	Not Detected
Carbon Disulfide	4.2	4.2	13	13
3-Chloropropene	4.2	Not Detected	13	Not Detected
Methylene Chloride	11	Not Detected	37	Not Detected
Methyl tert-butyl ether	4.2	Not Detected	15	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Hexane	1.1	13	3.7	47
1,1-Dichloroethane	1.1	Not Detected	4.3	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.2	4.5	12	13
cis-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Tetrahydrofuran	1.1	Not Detected	3.1	Not Detected
Chloroform	1.1	Not Detected	5.2	Not Detected
1,1,1-Trichloroethane	1.1	Not Detected	5.8	Not Detected
Cyclohexane	1.1	4.7	3.6	16
Carbon Tetrachloride	1.1	Not Detected	6.7	Not Detected
2,2,4-Trimethylpentane	1.1	1.1	5.0	5.1
Benzene	1.1	9.4	3.4	30
1,2-Dichloroethane	1.1	Not Detected	4.3	Not Detected
Heptane	1.1	5.0	4.3	20
Trichloroethene	1.1	Not Detected	5.7	Not Detected
1,2-Dichloropropane	1.1	Not Detected	4.9	Not Detected
1,4-Dioxane	4.2	Not Detected	15	Not Detected
Bromodichloromethane	1.1	Not Detected	7.1	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	4.8	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.3	Not Detected
Toluene	1.1	8.0	4.0	30
trans-1,3-Dichloropropene	1.1	Not Detected	4.8	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	5.8	Not Detected
Tetrachloroethene	1.1	Not Detected	7.2	Not Detected
2-Hexanone	4.2	Not Detected	17	Not Detected



Air Toxics

Client Sample ID: LA1-5

Lab ID#: 1705175A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051524	Date of Collection:	5/2/17 3:19:00 PM
Dil. Factor:	2.12	Date of Analysis:	5/16/17 12:04 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.0	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.1	Not Detected
Chlorobenzene	1.1	Not Detected	4.9	Not Detected
Ethyl Benzene	1.1	Not Detected	4.6	Not Detected
m,p-Xylene	1.1	1.6	4.6	7.0
o-Xylene	1.1	Not Detected	4.6	Not Detected
Styrene	1.1	Not Detected	4.5	Not Detected
Bromoform	1.1	Not Detected	11	Not Detected
Cumene	1.1	Not Detected	5.2	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.3	Not Detected
Propylbenzene	1.1	Not Detected	5.2	Not Detected
4-Ethyltoluene	1.1	Not Detected	5.2	Not Detected
1,3,5-Trimethylbenzene	1.1	Not Detected	5.2	Not Detected
1,2,4-Trimethylbenzene	1.1	Not Detected	5.2	Not Detected
1,3-Dichlorobenzene	1.1	Not Detected	6.4	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.4	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.5	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.4	Not Detected
1,2,4-Trichlorobenzene	4.2	Not Detected	31	Not Detected
Hexachlorobutadiene	4.2	Not Detected	45	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	91	70-130
4-Bromofluorobenzene	109	70-130



Air Toxics

Client Sample ID: LA1-12

Lab ID#: 1705175A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051525	Date of Collection:	5/2/17 2:23:00 PM
Dil. Factor:	2.10	Date of Analysis:	5/16/17 12:30 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.0	Not Detected	5.2	Not Detected
Freon 114	1.0	Not Detected	7.3	Not Detected
Chloromethane	10	Not Detected	22	Not Detected
Vinyl Chloride	1.0	Not Detected	2.7	Not Detected
1,3-Butadiene	1.0	55	2.3	120
Bromomethane	10	Not Detected	41	Not Detected
Chloroethane	4.2	Not Detected	11	Not Detected
Freon 11	1.0	Not Detected	5.9	Not Detected
Ethanol	4.2	17	7.9	33
Freon 113	1.0	Not Detected	8.0	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.2	Not Detected
Acetone	10	28	25	66
2-Propanol	4.2	Not Detected	10	Not Detected
Carbon Disulfide	4.2	Not Detected	13	Not Detected
3-Chloropropene	4.2	Not Detected	13	Not Detected
Methylene Chloride	10	Not Detected	36	Not Detected
Methyl tert-butyl ether	4.2	Not Detected	15	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.2	Not Detected
Hexane	1.0	24	3.7	85
1,1-Dichloroethane	1.0	Not Detected	4.2	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.2	5.8	12	17
cis-1,2-Dichloroethene	1.0	Not Detected	4.2	Not Detected
Tetrahydrofuran	1.0	Not Detected	3.1	Not Detected
Chloroform	1.0	Not Detected	5.1	Not Detected
1,1,1-Trichloroethane	1.0	Not Detected	5.7	Not Detected
Cyclohexane	1.0	6.4	3.6	22
Carbon Tetrachloride	1.0	Not Detected	6.6	Not Detected
2,2,4-Trimethylpentane	1.0	1.3	4.9	6.2
Benzene	1.0	5.2	3.4	16
1,2-Dichloroethane	1.0	Not Detected	4.2	Not Detected
Heptane	1.0	5.1	4.3	21
Trichloroethene	1.0	Not Detected	5.6	Not Detected
1,2-Dichloropropane	1.0	Not Detected	4.8	Not Detected
1,4-Dioxane	4.2	Not Detected	15	Not Detected
Bromodichloromethane	1.0	Not Detected	7.0	Not Detected
cis-1,3-Dichloropropene	1.0	Not Detected	4.8	Not Detected
4-Methyl-2-pentanone	1.0	Not Detected	4.3	Not Detected
Toluene	1.0	6.3	4.0	24
trans-1,3-Dichloropropene	1.0	Not Detected	4.8	Not Detected
1,1,2-Trichloroethane	1.0	Not Detected	5.7	Not Detected
Tetrachloroethene	1.0	Not Detected	7.1	Not Detected
2-Hexanone	4.2	Not Detected	17	Not Detected

Client Sample ID: LA1-12

Lab ID#: 1705175A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051525	Date of Collection:	5/2/17 2:23:00 PM
Dil. Factor:	2.10	Date of Analysis:	5/16/17 12:30 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.0	Not Detected	8.9	Not Detected
1,2-Dibromoethane (EDB)	1.0	Not Detected	8.1	Not Detected
Chlorobenzene	1.0	Not Detected	4.8	Not Detected
Ethyl Benzene	1.0	Not Detected	4.6	Not Detected
m,p-Xylene	1.0	1.2	4.6	5.3
o-Xylene	1.0	Not Detected	4.6	Not Detected
Styrene	1.0	Not Detected	4.5	Not Detected
Bromoform	1.0	Not Detected	11	Not Detected
Cumene	1.0	Not Detected	5.2	Not Detected
1,1,2,2-Tetrachloroethane	1.0	Not Detected	7.2	Not Detected
Propylbenzene	1.0	Not Detected	5.2	Not Detected
4-Ethyltoluene	1.0	Not Detected	5.2	Not Detected
1,3,5-Trimethylbenzene	1.0	Not Detected	5.2	Not Detected
1,2,4-Trimethylbenzene	1.0	Not Detected	5.2	Not Detected
1,3-Dichlorobenzene	1.0	Not Detected	6.3	Not Detected
1,4-Dichlorobenzene	1.0	Not Detected	6.3	Not Detected
alpha-Chlorotoluene	1.0	Not Detected	5.4	Not Detected
1,2-Dichlorobenzene	1.0	Not Detected	6.3	Not Detected
1,2,4-Trichlorobenzene	4.2	Not Detected	31	Not Detected
Hexachlorobutadiene	4.2	Not Detected	45	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	91	70-130
4-Bromofluorobenzene	109	70-130



Air Toxics

Client Sample ID: LA1-11

Lab ID#: 1705175A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051529	Date of Collection:	5/2/17 2:52:00 PM
Dil. Factor:	19.9	Date of Analysis:	5/16/17 02:13 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	10	Not Detected	49	Not Detected
Freon 114	10	Not Detected	70	Not Detected
Chloromethane	100	Not Detected	200	Not Detected
Vinyl Chloride	10	2100	25	5400
1,3-Butadiene	10	Not Detected	22	Not Detected
Bromomethane	100	Not Detected	390	Not Detected
Chloroethane	40	Not Detected	100	Not Detected
Freon 11	10	Not Detected	56	Not Detected
Ethanol	40	Not Detected	75	Not Detected
Freon 113	10	Not Detected	76	Not Detected
1,1-Dichloroethene	10	Not Detected	39	Not Detected
Acetone	100	Not Detected	240	Not Detected
2-Propanol	40	Not Detected	98	Not Detected
Carbon Disulfide	40	52	120	160
3-Chloropropene	40	Not Detected	120	Not Detected
Methylene Chloride	100	Not Detected	340	Not Detected
Methyl tert-butyl ether	40	Not Detected	140	Not Detected
trans-1,2-Dichloroethene	10	Not Detected	39	Not Detected
Hexane	10	17	35	60
1,1-Dichloroethane	10	Not Detected	40	Not Detected
2-Butanone (Methyl Ethyl Ketone)	40	Not Detected	120	Not Detected
cis-1,2-Dichloroethene	10	110	39	440
Tetrahydrofuran	10	Not Detected	29	Not Detected
Chloroform	10	Not Detected	48	Not Detected
1,1,1-Trichloroethane	10	Not Detected	54	Not Detected
Cyclohexane	10	Not Detected	34	Not Detected
Carbon Tetrachloride	10	Not Detected	63	Not Detected
2,2,4-Trimethylpentane	10	Not Detected	46	Not Detected
Benzene	10	Not Detected	32	Not Detected
1,2-Dichloroethane	10	Not Detected	40	Not Detected
Heptane	10	10	41	42
Trichloroethene	10	Not Detected	53	Not Detected
1,2-Dichloropropane	10	Not Detected	46	Not Detected
1,4-Dioxane	40	Not Detected	140	Not Detected
Bromodichloromethane	10	Not Detected	67	Not Detected
cis-1,3-Dichloropropene	10	Not Detected	45	Not Detected
4-Methyl-2-pentanone	10	Not Detected	41	Not Detected
Toluene	10	40	37	150
trans-1,3-Dichloropropene	10	Not Detected	45	Not Detected
1,1,2-Trichloroethane	10	Not Detected	54	Not Detected
Tetrachloroethene	10	Not Detected	67	Not Detected
2-Hexanone	40	Not Detected	160	Not Detected



Air Toxics

Client Sample ID: LA1-11

Lab ID#: 1705175A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051529	Date of Collection:	5/2/17 2:52:00 PM
Dil. Factor:	19.9	Date of Analysis:	5/16/17 02:13 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	10	Not Detected	85	Not Detected
1,2-Dibromoethane (EDB)	10	Not Detected	76	Not Detected
Chlorobenzene	10	Not Detected	46	Not Detected
Ethyl Benzene	10	Not Detected	43	Not Detected
m,p-Xylene	10	Not Detected	43	Not Detected
o-Xylene	10	Not Detected	43	Not Detected
Styrene	10	Not Detected	42	Not Detected
Bromoform	10	Not Detected	100	Not Detected
Cumene	10	Not Detected	49	Not Detected
1,1,2,2-Tetrachloroethane	10	Not Detected	68	Not Detected
Propylbenzene	10	Not Detected	49	Not Detected
4-Ethyltoluene	10	Not Detected	49	Not Detected
1,3,5-Trimethylbenzene	10	Not Detected	49	Not Detected
1,2,4-Trimethylbenzene	10	Not Detected	49	Not Detected
1,3-Dichlorobenzene	10	Not Detected	60	Not Detected
1,4-Dichlorobenzene	10	Not Detected	60	Not Detected
alpha-Chlorotoluene	10	Not Detected	52	Not Detected
1,2-Dichlorobenzene	10	Not Detected	60	Not Detected
1,2,4-Trichlorobenzene	40	Not Detected	300	Not Detected
Hexachlorobutadiene	40	Not Detected	420	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	88	70-130
4-Bromofluorobenzene	111	70-130



Air Toxics

Client Sample ID: LA1-7

Lab ID#: 1705175A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051526	Date of Collection:	5/3/17 12:06:00 PM
Dil. Factor:	2.56	Date of Analysis:	5/16/17 12:57 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.3	Not Detected	6.3	Not Detected
Freon 114	1.3	Not Detected	8.9	Not Detected
Chloromethane	13	Not Detected	26	Not Detected
Vinyl Chloride	1.3	92	3.3	240
1,3-Butadiene	1.3	Not Detected	2.8	Not Detected
Bromomethane	13	Not Detected	50	Not Detected
Chloroethane	5.1	Not Detected	14	Not Detected
Freon 11	1.3	Not Detected	7.2	Not Detected
Ethanol	5.1	13	9.6	25
Freon 113	1.3	Not Detected	9.8	Not Detected
1,1-Dichloroethene	1.3	Not Detected	5.1	Not Detected
Acetone	13	76	30	180
2-Propanol	5.1	Not Detected	12	Not Detected
Carbon Disulfide	5.1	5.6	16	17
3-Chloropropene	5.1	Not Detected	16	Not Detected
Methylene Chloride	13	Not Detected	44	Not Detected
Methyl tert-butyl ether	5.1	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	1.3	Not Detected	5.1	Not Detected
Hexane	1.3	16	4.5	57
1,1-Dichloroethane	1.3	Not Detected	5.2	Not Detected
2-Butanone (Methyl Ethyl Ketone)	5.1	15	15	45
cis-1,2-Dichloroethene	1.3	3.9	5.1	16
Tetrahydrofuran	1.3	Not Detected	3.8	Not Detected
Chloroform	1.3	Not Detected	6.2	Not Detected
1,1,1-Trichloroethane	1.3	Not Detected	7.0	Not Detected
Cyclohexane	1.3	8.1	4.4	28
Carbon Tetrachloride	1.3	Not Detected	8.0	Not Detected
2,2,4-Trimethylpentane	1.3	1.6	6.0	7.6
Benzene	1.3	4.2	4.1	14
1,2-Dichloroethane	1.3	Not Detected	5.2	Not Detected
Heptane	1.3	6.9	5.2	28
Trichloroethene	1.3	Not Detected	6.9	Not Detected
1,2-Dichloropropane	1.3	Not Detected	5.9	Not Detected
1,4-Dioxane	5.1	Not Detected	18	Not Detected
Bromodichloromethane	1.3	Not Detected	8.6	Not Detected
cis-1,3-Dichloropropene	1.3	Not Detected	5.8	Not Detected
4-Methyl-2-pentanone	1.3	Not Detected	5.2	Not Detected
Toluene	1.3	5.6	4.8	21
trans-1,3-Dichloropropene	1.3	Not Detected	5.8	Not Detected
1,1,2-Trichloroethane	1.3	Not Detected	7.0	Not Detected
Tetrachloroethene	1.3	Not Detected	8.7	Not Detected
2-Hexanone	5.1	Not Detected	21	Not Detected

Client Sample ID: LA1-7

Lab ID#: 1705175A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051526	Date of Collection:	5/3/17 12:06:00 PM
Dil. Factor:	2.56	Date of Analysis:	5/16/17 12:57 AM

Compound	Rot. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.3	Not Detected	11	Not Detected
1,2-Dibromoethane (EDB)	1.3	Not Detected	9.8	Not Detected
Chlorobenzene	1.3	Not Detected	5.9	Not Detected
Ethyl Benzene	1.3	Not Detected	5.6	Not Detected
m,p-Xylene	1.3	Not Detected	5.6	Not Detected
o-Xylene	1.3	Not Detected	5.6	Not Detected
Styrene	1.3	Not Detected	5.4	Not Detected
Bromoform	1.3	Not Detected	13	Not Detected
Cumene	1.3	Not Detected	6.3	Not Detected
1,1,2,2-Tetrachloroethane	1.3	Not Detected	8.8	Not Detected
Propylbenzene	1.3	Not Detected	6.3	Not Detected
4-Ethyltoluene	1.3	Not Detected	6.3	Not Detected
1,3,5-Trimethylbenzene	1.3	Not Detected	6.3	Not Detected
1,2,4-Trimethylbenzene	1.3	Not Detected	6.3	Not Detected
1,3-Dichlorobenzene	1.3	Not Detected	7.7	Not Detected
1,4-Dichlorobenzene	1.3	Not Detected	7.7	Not Detected
alpha-Chlorotoluene	1.3	Not Detected	6.6	Not Detected
1,2-Dichlorobenzene	1.3	Not Detected	7.7	Not Detected
1,2,4-Trichlorobenzene	5.1	Not Detected	38	Not Detected
Hexachlorobutadiene	5.1	Not Detected	55	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	91	70-130
4-Bromofluorobenzene	109	70-130



Air Toxics

Client Sample ID: LA1-9

Lab ID#: 1705175A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051527	Date of Collection:	5/3/17 1:01:00 PM
Dil. Factor:	2.05	Date of Analysis:	5/16/17 01:23 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.0	Not Detected	5.1	Not Detected
Freon 114	1.0	Not Detected	7.2	Not Detected
Chloromethane	10	Not Detected	21	Not Detected
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
1,3-Butadiene	1.0	Not Detected	2.3	Not Detected
Bromomethane	10	Not Detected	40	Not Detected
Chloroethane	4.1	Not Detected	11	Not Detected
Freon 11	1.0	Not Detected	5.8	Not Detected
Ethanol	4.1	Not Detected	7.7	Not Detected
Freon 113	1.0	Not Detected	7.8	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Acetone	10	Not Detected	24	Not Detected
2-Propanol	4.1	Not Detected	10	Not Detected
Carbon Disulfide	4.1	Not Detected	13	Not Detected
3-Chloropropene	4.1	Not Detected	13	Not Detected
Methylene Chloride	10	Not Detected	36	Not Detected
Methyl tert-butyl ether	4.1	Not Detected	15	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Hexane	1.0	Not Detected	3.6	Not Detected
1,1-Dichloroethane	1.0	Not Detected	4.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.1	Not Detected	12	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Tetrahydrofuran	1.0	Not Detected	3.0	Not Detected
Chloroform	1.0	Not Detected	5.0	Not Detected
1,1,1-Trichloroethane	1.0	Not Detected	5.6	Not Detected
Cyclohexane	1.0	Not Detected	3.5	Not Detected
Carbon Tetrachloride	1.0	Not Detected	6.4	Not Detected
2,2,4-Trimethylpentane	1.0	Not Detected	4.8	Not Detected
Benzene	1.0	Not Detected	3.3	Not Detected
1,2-Dichloroethane	1.0	Not Detected	4.1	Not Detected
Heptane	1.0	Not Detected	4.2	Not Detected
Trichloroethene	1.0	Not Detected	5.5	Not Detected
1,2-Dichloropropane	1.0	Not Detected	4.7	Not Detected
1,4-Dioxane	4.1	Not Detected	15	Not Detected
Bromodichloromethane	1.0	Not Detected	6.9	Not Detected
cis-1,3-Dichloropropene	1.0	Not Detected	4.6	Not Detected
4-Methyl-2-pentanone	1.0	Not Detected	4.2	Not Detected
Toluene	1.0	Not Detected	3.9	Not Detected
trans-1,3-Dichloropropene	1.0	Not Detected	4.6	Not Detected
1,1,2-Trichloroethane	1.0	Not Detected	5.6	Not Detected
Tetrachloroethene	1.0	Not Detected	7.0	Not Detected
2-Hexanone	4.1	Not Detected	17	Not Detected



Air Toxics

Client Sample ID: LA1-9

Lab ID#: 1705175A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051527	Date of Collection:	5/3/17 1:01:00 PM
Dil. Factor:	2.05	Date of Analysis:	5/16/17 01:23 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.0	Not Detected	8.7	Not Detected
1,2-Dibromoethane (EDB)	1.0	Not Detected	7.9	Not Detected
Chlorobenzene	1.0	Not Detected	4.7	Not Detected
Ethyl Benzene	1.0	Not Detected	4.4	Not Detected
m,p-Xylene	1.0	Not Detected	4.4	Not Detected
o-Xylene	1.0	Not Detected	4.4	Not Detected
Styrene	1.0	Not Detected	4.4	Not Detected
Bromoform	1.0	Not Detected	10	Not Detected
Cumene	1.0	Not Detected	5.0	Not Detected
1,1,2,2-Tetrachloroethane	1.0	Not Detected	7.0	Not Detected
Propylbenzene	1.0	Not Detected	5.0	Not Detected
4-Ethyltoluene	1.0	Not Detected	5.0	Not Detected
1,3,5-Trimethylbenzene	1.0	Not Detected	5.0	Not Detected
1,2,4-Trimethylbenzene	1.0	Not Detected	5.0	Not Detected
1,3-Dichlorobenzene	1.0	Not Detected	6.2	Not Detected
1,4-Dichlorobenzene	1.0	Not Detected	6.2	Not Detected
alpha-Chlorotoluene	1.0	Not Detected	5.3	Not Detected
1,2-Dichlorobenzene	1.0	Not Detected	6.2	Not Detected
1,2,4-Trichlorobenzene	4.1	Not Detected	30	Not Detected
Hexachlorobutadiene	4.1	Not Detected	44	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	89	70-130
4-Bromofluorobenzene	110	70-130



Air Toxics

Client Sample ID: LA1-1

Lab ID#: 1705175A-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051528	Date of Collection:	5/3/17 12:34:00 PM
Dil. Factor:	2.04	Date of Analysis:	5/16/17 01:49 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.0	Not Detected	5.0	Not Detected
Freon 114	1.0	Not Detected	7.1	Not Detected
Chloromethane	10	Not Detected	21	Not Detected
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
1,3-Butadiene	1.0	Not Detected	2.2	Not Detected
Bromomethane	10	Not Detected	40	Not Detected
Chloroethane	4.1	Not Detected	11	Not Detected
Freon 11	1.0	Not Detected	5.7	Not Detected
Ethanol	4.1	4.2	7.7	7.9
Freon 113	1.0	Not Detected	7.8	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.0	Not Detected
Acetone	10	11	24	27
2-Propanol	4.1	Not Detected	10	Not Detected
Carbon Disulfide	4.1	Not Detected	13	Not Detected
3-Chloropropene	4.1	Not Detected	13	Not Detected
Methylene Chloride	10	Not Detected	35	Not Detected
Methyl tert-butyl ether	4.1	Not Detected	15	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.0	Not Detected
Hexane	1.0	Not Detected	3.6	Not Detected
1,1-Dichloroethane	1.0	Not Detected	4.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.1	Not Detected	12	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.0	Not Detected
Tetrahydrofuran	1.0	Not Detected	3.0	Not Detected
Chloroform	1.0	Not Detected	5.0	Not Detected
1,1,1-Trichloroethane	1.0	Not Detected	5.6	Not Detected
Cyclohexane	1.0	Not Detected	3.5	Not Detected
Carbon Tetrachloride	1.0	Not Detected	6.4	Not Detected
2,2,4-Trimethylpentane	1.0	Not Detected	4.8	Not Detected
Benzene	1.0	Not Detected	3.2	Not Detected
1,2-Dichloroethane	1.0	Not Detected	4.1	Not Detected
Heptane	1.0	Not Detected	4.2	Not Detected
Trichloroethene	1.0	Not Detected	5.5	Not Detected
1,2-Dichloropropane	1.0	Not Detected	4.7	Not Detected
1,4-Dioxane	4.1	Not Detected	15	Not Detected
Bromodichloromethane	1.0	Not Detected	6.8	Not Detected
cis-1,3-Dichloropropene	1.0	Not Detected	4.6	Not Detected
4-Methyl-2-pentanone	1.0	Not Detected	4.2	Not Detected
Toluene	1.0	Not Detected	3.8	Not Detected
trans-1,3-Dichloropropene	1.0	Not Detected	4.6	Not Detected
1,1,2-Trichloroethane	1.0	Not Detected	5.6	Not Detected
Tetrachloroethene	1.0	Not Detected	6.9	Not Detected
2-Hexanone	4.1	Not Detected	17	Not Detected

Client Sample ID: LA1-1

Lab ID#: 1705175A-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051528	Date of Collection:	5/3/17 12:34:00 PM
Dil. Factor:	2.04	Date of Analysis:	5/16/17 01:49 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.0	Not Detected	8.7	Not Detected
1,2-Dibromoethane (EDB)	1.0	Not Detected	7.8	Not Detected
Chlorobenzene	1.0	Not Detected	4.7	Not Detected
Ethyl Benzene	1.0	Not Detected	4.4	Not Detected
m,p-Xylene	1.0	Not Detected	4.4	Not Detected
o-Xylene	1.0	Not Detected	4.4	Not Detected
Styrene	1.0	Not Detected	4.3	Not Detected
Bromoform	1.0	Not Detected	10	Not Detected
Cumene	1.0	Not Detected	5.0	Not Detected
1,1,2,2-Tetrachloroethane	1.0	Not Detected	7.0	Not Detected
Propylbenzene	1.0	Not Detected	5.0	Not Detected
4-Ethyltoluene	1.0	Not Detected	5.0	Not Detected
1,3,5-Trimethylbenzene	1.0	Not Detected	5.0	Not Detected
1,2,4-Trimethylbenzene	1.0	Not Detected	5.0	Not Detected
1,3-Dichlorobenzene	1.0	Not Detected	6.1	Not Detected
1,4-Dichlorobenzene	1.0	Not Detected	6.1	Not Detected
alpha-Chlorotoluene	1.0	Not Detected	5.3	Not Detected
1,2-Dichlorobenzene	1.0	Not Detected	6.1	Not Detected
1,2,4-Trichlorobenzene	4.1	Not Detected	30	Not Detected
Hexachlorobutadiene	4.1	Not Detected	44	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	90	70-130
4-Bromofluorobenzene	109	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1705175A-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051506	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	5/15/17 12:51 PM

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

Client Sample ID: Lab Blank

Lab ID#: 1705175A-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051506	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/15/17 12:51 PM

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

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	90	70-130
4-Bromofluorobenzene	107	70-130

Client Sample ID: CCV

Lab ID#: 1705175A-11A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051502	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/15/17 10:34 AM

Compound	%Recovery
Freon 12	93
Freon 114	101
Chloromethane	104
Vinyl Chloride	108
1,3-Butadiene	96
Bromomethane	100
Chloroethane	88
Freon 11	93
Ethanol	85
Freon 113	99
1,1-Dichloroethene	84
Acetone	84
2-Propanol	86
Carbon Disulfide	85
3-Chloropropene	85
Methylene Chloride	91
Methyl tert-butyl ether	79
trans-1,2-Dichloroethene	88
Hexane	86
1,1-Dichloroethane	90
2-Butanone (Methyl Ethyl Ketone)	86
cis-1,2-Dichloroethene	94
Tetrahydrofuran	84
Chloroform	91
1,1,1-Trichloroethane	88
Cyclohexane	78
Carbon Tetrachloride	94
2,2,4-Trimethylpentane	85
Benzene	91
1,2-Dichloroethane	97
Heptane	89
Trichloroethene	95
1,2-Dichloropropane	94
1,4-Dioxane	96
Bromodichloromethane	93
cis-1,3-Dichloropropene	94
4-Methyl-2-pentanone	86
Toluene	90
trans-1,3-Dichloropropene	88
1,1,2-Trichloroethane	94
Tetrachloroethene	106
2-Hexanone	83

Client Sample ID: CCV

Lab ID#: 1705175A-11A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051502	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/15/17 10:34 AM

Compound	%Recovery
Dibromochloromethane	99
1,2-Dibromoethane (EDB)	97
Chlorobenzene	94
Ethyl Benzene	89
m,p-Xylene	86
o-Xylene	86
Styrene	86
Bromoform	109
Cumene	89
1,1,2,2-Tetrachloroethane	91
Propylbenzene	86
4-Ethyltoluene	96
1,3,5-Trimethylbenzene	92
1,2,4-Trimethylbenzene	93
1,3-Dichlorobenzene	100
1,4-Dichlorobenzene	101
alpha-Chlorotoluene	88
1,2-Dichlorobenzene	99
1,2,4-Trichlorobenzene	116
Hexachlorobutadiene	122

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	93	70-130
4-Bromofluorobenzene	109	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1705175A-12A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051503	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/15/17 10:58 AM

Compound	%Recovery	Method Limits
Freon 12	98	70-130
Freon 114	109	70-130
Chloromethane	106	70-130
Vinyl Chloride	117	70-130
1,3-Butadiene	98	70-130
Bromomethane	104	70-130
Chloroethane	95	70-130
Freon 11	99	70-130
Ethanol	73	70-130
Freon 113	103	70-130
1,1-Dichloroethene	88	70-130
Acetone	86	70-130
2-Propanol	90	70-130
Carbon Disulfide	92	70-130
3-Chloropropene	93	70-130
Methylene Chloride	95	70-130
Methyl tert-butyl ether	82	70-130
trans-1,2-Dichloroethene	102	70-130
Hexane	90	70-130
1,1-Dichloroethane	94	70-130
2-Butanone (Methyl Ethyl Ketone)	91	70-130
cis-1,2-Dichloroethene	90	70-130
Tetrahydrofuran	89	70-130
Chloroform	96	70-130
1,1,1-Trichloroethane	92	70-130
Cyclohexane	83	70-130
Carbon Tetrachloride	94	70-130
2,2,4-Trimethylpentane	86	70-130
Benzene	94	70-130
1,2-Dichloroethane	100	70-130
Heptane	93	70-130
Trichloroethene	98	70-130
1,2-Dichloropropane	96	70-130
1,4-Dioxane	96	70-130
Bromodichloromethane	99	70-130
cis-1,3-Dichloropropene	102	70-130
4-Methyl-2-pentanone	87	70-130
Toluene	92	70-130
trans-1,3-Dichloropropene	92	70-130
1,1,2-Trichloroethane	98	70-130
Tetrachloroethene	108	70-130
2-Hexanone	84	70-130

Client Sample ID: LCS

Lab ID#: 1705175A-12A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051503	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/15/17 10:58 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	102	70-130
1,2-Dibromoethane (EDB)	100	70-130
Chlorobenzene	96	70-130
Ethyl Benzene	90	70-130
m,p-Xylene	88	70-130
o-Xylene	87	70-130
Styrene	86	70-130
Bromoform	114	70-130
Cumene	90	70-130
1,1,2,2-Tetrachloroethane	91	70-130
Propylbenzene	88	70-130
4-Ethyltoluene	98	70-130
1,3,5-Trimethylbenzene	94	70-130
1,2,4-Trimethylbenzene	93	70-130
1,3-Dichlorobenzene	101	70-130
1,4-Dichlorobenzene	103	70-130
alpha-Chlorotoluene	91	70-130
1,2-Dichlorobenzene	99	70-130
1,2,4-Trichlorobenzene	122	70-130
Hexachlorobutadiene	127	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	109	70-130

Client Sample ID: LCSD

Lab ID#: 1705175A-12AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051504	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/15/17 11:23 AM

Compound	%Recovery	Method Limits
Freon 12	96	70-130
Freon 114	107	70-130
Chloromethane	104	70-130
Vinyl Chloride	115	70-130
1,3-Butadiene	98	70-130
Bromomethane	103	70-130
Chloroethane	94	70-130
Freon 11	97	70-130
Ethanol	71	70-130
Freon 113	103	70-130
1,1-Dichloroethene	88	70-130
Acetone	84	70-130
2-Propanol	87	70-130
Carbon Disulfide	90	70-130
3-Chloropropene	91	70-130
Methylene Chloride	91	70-130
Methyl tert-butyl ether	81	70-130
trans-1,2-Dichloroethene	100	70-130
Hexane	88	70-130
1,1-Dichloroethane	91	70-130
2-Butanone (Methyl Ethyl Ketone)	91	70-130
cis-1,2-Dichloroethene	88	70-130
Tetrahydrofuran	87	70-130
Chloroform	95	70-130
1,1,1-Trichloroethane	89	70-130
Cyclohexane	81	70-130
Carbon Tetrachloride	92	70-130
2,2,4-Trimethylpentane	85	70-130
Benzene	95	70-130
1,2-Dichloroethane	99	70-130
Heptane	93	70-130
Trichloroethene	98	70-130
1,2-Dichloropropane	97	70-130
1,4-Dioxane	96	70-130
Bromodichloromethane	99	70-130
cis-1,3-Dichloropropene	102	70-130
4-Methyl-2-pentanone	88	70-130
Toluene	92	70-130
trans-1,3-Dichloropropene	92	70-130
1,1,2-Trichloroethane	100	70-130
Tetrachloroethene	109	70-130
2-Hexanone	86	70-130

Client Sample ID: LCSD

Lab ID#: 1705175A-12AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	p051504	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/15/17 11:23 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	103	70-130
1,2-Dibromoethane (EDB)	101	70-130
Chlorobenzene	97	70-130
Ethyl Benzene	90	70-130
m,p-Xylene	90	70-130
o-Xylene	89	70-130
Styrene	88	70-130
Bromoform	115	70-130
Cumene	91	70-130
1,1,2,2-Tetrachloroethane	92	70-130
Propylbenzene	89	70-130
4-Ethyltoluene	102	70-130
1,3,5-Trimethylbenzene	95	70-130
1,2,4-Trimethylbenzene	96	70-130
1,3-Dichlorobenzene	102	70-130
1,4-Dichlorobenzene	105	70-130
alpha-Chlorotoluene	92	70-130
1,2-Dichlorobenzene	102	70-130
1,2,4-Trichlorobenzene	124	70-130
Hexachlorobutadiene	130	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	90	70-130
4-Bromofluorobenzene	111	70-130



Air Toxics

Sample Transportation Notice

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, state, federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 457-4922

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

Page 2 of 2

Project Manager: Bathyn Hartley
Collected by: (Print and Sign) Sierra Moss, Sierra Moss
Company Landau Associates Email smoss@landau.com
Address 1302nd Ave S City Edmonds State WA Zip 98020
Phone 425-778-0907 Fax 425-778-6409

Project Info: P.O. # <u>222052, 010, 013</u> Project # <u>Same</u> Project Name <u>TECT Phase II</u>	Turn Around Time: <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush <small>specify</small>	Lab Use Only Pressurizer by: Date: Pressurization Gas: <input type="checkbox"/> N ₂ <input type="checkbox"/> He
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Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum			
						Initial	Final	Receipt	Final (psi)
01A	LA1-3	1733	5/2/17	1554	TO-15 (Full list) ASTM 1944 (He)	28	2		
03A	LA1-8	1852	5/2/17	1637	"	27.5	4		
03A	LA1-10	2563 1701	5/2/17	1701	"	27	0		
04A	LA1-5	1569	5/2/17	1619	"	28.5	0		
05A	LA1-12	2512	5/2/17	1423	"	28	0		
06A	LA1-11	2534	5/2/17	1452	"	29	0		
07A	LA1-7	2329	5/3/17	1206	"	28.5	8		
08A	LA1-9	2690	5/3/17	1301	"	29.5	0		
09A	LA1-1	2574	5/3/17	1234	"	29.5	0		

Relinquished by: (signature) <u>Sierra Moss</u> Date/Time <u>5/4/17 1300</u>	Received by: (signature) <u>[Signature]</u> Date/Time <u>5/8/17 10:50</u>
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____

Notes:

Lab Use Only	Shipper Name <u>UPS</u>	Air Bill # _____	Temp. (°C) <u>N/A</u>	Condition <u>good</u>	Custody Seals Intact? <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> None	Work Order # <u>1705175</u>
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5/19/2017

Ms. Kathryn Hartley
Landau Associates, Inc.
130 2nd Avenue South

Edmonds WA 98020

Project Name: TECT Phase II

Project #: 222052.010.013

Workorder #: 1705175B

Dear Ms. Kathryn Hartley

The following report includes the data for the above referenced project for sample(s) received on 5/8/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1946 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

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

Regards,




Kelly Buettner
Project Manager

WORK ORDER #: 1705175B

Work Order Summary

CLIENT:	Ms. Kathryn Hartley Landau Associates, Inc. 130 2nd Avenue South Edmonds, WA 98020	BILL TO:	Ms. Kathryn Hartley Landau Associates, Inc. 130 2nd Avenue South Edmonds, WA 98020
PHONE:	425-329-0268	P.O. #	222052.010.013
FAX:	425-778-6409	PROJECT #	222052.010.013 TECT Phase II
DATE RECEIVED:	05/08/2017	CONTACT:	Kelly Buettner
DATE COMPLETED:	05/19/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	LA1-3	Modified ASTM D-1946	0.2 "Hg	15.1 psi
02A	LA1-8	Modified ASTM D-1946	2.4 "Hg	15 psi
03A	LA1-10	Modified ASTM D-1946	0.8 "Hg	14.8 psi
04A	LA1-5	Modified ASTM D-1946	1.2 "Hg	15.2 psi
05A	LA1-12	Modified ASTM D-1946	0.6 "Hg	15.6 psi
06A	LA1-11	Modified ASTM D-1946	0.2 "Hg	14.4 psi
07A	LA1-7	Modified ASTM D-1946	6.3 "Hg	15 psi
08A	LA1-9	Modified ASTM D-1946	0.6 "Hg	14.9 psi
09A	LA1-1	Modified ASTM D-1946	0.4 "Hg	14.9 psi
10A	Lab Blank	Modified ASTM D-1946	NA	NA
11A	LCS	Modified ASTM D-1946	NA	NA
11AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY:  DATE: 05/19/17

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.

Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

LABORATORY NARRATIVE
Modified ASTM D-1946
Landau Associates, Inc.
Workorder# 1705175B

Nine 1 Liter Summa Canister samples were received on May 08, 2017. The laboratory performed analysis via Modified ASTM Method D-1946 for Helium in air using GC/TCD. The method involves direct injection of 1.0 mL of sample.

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

<i>Requirement</i>	<i>ASTM D-1946</i>	<i>ATL Modifications</i>
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A minimum of 5-point calibration curve is performed. Quantitation is based on average Response Factor.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a $\geq 95\%$ accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections $> 5 X$'s the RL.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit.

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the detection limit.

M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

**Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946**

Client Sample ID: LA1-3

Lab ID#: 1705175B-01A

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.10	0.26

Client Sample ID: LA1-8

Lab ID#: 1705175B-02A

No Detections Were Found.

Client Sample ID: LA1-10

Lab ID#: 1705175B-03A

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.10	0.17

Client Sample ID: LA1-5

Lab ID#: 1705175B-04A

No Detections Were Found.

Client Sample ID: LA1-12

Lab ID#: 1705175B-05A

No Detections Were Found.

Client Sample ID: LA1-11

Lab ID#: 1705175B-06A

No Detections Were Found.

Client Sample ID: LA1-7

Lab ID#: 1705175B-07A

No Detections Were Found.

Client Sample ID: LA1-9

Lab ID#: 1705175B-08A

**Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946**

Client Sample ID: LA1-9

Lab ID#: 1705175B-08A

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.10	0.42

Client Sample ID: LA1-1

Lab ID#: 1705175B-09A

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.10	0.35



Air Toxics

Client Sample ID: LA1-3

Lab ID#: 1705175B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10051115c	Date of Collection:	5/2/17 3:54:00 PM
Dil. Factor:	2.04	Date of Analysis:	5/12/17 07:39 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.10	0.26

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LA1-8

Lab ID#: 1705175B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10051116c	Date of Collection:	5/2/17 4:37:00 PM
Dil. Factor:	2.20	Date of Analysis:	5/12/17 08:05 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.11	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LA1-10

Lab ID#: 1705175B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10051117c	Date of Collection:	5/2/17 5:01:00 PM
Dil. Factor:	2.06	Date of Analysis:	5/12/17 08:32 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.10	0.17

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LA1-5

Lab ID#: 1705175B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10051118c	Date of Collection:	5/2/17 3:19:00 PM
Dil. Factor:	2.12	Date of Analysis:	5/12/17 08:58 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.11	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LA1-12

Lab ID#: 1705175B-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10051119c	Date of Collection:	5/2/17 2:23:00 PM
Dil. Factor:	2.10	Date of Analysis:	5/12/17 09:22 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.10	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LA1-11

Lab ID#: 1705175B-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10051120c	Date of Collection:	5/2/17 2:52:00 PM
Dil. Factor:	1.99	Date of Analysis:	5/12/17 09:59 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.10	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LA1-7

Lab ID#: 1705175B-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10051121c	Date of Collection:	5/3/17 12:06:00 PM
Dil. Factor:	2.56	Date of Analysis:	5/12/17 10:25 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.13	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LA1-9

Lab ID#: 1705175B-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10051122c	Date of Collection:	5/3/17 1:01:00 PM
Dil. Factor:	2.06	Date of Analysis:	5/12/17 10:48 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.10	0.42

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LA1-1

Lab ID#: 1705175B-09A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10051123c	Date of Collection:	5/3/17 12:34:00 PM
Dil. Factor:	2.04	Date of Analysis:	5/12/17 11:23 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.10	0.35

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1705175B-10A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10051105c	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	5/11/17 06:10 PM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.050	Not Detected

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCS

Lab ID#: 1705175B-11A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10051102c	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/11/17 04:39 PM

Compound	%Recovery	Method Limits
Helium	100	85-115

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1705175B-11AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10051126c	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	5/12/17 01:05 PM

Compound	%Recovery	Method Limits
Helium	101	85-115

Container Type: NA - Not Applicable



Air Toxics

Sample Transportation Notice

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

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

Page 1 of 1

Project Manager Kathryn Hartley
Collected by: (Print and Sign) Sierra Mott, Sierra Mott
Company Landau Associates Email smott@landauinc.com
Address 1302nd Ave S City Edmonds State WA Zip 98020
Phone 425-778-0907 Fax 425-778-6409

Project Info: P.O. # <u>222052,010.013</u> Project # <u>Same</u> Project Name <u>TECT Phase II</u>	Turn Around Time: <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush <small>specify</small>	Lab Use Only Pressurized by: Date: Pressurization Gas: <u>N₂</u> <u>He</u>
---	--	---

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum			
						Initial	Final	Receipt	Final (psi)
01A	LA1-3	1733	5/2/17	1554	TO-15 (Full list) ASTM 1946 (He)	28	2		
02A	LA1-8	1852	5/2/17	1637	"	27.5	4		
03A	LA1-10	2563 1701	5/2/17	1701	"	27	0		
04A	LA1-5	1569	5/2/17	1519	"	28.5	0		
05A	LA1-12	2512	5/2/17	1423	"	28	0		
06A	LA1-11	2534	5/2/17	1452	"	29	0		
07A	LA1-7	2329	5/3/17	1206	"	28.5	8		
08A	LA1-9	2690	5/3/17	1301	"	24.5	0		
09A	LA1-1	2574	5/3/17	1234	"	29.5	0		

Relinquished by: (signature) <u>Sierra Mott</u> Date/Time <u>5/4/17 / 1300</u>	Received by: (signature) <u>AM/EAR</u> Date/Time <u>5/8/17 10:50</u>	Notes:
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	<u>UPS</u>		<u>N/A</u>	<u>good</u>	Yes No <u>None</u>	<u>1705175</u>

10/21/2017

Ms. Kathryn Hartley
Landau Associates, Inc.
130 2nd Avenue South

Edmonds WA 98020

Project Name: TECT Phase II

Project #: 0222052.020.021

Workorder #: 1710233A

Dear Ms. Kathryn Hartley

The following report includes the data for the above referenced project for sample(s) received on 10/11/2017 at Air Toxics Ltd.

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

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

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1710233A

Work Order Summary

CLIENT: Ms. Kathryn Hartley
Landau Associates, Inc.
130 2nd Avenue South
Edmonds, WA 98020

BILL TO: Ms. Kathryn Hartley
Landau Associates, Inc.
130 2nd Avenue South
Edmonds, WA 98020

PHONE: 425-329-0268

P.O. # 0222052.020.021

FAX: 425-778-6409

PROJECT # 0222052.020.021 TECT Phase II

DATE RECEIVED: 10/11/2017

CONTACT: Kelly Buettner

DATE COMPLETED: 10/21/2017

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	LAI-19	TO-15	4.0 "Hg	15 psi
02A	LAI-17	TO-15	3.5 "Hg	15 psi
03A	LAI-18	TO-15	3.5 "Hg	15 psi
04A	LAI-22	TO-15	2.5 "Hg	15 psi
05A	LAI-21	TO-15	3.5 "Hg	15 psi
06A	LAI-16	TO-15	3.0 "Hg	15 psi
07A	LAI-15	TO-15	4.0 "Hg	15 psi
08A	LAI-14	TO-15	5.0 "Hg	15 psi
09A	LAI-13	TO-15	5.0 "Hg	15 psi
10A	LAI-20	TO-15	4.5 "Hg	15 psi
11A	LAI-23	TO-15	4.5 "Hg	15 psi
12A	LAI-26	TO-15	4.5 "Hg	15 psi
13A	LAI-25	TO-15	4.0 "Hg	15 psi
14A	LAI-28	TO-15	4.5 "Hg	15 psi
15A	LAI-24	TO-15	3.5 "Hg	15 psi
16A	LAI-27	TO-15	2.8 "Hg	15 psi
17A	Lab Blank	TO-15	NA	NA
17B	Lab Blank	TO-15	NA	NA
18A	CCV	TO-15	NA	NA
18B	CCV	TO-15	NA	NA
19A	LCS	TO-15	NA	NA
19AA	LCS	TO-15	NA	NA
19B	LCS	TO-15	NA	NA

Continued on next page

WORK ORDER #: 1710233A

Work Order Summary

CLIENT:	Ms. Kathryn Hartley Landau Associates, Inc. 130 2nd Avenue South Edmonds, WA 98020	BILL TO:	Ms. Kathryn Hartley Landau Associates, Inc. 130 2nd Avenue South Edmonds, WA 98020
PHONE:	425-329-0268	P.O. #	0222052.020.021
FAX:	425-778-6409	PROJECT #	0222052.020.021 TECT Phase II
DATE RECEIVED:	10/11/2017	CONTACT:	Kelly Buettner
DATE COMPLETED:	10/21/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
19BB	LCSD	TO-15	NA	NA

CERTIFIED BY: 
 Technical Director

DATE: 10/21/17

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
 TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
 Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.

Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

**LABORATORY NARRATIVE
EPA Method TO-15
Landau Associates, Inc.
Workorder# 1710233A**

Sixteen 1 Liter Summa Canister samples were received on October 11, 2017. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

The Chain of Custody (COC) information for sample LAI-16 did not match the information on the canister with regard to canister identification. The client was notified of the discrepancy and the information on the canister was used to process and report the sample.

Analytical Notes

Dilution was performed on samples LAI-17, LAI-18, LAI-22, LAI-21, LAI-13, LAI-23, LAI-26 and LAI-25 due to the presence of high level target species.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page. Target compound non-detects in the samples that are associated with high bias in QC analyses have not been flagged.

Acetone exceeded the instrument's calibration range for samples LAI-22 and LAI-20 and were flagged accordingly.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

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

N - The identification is based on presumptive evidence.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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

Client Sample ID: LAI-19

Lab ID#: 1710233A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	4.7	230	8.8	430
Acetone	12	70	28	170
2-Propanol	4.7	13	11	33
Hexane	1.2	3.0	4.1	11
2-Butanone (Methyl Ethyl Ketone)	4.7	41	14	120
Tetrahydrofuran	1.2	4.5	3.4	13
Chloroform	1.2	5.2	5.7	25
Benzene	1.2	1.8	3.7	5.9
Trichloroethene	1.2	5.4	6.3	29
4-Methyl-2-pentanone	1.2	2.2	4.8	9.2
Toluene	1.2	6.6	4.4	25
Ethyl Benzene	1.2	1.5	5.0	6.6
m,p-Xylene	1.2	5.8	5.0	25
o-Xylene	1.2	2.2	5.0	9.6
4-Ethyltoluene	1.2	4.3	5.7	21
1,3,5-Trimethylbenzene	1.2	1.7	5.7	8.2
1,2,4-Trimethylbenzene	1.2	6.1	5.7	30

Client Sample ID: LAI-17

Lab ID#: 1710233A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	30	380	57	710
cis-1,2-Dichloroethene	7.6	77	30	300
Trichloroethene	7.6	2300	41	12000

Client Sample ID: LAI-18

Lab ID#: 1710233A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	30	940	57	1800
2-Propanol	30	51	75	120
trans-1,2-Dichloroethene	7.6	13	30	51

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

Client Sample ID: LAI-18

Lab ID#: 1710233A-03A

cis-1,2-Dichloroethene	7.6	410	30	1600
Trichloroethene	7.6	2900	41	16000

Client Sample ID: LAI-22

Lab ID#: 1710233A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	8.8	420	17	790
Acetone	22	950 E	52	2300 E
2-Propanol	8.8	26	22	63
Hexane	2.2	5.9	7.8	21
2-Butanone (Methyl Ethyl Ketone)	8.8	12	26	36
Chloroform	2.2	2.3	11	11
Heptane	2.2	3.2	9.0	13
Trichloroethene	2.2	5.4	12	29
Toluene	2.2	3.5	8.3	13
Tetrachloroethene	2.2	6.2	15	42
m,p-Xylene	2.2	2.8	9.6	12
4-Ethyltoluene	2.2	7.6	11	38
1,3,5-Trimethylbenzene	2.2	3.9	11	19
1,2,4-Trimethylbenzene	2.2	15	11	72

Client Sample ID: LAI-21

Lab ID#: 1710233A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	9.1	160	17	290
Acetone	23	360	54	850
2-Propanol	9.1	11	22	26
Hexane	2.3	11	8.0	38
2-Butanone (Methyl Ethyl Ketone)	9.1	18	27	52
Tetrahydrofuran	2.3	2.7	6.7	8.1
Cyclohexane	2.3	3.7	7.9	12
Benzene	2.3	3.0	7.3	9.6

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

Client Sample ID: LAI-21

Lab ID#: 1710233A-05A

Heptane	2.3	9.1	9.4	37
Trichloroethene	2.3	76	12	410
Toluene	2.3	5.0	8.6	19
m,p-Xylene	2.3	3.9	9.9	17
4-Ethyltoluene	2.3	7.5	11	37
1,3,5-Trimethylbenzene	2.3	3.5	11	17
1,2,4-Trimethylbenzene	2.3	10	11	52

Client Sample ID: LAI-16

Lab ID#: 1710233A-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	1.1	31	2.5	70
Ethanol	4.5	190	8.4	360
Acetone	11	310	27	730
2-Propanol	4.5	74	11	180
Carbon Disulfide	4.5	54	14	170
Hexane	1.1	26	3.9	92
2-Butanone (Methyl Ethyl Ketone)	4.5	180	13	520
Tetrahydrofuran	1.1	5.9	3.3	17
Chloroform	1.1	6.9	5.5	34
Cyclohexane	1.1	9.9	3.8	34
Benzene	1.1	23	3.6	73
Heptane	1.1	15	4.6	62
Trichloroethene	1.1	7.7	6.0	41
4-Methyl-2-pentanone	1.1	220	4.6	880
Toluene	1.1	16	4.2	60
Tetrachloroethene	1.1	5.2	7.6	36
2-Hexanone	4.5	17	18	70
Ethyl Benzene	1.1	1.4	4.9	5.9
m,p-Xylene	1.1	3.6	4.9	16
o-Xylene	1.1	1.2	4.9	5.4
4-Ethyltoluene	1.1	1.2	5.5	5.7
1,2,4-Trimethylbenzene	1.1	1.1	5.5	5.6

Summary of Detected Compounds

EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: LAI-15

Lab ID#: 1710233A-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	4.7	250	8.8	480
Acetone	12	61	28	140
2-Propanol	4.7	17	11	41
Hexane	1.2	4.7	4.1	16
2-Butanone (Methyl Ethyl Ketone)	4.7	24	14	71
Tetrahydrofuran	1.2	4.4	3.4	13
Chloroform	1.2	4.6	5.7	23
Cyclohexane	1.2	2.6	4.0	8.8
Benzene	1.2	3.5	3.7	11
Heptane	1.2	2.5	4.8	10
Trichloroethene	1.2	1.7	6.3	9.0
4-Methyl-2-pentanone	1.2	1.3	4.8	5.5
Toluene	1.2	4.2	4.4	16
Tetrachloroethene	1.2	2.6	7.9	18
m,p-Xylene	1.2	2.2	5.0	9.4
4-Ethyltoluene	1.2	1.2	5.7	5.8
1,2,4-Trimethylbenzene	1.2	1.4	5.7	7.0

Client Sample ID: LAI-14

Lab ID#: 1710233A-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	1.2	1.5	2.7	3.2
Ethanol	4.8	180	9.1	340
Acetone	12	85	29	200
2-Propanol	4.8	25	12	62
Hexane	1.2	4.3	4.3	15
2-Butanone (Methyl Ethyl Ketone)	4.8	38	14	110
Tetrahydrofuran	1.2	5.3	3.6	16
Chloroform	1.2	3.2	5.9	16
Cyclohexane	1.2	3.4	4.2	12
Carbon Tetrachloride	1.2	1.2	7.6	7.8
Benzene	1.2	2.2	3.9	7.0

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

Client Sample ID: LAI-14

Lab ID#: 1710233A-08A

Heptane	1.2	3.3	5.0	13
Trichloroethene	1.2	220	6.5	1200
4-Methyl-2-pentanone	1.2	6.7	5.0	28
Toluene	1.2	4.8	4.6	18
m,p-Xylene	1.2	4.8	5.2	21
o-Xylene	1.2	1.8	5.2	8.0
4-Ethyltoluene	1.2	4.6	5.9	22
1,3,5-Trimethylbenzene	1.2	2.1	5.9	10
1,2,4-Trimethylbenzene	1.2	6.6	5.9	33

Client Sample ID: LAI-13

Lab ID#: 1710233A-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	48	110	91	200
cis-1,2-Dichloroethene	12	15	48	59
Trichloroethene	12	2900	65	15000

Client Sample ID: LAI-20

Lab ID#: 1710233A-10A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	4.8	160	9.0	300
Acetone	12	1500 E	28	3500 E
2-Propanol	4.8	13	12	32
trans-1,2-Dichloroethene	1.2	1.4	4.7	5.8
Hexane	1.2	6.5	4.2	23
2-Butanone (Methyl Ethyl Ketone)	4.8	21	14	62
cis-1,2-Dichloroethene	1.2	31	4.7	120
Tetrahydrofuran	1.2	2.6	3.5	7.6
Chloroform	1.2	3.4	5.8	17
Cyclohexane	1.2	1.5	4.1	5.1
2,2,4-Trimethylpentane	1.2	3.3	5.6	15
Benzene	1.2	2.4	3.8	7.7

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

Client Sample ID: LAI-20

Lab ID#: 1710233A-10A

Trichloroethene	1.2	240	6.4	1300
4-Methyl-2-pentanone	1.2	2.2	4.9	9.0
Toluene	1.2	6.2	4.5	23
Tetrachloroethene	1.2	1.2	8.1	8.2
Ethyl Benzene	1.2	1.6	5.2	7.2
m,p-Xylene	1.2	6.7	5.2	29
o-Xylene	1.2	2.5	5.2	11
4-Ethyltoluene	1.2	5.2	5.8	25
1,3,5-Trimethylbenzene	1.2	1.7	5.8	8.4
1,2,4-Trimethylbenzene	1.2	6.0	5.8	30

Client Sample ID: LAI-23

Lab ID#: 1710233A-11A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	4.8	1600	12	4200
1,3-Butadiene	4.8	14	10	31
Ethanol	19	280	36	530
Acetone	48	65	110	150
Hexane	4.8	70	17	250
1,1-Dichloroethane	4.8	16	19	64
cis-1,2-Dichloroethene	4.8	21	19	85
Cyclohexane	4.8	57	16	200
Benzene	4.8	14	15	46
Heptane	4.8	28	19	110
Trichloroethene	4.8	5.6	26	30
Toluene	4.8	4.8	18	18

Client Sample ID: LAI-26

Lab ID#: 1710233A-12A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	12	12	30	31
1,3-Butadiene	12	23	26	51

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

Client Sample ID: LAI-26

Lab ID#: 1710233A-12A

Ethanol	48	260 J0	90	480 J0
1,1-Dichloroethene	12	120	47	480
trans-1,2-Dichloroethene	12	35	47	140
Hexane	12	31	42	110
cis-1,2-Dichloroethene	12	3300	47	13000
Cyclohexane	12	15	41	52
2,2,4-Trimethylpentane	12	12	56	57
Trichloroethene	12	14000	64	74000
Tetrachloroethene	12	19	81	130

Client Sample ID: LAI-25

Lab ID#: 1710233A-13A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	16	32	34	71
Ethanol	62	700	120	1300
1,1-Dichloroethene	16	33	62	130
trans-1,2-Dichloroethene	16	44	62	170
cis-1,2-Dichloroethene	16	390	62	1500
Trichloroethene	16	5300	84	29000

Client Sample ID: LAI-28

Lab ID#: 1710233A-14A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.2	27	3.0	69
1,3-Butadiene	1.2	2.7	2.6	6.1
Ethanol	4.8	280	9.0	530
Acetone	12	230	28	540
2-Propanol	4.8	18	12	43
Carbon Disulfide	4.8	17	15	53
Hexane	1.2	47	4.2	160
2-Butanone (Methyl Ethyl Ketone)	4.8	50	14	150
cis-1,2-Dichloroethene	1.2	2.3	4.7	9.3

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

Client Sample ID: LAI-28

Lab ID#: 1710233A-14A

Chloroform	1.2	1.5	5.8	7.2
Cyclohexane	1.2	36	4.1	120
2,2,4-Trimethylpentane	1.2	6.2	5.6	29
Benzene	1.2	3.8	3.8	12
Heptane	1.2	20	4.9	80
4-Methyl-2-pentanone	1.2	1.7	4.9	6.8
Toluene	1.2	9.2	4.5	35
m,p-Xylene	1.2	1.8	5.2	7.7

Client Sample ID: LAI-24

Lab ID#: 1710233A-15A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	10	150	20	290
Hexane	2.6	3.3	9.2	12
Chloroform	2.6	13	13	64
Cyclohexane	2.6	4.5	9.0	15
4-Methyl-2-pentanone	2.6	4.2	11	17
Toluene	2.6	7.0	9.9	26
m,p-Xylene	2.6	3.5	11	15

Client Sample ID: LAI-27

Lab ID#: 1710233A-16A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	23	2.8	59
1,3-Butadiene	1.1	12	2.5	28
Ethanol	4.5	330	8.4	630
Acetone	11	40	26	94
2-Propanol	4.5	38	11	92
Hexane	1.1	21	3.9	73
2-Butanone (Methyl Ethyl Ketone)	4.5	9.8	13	29
cis-1,2-Dichloroethene	1.1	42	4.4	170
Cyclohexane	1.1	17	3.8	59

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

Client Sample ID: LAI-27

Lab ID#: 1710233A-16A

2,2,4-Trimethylpentane	1.1	2.1	5.2	9.8
Benzene	1.1	5.5	3.6	17
Heptane	1.1	14	4.6	60
Trichloroethene	1.1	6.4	6.0	34
4-Methyl-2-pentanone	1.1	2.8	4.6	11
Toluene	1.1	45	4.2	170
Ethyl Benzene	1.1	3.8	4.8	16
m,p-Xylene	1.1	13	4.8	58
o-Xylene	1.1	3.8	4.8	16
4-Ethyltoluene	1.1	2.2	5.5	11
1,2,4-Trimethylbenzene	1.1	2.1	5.5	10



Air Toxics

Client Sample ID: LAI-19

Lab ID#: 1710233A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101610	Date of Collection:	10/4/17 2:24:00 PM
Dil. Factor:	2.33	Date of Analysis:	10/16/17 04:37 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	5.8	Not Detected
Freon 114	1.2	Not Detected	8.1	Not Detected
Chloromethane	12	Not Detected	24	Not Detected
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
1,3-Butadiene	1.2	Not Detected	2.6	Not Detected
Bromomethane	12	Not Detected	45	Not Detected
Chloroethane	4.7	Not Detected	12	Not Detected
Freon 11	1.2	Not Detected	6.5	Not Detected
Ethanol	4.7	230	8.8	430
Freon 113	1.2	Not Detected	8.9	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Acetone	12	70	28	170
2-Propanol	4.7	13	11	33
Carbon Disulfide	4.7	Not Detected	14	Not Detected
3-Chloropropene	4.7	Not Detected	14	Not Detected
Methylene Chloride	12	Not Detected	40	Not Detected
Methyl tert-butyl ether	4.7	Not Detected	17	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Hexane	1.2	3.0	4.1	11
1,1-Dichloroethane	1.2	Not Detected	4.7	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.7	41	14	120
cis-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Tetrahydrofuran	1.2	4.5	3.4	13
Chloroform	1.2	5.2	5.7	25
1,1,1-Trichloroethane	1.2	Not Detected	6.4	Not Detected
Cyclohexane	1.2	Not Detected	4.0	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.3	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.4	Not Detected
Benzene	1.2	1.8	3.7	5.9
1,2-Dichloroethane	1.2	Not Detected	4.7	Not Detected
Heptane	1.2	Not Detected	4.8	Not Detected
Trichloroethene	1.2	5.4	6.3	29
1,2-Dichloropropane	1.2	Not Detected	5.4	Not Detected
1,4-Dioxane	4.7	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	7.8	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.3	Not Detected
4-Methyl-2-pentanone	1.2	2.2	4.8	9.2
Toluene	1.2	6.6	4.4	25
trans-1,3-Dichloropropene	1.2	Not Detected	5.3	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.4	Not Detected
Tetrachloroethene	1.2	Not Detected	7.9	Not Detected
2-Hexanone	4.7	Not Detected	19	Not Detected

Client Sample ID: LAI-19

Lab ID#: 1710233A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101610	Date of Collection:	10/4/17 2:24:00 PM
Dil. Factor:	2.33	Date of Analysis:	10/16/17 04:37 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	9.9	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.0	Not Detected
Chlorobenzene	1.2	Not Detected	5.4	Not Detected
Ethyl Benzene	1.2	1.5	5.0	6.6
m,p-Xylene	1.2	5.8	5.0	25
o-Xylene	1.2	2.2	5.0	9.6
Styrene	1.2	Not Detected	5.0	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.7	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.0	Not Detected
Propylbenzene	1.2	Not Detected	5.7	Not Detected
4-Ethyltoluene	1.2	4.3	5.7	21
1,3,5-Trimethylbenzene	1.2	1.7	5.7	8.2
1,2,4-Trimethylbenzene	1.2	6.1	5.7	30
1,3-Dichlorobenzene	1.2	Not Detected	7.0	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.0	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.0	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.0	Not Detected
1,2,4-Trichlorobenzene	4.7	Not Detected	34	Not Detected
Hexachlorobutadiene	4.7	Not Detected	50	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130
1,2-Dichloroethane-d4	119	70-130
4-Bromofluorobenzene	90	70-130



Air Toxics

Client Sample ID: LAI-17

Lab ID#: 1710233A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101611	Date of Collection:	10/4/17 2:55:00 PM
Dil. Factor:	15.2	Date of Analysis:	10/16/17 05:02 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	7.6	Not Detected	38	Not Detected
Freon 114	7.6	Not Detected	53	Not Detected
Chloromethane	76	Not Detected	160	Not Detected
Vinyl Chloride	7.6	Not Detected	19	Not Detected
1,3-Butadiene	7.6	Not Detected	17	Not Detected
Bromomethane	76	Not Detected	300	Not Detected
Chloroethane	30	Not Detected	80	Not Detected
Freon 11	7.6	Not Detected	43	Not Detected
Ethanol	30	380	57	710
Freon 113	7.6	Not Detected	58	Not Detected
1,1-Dichloroethene	7.6	Not Detected	30	Not Detected
Acetone	76	Not Detected	180	Not Detected
2-Propanol	30	Not Detected	75	Not Detected
Carbon Disulfide	30	Not Detected	95	Not Detected
3-Chloropropene	30	Not Detected	95	Not Detected
Methylene Chloride	76	Not Detected	260	Not Detected
Methyl tert-butyl ether	30	Not Detected	110	Not Detected
trans-1,2-Dichloroethene	7.6	Not Detected	30	Not Detected
Hexane	7.6	Not Detected	27	Not Detected
1,1-Dichloroethane	7.6	Not Detected	31	Not Detected
2-Butanone (Methyl Ethyl Ketone)	30	Not Detected	90	Not Detected
cis-1,2-Dichloroethene	7.6	77	30	300
Tetrahydrofuran	7.6	Not Detected	22	Not Detected
Chloroform	7.6	Not Detected	37	Not Detected
1,1,1-Trichloroethane	7.6	Not Detected	41	Not Detected
Cyclohexane	7.6	Not Detected	26	Not Detected
Carbon Tetrachloride	7.6	Not Detected	48	Not Detected
2,2,4-Trimethylpentane	7.6	Not Detected	36	Not Detected
Benzene	7.6	Not Detected	24	Not Detected
1,2-Dichloroethane	7.6	Not Detected	31	Not Detected
Heptane	7.6	Not Detected	31	Not Detected
Trichloroethene	7.6	2300	41	12000
1,2-Dichloropropane	7.6	Not Detected	35	Not Detected
1,4-Dioxane	30	Not Detected	110	Not Detected
Bromodichloromethane	7.6	Not Detected	51	Not Detected
cis-1,3-Dichloropropene	7.6	Not Detected	34	Not Detected
4-Methyl-2-pentanone	7.6	Not Detected	31	Not Detected
Toluene	7.6	Not Detected	29	Not Detected
trans-1,3-Dichloropropene	7.6	Not Detected	34	Not Detected
1,1,2-Trichloroethane	7.6	Not Detected	41	Not Detected
Tetrachloroethene	7.6	Not Detected	52	Not Detected
2-Hexanone	30	Not Detected	120	Not Detected



Air Toxics

Client Sample ID: LAI-17

Lab ID#: 1710233A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101611	Date of Collection:	10/4/17 2:55:00 PM
Dil. Factor:	15.2	Date of Analysis:	10/16/17 05:02 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	7.6	Not Detected	65	Not Detected
1,2-Dibromoethane (EDB)	7.6	Not Detected	58	Not Detected
Chlorobenzene	7.6	Not Detected	35	Not Detected
Ethyl Benzene	7.6	Not Detected	33	Not Detected
m,p-Xylene	7.6	Not Detected	33	Not Detected
o-Xylene	7.6	Not Detected	33	Not Detected
Styrene	7.6	Not Detected	32	Not Detected
Bromoform	7.6	Not Detected	78	Not Detected
Cumene	7.6	Not Detected	37	Not Detected
1,1,2,2-Tetrachloroethane	7.6	Not Detected	52	Not Detected
Propylbenzene	7.6	Not Detected	37	Not Detected
4-Ethyltoluene	7.6	Not Detected	37	Not Detected
1,3,5-Trimethylbenzene	7.6	Not Detected	37	Not Detected
1,2,4-Trimethylbenzene	7.6	Not Detected	37	Not Detected
1,3-Dichlorobenzene	7.6	Not Detected	46	Not Detected
1,4-Dichlorobenzene	7.6	Not Detected	46	Not Detected
alpha-Chlorotoluene	7.6	Not Detected	39	Not Detected
1,2-Dichlorobenzene	7.6	Not Detected	46	Not Detected
1,2,4-Trichlorobenzene	30	Not Detected	220	Not Detected
Hexachlorobutadiene	30	Not Detected	320	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130
1,2-Dichloroethane-d4	112	70-130
4-Bromofluorobenzene	88	70-130



Air Toxics

Client Sample ID: LAI-18

Lab ID#: 1710233A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101612	Date of Collection:	10/4/17 3:26:00 PM
Dil. Factor:	15.2	Date of Analysis:	10/16/17 05:28 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	7.6	Not Detected	38	Not Detected
Freon 114	7.6	Not Detected	53	Not Detected
Chloromethane	76	Not Detected	160	Not Detected
Vinyl Chloride	7.6	Not Detected	19	Not Detected
1,3-Butadiene	7.6	Not Detected	17	Not Detected
Bromomethane	76	Not Detected	300	Not Detected
Chloroethane	30	Not Detected	80	Not Detected
Freon 11	7.6	Not Detected	43	Not Detected
Ethanol	30	940	57	1800
Freon 113	7.6	Not Detected	58	Not Detected
1,1-Dichloroethene	7.6	Not Detected	30	Not Detected
Acetone	76	Not Detected	180	Not Detected
2-Propanol	30	51	75	120
Carbon Disulfide	30	Not Detected	95	Not Detected
3-Chloropropene	30	Not Detected	95	Not Detected
Methylene Chloride	76	Not Detected	260	Not Detected
Methyl tert-butyl ether	30	Not Detected	110	Not Detected
trans-1,2-Dichloroethene	7.6	13	30	51
Hexane	7.6	Not Detected	27	Not Detected
1,1-Dichloroethane	7.6	Not Detected	31	Not Detected
2-Butanone (Methyl Ethyl Ketone)	30	Not Detected	90	Not Detected
cis-1,2-Dichloroethene	7.6	410	30	1600
Tetrahydrofuran	7.6	Not Detected	22	Not Detected
Chloroform	7.6	Not Detected	37	Not Detected
1,1,1-Trichloroethane	7.6	Not Detected	41	Not Detected
Cyclohexane	7.6	Not Detected	26	Not Detected
Carbon Tetrachloride	7.6	Not Detected	48	Not Detected
2,2,4-Trimethylpentane	7.6	Not Detected	36	Not Detected
Benzene	7.6	Not Detected	24	Not Detected
1,2-Dichloroethane	7.6	Not Detected	31	Not Detected
Heptane	7.6	Not Detected	31	Not Detected
Trichloroethene	7.6	2900	41	16000
1,2-Dichloropropane	7.6	Not Detected	35	Not Detected
1,4-Dioxane	30	Not Detected	110	Not Detected
Bromodichloromethane	7.6	Not Detected	51	Not Detected
cis-1,3-Dichloropropene	7.6	Not Detected	34	Not Detected
4-Methyl-2-pentanone	7.6	Not Detected	31	Not Detected
Toluene	7.6	Not Detected	29	Not Detected
trans-1,3-Dichloropropene	7.6	Not Detected	34	Not Detected
1,1,2-Trichloroethane	7.6	Not Detected	41	Not Detected
Tetrachloroethene	7.6	Not Detected	52	Not Detected
2-Hexanone	30	Not Detected	120	Not Detected

Client Sample ID: LAI-18

Lab ID#: 1710233A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101612	Date of Collection:	10/4/17 3:26:00 PM
Dil. Factor:	15.2	Date of Analysis:	10/16/17 05:28 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	7.6	Not Detected	65	Not Detected
1,2-Dibromoethane (EDB)	7.6	Not Detected	58	Not Detected
Chlorobenzene	7.6	Not Detected	35	Not Detected
Ethyl Benzene	7.6	Not Detected	33	Not Detected
m,p-Xylene	7.6	Not Detected	33	Not Detected
o-Xylene	7.6	Not Detected	33	Not Detected
Styrene	7.6	Not Detected	32	Not Detected
Bromoform	7.6	Not Detected	78	Not Detected
Cumene	7.6	Not Detected	37	Not Detected
1,1,2,2-Tetrachloroethane	7.6	Not Detected	52	Not Detected
Propylbenzene	7.6	Not Detected	37	Not Detected
4-Ethyltoluene	7.6	Not Detected	37	Not Detected
1,3,5-Trimethylbenzene	7.6	Not Detected	37	Not Detected
1,2,4-Trimethylbenzene	7.6	Not Detected	37	Not Detected
1,3-Dichlorobenzene	7.6	Not Detected	46	Not Detected
1,4-Dichlorobenzene	7.6	Not Detected	46	Not Detected
alpha-Chlorotoluene	7.6	Not Detected	39	Not Detected
1,2-Dichlorobenzene	7.6	Not Detected	46	Not Detected
1,2,4-Trichlorobenzene	30	Not Detected	220	Not Detected
Hexachlorobutadiene	30	Not Detected	320	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130
1,2-Dichloroethane-d4	117	70-130
4-Bromofluorobenzene	88	70-130



Air Toxics

Client Sample ID: LAI-22

Lab ID#: 1710233A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101613	Date of Collection:	10/4/17 3:47:00 PM
Dil. Factor:	4.41	Date of Analysis:	10/16/17 05:54 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	2.2	Not Detected	11	Not Detected
Freon 114	2.2	Not Detected	15	Not Detected
Chloromethane	22	Not Detected	46	Not Detected
Vinyl Chloride	2.2	Not Detected	5.6	Not Detected
1,3-Butadiene	2.2	Not Detected	4.9	Not Detected
Bromomethane	22	Not Detected	86	Not Detected
Chloroethane	8.8	Not Detected	23	Not Detected
Freon 11	2.2	Not Detected	12	Not Detected
Ethanol	8.8	420	17	790
Freon 113	2.2	Not Detected	17	Not Detected
1,1-Dichloroethene	2.2	Not Detected	8.7	Not Detected
Acetone	22	950 E	52	2300 E
2-Propanol	8.8	26	22	63
Carbon Disulfide	8.8	Not Detected	27	Not Detected
3-Chloropropene	8.8	Not Detected	28	Not Detected
Methylene Chloride	22	Not Detected	77	Not Detected
Methyl tert-butyl ether	8.8	Not Detected	32	Not Detected
trans-1,2-Dichloroethene	2.2	Not Detected	8.7	Not Detected
Hexane	2.2	5.9	7.8	21
1,1-Dichloroethane	2.2	Not Detected	8.9	Not Detected
2-Butanone (Methyl Ethyl Ketone)	8.8	12	26	36
cis-1,2-Dichloroethene	2.2	Not Detected	8.7	Not Detected
Tetrahydrofuran	2.2	Not Detected	6.5	Not Detected
Chloroform	2.2	2.3	11	11
1,1,1-Trichloroethane	2.2	Not Detected	12	Not Detected
Cyclohexane	2.2	Not Detected	7.6	Not Detected
Carbon Tetrachloride	2.2	Not Detected	14	Not Detected
2,2,4-Trimethylpentane	2.2	Not Detected	10	Not Detected
Benzene	2.2	Not Detected	7.0	Not Detected
1,2-Dichloroethane	2.2	Not Detected	8.9	Not Detected
Heptane	2.2	3.2	9.0	13
Trichloroethene	2.2	5.4	12	29
1,2-Dichloropropane	2.2	Not Detected	10	Not Detected
1,4-Dioxane	8.8	Not Detected	32	Not Detected
Bromodichloromethane	2.2	Not Detected	15	Not Detected
cis-1,3-Dichloropropene	2.2	Not Detected	10	Not Detected
4-Methyl-2-pentanone	2.2	Not Detected	9.0	Not Detected
Toluene	2.2	3.5	8.3	13
trans-1,3-Dichloropropene	2.2	Not Detected	10	Not Detected
1,1,2-Trichloroethane	2.2	Not Detected	12	Not Detected
Tetrachloroethene	2.2	6.2	15	42
2-Hexanone	8.8	Not Detected	36	Not Detected

Client Sample ID: LAI-22

Lab ID#: 1710233A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101613	Date of Collection:	10/4/17 3:47:00 PM
Dil. Factor:	4.41	Date of Analysis:	10/16/17 05:54 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	2.2	Not Detected	19	Not Detected
1,2-Dibromoethane (EDB)	2.2	Not Detected	17	Not Detected
Chlorobenzene	2.2	Not Detected	10	Not Detected
Ethyl Benzene	2.2	Not Detected	9.6	Not Detected
m,p-Xylene	2.2	2.8	9.6	12
o-Xylene	2.2	Not Detected	9.6	Not Detected
Styrene	2.2	Not Detected	9.4	Not Detected
Bromoform	2.2	Not Detected	23	Not Detected
Cumene	2.2	Not Detected	11	Not Detected
1,1,2,2-Tetrachloroethane	2.2	Not Detected	15	Not Detected
Propylbenzene	2.2	Not Detected	11	Not Detected
4-Ethyltoluene	2.2	7.6	11	38
1,3,5-Trimethylbenzene	2.2	3.9	11	19
1,2,4-Trimethylbenzene	2.2	15	11	72
1,3-Dichlorobenzene	2.2	Not Detected	13	Not Detected
1,4-Dichlorobenzene	2.2	Not Detected	13	Not Detected
alpha-Chlorotoluene	2.2	Not Detected	11	Not Detected
1,2-Dichlorobenzene	2.2	Not Detected	13	Not Detected
1,2,4-Trichlorobenzene	8.8	Not Detected	65	Not Detected
Hexachlorobutadiene	8.8	Not Detected	94	Not Detected

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	112	70-130
1,2-Dichloroethane-d4	118	70-130
4-Bromofluorobenzene	91	70-130



Air Toxics

Client Sample ID: LAI-21

Lab ID#: 1710233A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101614	Date of Collection:	10/4/17 4:12:00 PM
Dil. Factor:	4.57	Date of Analysis:	10/16/17 06:21 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	2.3	Not Detected	11	Not Detected
Freon 114	2.3	Not Detected	16	Not Detected
Chloromethane	23	Not Detected	47	Not Detected
Vinyl Chloride	2.3	Not Detected	5.8	Not Detected
1,3-Butadiene	2.3	Not Detected	5.0	Not Detected
Bromomethane	23	Not Detected	89	Not Detected
Chloroethane	9.1	Not Detected	24	Not Detected
Freon 11	2.3	Not Detected	13	Not Detected
Ethanol	9.1	160	17	290
Freon 113	2.3	Not Detected	18	Not Detected
1,1-Dichloroethene	2.3	Not Detected	9.1	Not Detected
Acetone	23	360	54	850
2-Propanol	9.1	11	22	26
Carbon Disulfide	9.1	Not Detected	28	Not Detected
3-Chloropropene	9.1	Not Detected	29	Not Detected
Methylene Chloride	23	Not Detected	79	Not Detected
Methyl tert-butyl ether	9.1	Not Detected	33	Not Detected
trans-1,2-Dichloroethene	2.3	Not Detected	9.0	Not Detected
Hexane	2.3	11	8.0	38
1,1-Dichloroethane	2.3	Not Detected	9.2	Not Detected
2-Butanone (Methyl Ethyl Ketone)	9.1	18	27	52
cis-1,2-Dichloroethene	2.3	Not Detected	9.0	Not Detected
Tetrahydrofuran	2.3	2.7	6.7	8.1
Chloroform	2.3	Not Detected	11	Not Detected
1,1,1-Trichloroethane	2.3	Not Detected	12	Not Detected
Cyclohexane	2.3	3.7	7.9	12
Carbon Tetrachloride	2.3	Not Detected	14	Not Detected
2,2,4-Trimethylpentane	2.3	Not Detected	11	Not Detected
Benzene	2.3	3.0	7.3	9.6
1,2-Dichloroethane	2.3	Not Detected	9.2	Not Detected
Heptane	2.3	9.1	9.4	37
Trichloroethene	2.3	76	12	410
1,2-Dichloropropane	2.3	Not Detected	10	Not Detected
1,4-Dioxane	9.1	Not Detected	33	Not Detected
Bromodichloromethane	2.3	Not Detected	15	Not Detected
cis-1,3-Dichloropropene	2.3	Not Detected	10	Not Detected
4-Methyl-2-pentanone	2.3	Not Detected	9.4	Not Detected
Toluene	2.3	5.0	8.6	19
trans-1,3-Dichloropropene	2.3	Not Detected	10	Not Detected
1,1,2-Trichloroethane	2.3	Not Detected	12	Not Detected
Tetrachloroethene	2.3	Not Detected	15	Not Detected
2-Hexanone	9.1	Not Detected	37	Not Detected

Client Sample ID: LAI-21

Lab ID#: 1710233A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101614	Date of Collection:	10/4/17 4:12:00 PM
Dil. Factor:	4.57	Date of Analysis:	10/16/17 06:21 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	2.3	Not Detected	19	Not Detected
1,2-Dibromoethane (EDB)	2.3	Not Detected	18	Not Detected
Chlorobenzene	2.3	Not Detected	10	Not Detected
Ethyl Benzene	2.3	Not Detected	9.9	Not Detected
m,p-Xylene	2.3	3.9	9.9	17
o-Xylene	2.3	Not Detected	9.9	Not Detected
Styrene	2.3	Not Detected	9.7	Not Detected
Bromoform	2.3	Not Detected	24	Not Detected
Cumene	2.3	Not Detected	11	Not Detected
1,1,2,2-Tetrachloroethane	2.3	Not Detected	16	Not Detected
Propylbenzene	2.3	Not Detected	11	Not Detected
4-Ethyltoluene	2.3	7.5	11	37
1,3,5-Trimethylbenzene	2.3	3.5	11	17
1,2,4-Trimethylbenzene	2.3	10	11	52
1,3-Dichlorobenzene	2.3	Not Detected	14	Not Detected
1,4-Dichlorobenzene	2.3	Not Detected	14	Not Detected
alpha-Chlorotoluene	2.3	Not Detected	12	Not Detected
1,2-Dichlorobenzene	2.3	Not Detected	14	Not Detected
1,2,4-Trichlorobenzene	9.1	Not Detected	68	Not Detected
Hexachlorobutadiene	9.1	Not Detected	97	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	115	70-130
1,2-Dichloroethane-d4	112	70-130
4-Bromofluorobenzene	92	70-130



Air Toxics

Client Sample ID: LAI-16

Lab ID#: 1710233A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101615	Date of Collection:	10/4/17 5:05:00 PM
Dil. Factor:	2.24	Date of Analysis:	10/16/17 06:49 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.5	Not Detected
Freon 114	1.1	Not Detected	7.8	Not Detected
Chloromethane	11	Not Detected	23	Not Detected
Vinyl Chloride	1.1	Not Detected	2.9	Not Detected
1,3-Butadiene	1.1	31	2.5	70
Bromomethane	11	Not Detected	43	Not Detected
Chloroethane	4.5	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.3	Not Detected
Ethanol	4.5	190	8.4	360
Freon 113	1.1	Not Detected	8.6	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Acetone	11	310	27	730
2-Propanol	4.5	74	11	180
Carbon Disulfide	4.5	54	14	170
3-Chloropropene	4.5	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	39	Not Detected
Methyl tert-butyl ether	4.5	Not Detected	16	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Hexane	1.1	26	3.9	92
1,1-Dichloroethane	1.1	Not Detected	4.5	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.5	180	13	520
cis-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Tetrahydrofuran	1.1	5.9	3.3	17
Chloroform	1.1	6.9	5.5	34
1,1,1-Trichloroethane	1.1	Not Detected	6.1	Not Detected
Cyclohexane	1.1	9.9	3.8	34
Carbon Tetrachloride	1.1	Not Detected	7.0	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.2	Not Detected
Benzene	1.1	23	3.6	73
1,2-Dichloroethane	1.1	Not Detected	4.5	Not Detected
Heptane	1.1	15	4.6	62
Trichloroethene	1.1	7.7	6.0	41
1,2-Dichloropropane	1.1	Not Detected	5.2	Not Detected
1,4-Dioxane	4.5	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.5	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.1	Not Detected
4-Methyl-2-pentanone	1.1	220	4.6	880
Toluene	1.1	16	4.2	60
trans-1,3-Dichloropropene	1.1	Not Detected	5.1	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.1	Not Detected
Tetrachloroethene	1.1	5.2	7.6	36
2-Hexanone	4.5	17	18	70



Air Toxics

Client Sample ID: LAI-16

Lab ID#: 1710233A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101615	Date of Collection:	10/4/17 5:05:00 PM
Dil. Factor:	2.24	Date of Analysis:	10/16/17 06:49 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.5	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.6	Not Detected
Chlorobenzene	1.1	Not Detected	5.2	Not Detected
Ethyl Benzene	1.1	1.4	4.9	5.9
m,p-Xylene	1.1	3.6	4.9	16
o-Xylene	1.1	1.2	4.9	5.4
Styrene	1.1	Not Detected	4.8	Not Detected
Bromoform	1.1	Not Detected	12	Not Detected
Cumene	1.1	Not Detected	5.5	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.7	Not Detected
Propylbenzene	1.1	Not Detected	5.5	Not Detected
4-Ethyltoluene	1.1	1.2	5.5	5.7
1,3,5-Trimethylbenzene	1.1	Not Detected	5.5	Not Detected
1,2,4-Trimethylbenzene	1.1	1.1	5.5	5.6
1,3-Dichlorobenzene	1.1	Not Detected	6.7	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.7	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.8	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.7	Not Detected
1,2,4-Trichlorobenzene	4.5	Not Detected	33	Not Detected
Hexachlorobutadiene	4.5	Not Detected	48	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130
1,2-Dichloroethane-d4	116	70-130
4-Bromofluorobenzene	91	70-130



Air Toxics

Client Sample ID: LAI-15

Lab ID#: 1710233A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101616	Date of Collection:	10/4/17 5:29:00 PM
Dil. Factor:	2.33	Date of Analysis:	10/16/17 07:18 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	5.8	Not Detected
Freon 114	1.2	Not Detected	8.1	Not Detected
Chloromethane	12	Not Detected	24	Not Detected
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
1,3-Butadiene	1.2	Not Detected	2.6	Not Detected
Bromomethane	12	Not Detected	45	Not Detected
Chloroethane	4.7	Not Detected	12	Not Detected
Freon 11	1.2	Not Detected	6.5	Not Detected
Ethanol	4.7	250	8.8	480
Freon 113	1.2	Not Detected	8.9	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Acetone	12	61	28	140
2-Propanol	4.7	17	11	41
Carbon Disulfide	4.7	Not Detected	14	Not Detected
3-Chloropropene	4.7	Not Detected	14	Not Detected
Methylene Chloride	12	Not Detected	40	Not Detected
Methyl tert-butyl ether	4.7	Not Detected	17	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Hexane	1.2	4.7	4.1	16
1,1-Dichloroethane	1.2	Not Detected	4.7	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.7	24	14	71
cis-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Tetrahydrofuran	1.2	4.4	3.4	13
Chloroform	1.2	4.6	5.7	23
1,1,1-Trichloroethane	1.2	Not Detected	6.4	Not Detected
Cyclohexane	1.2	2.6	4.0	8.8
Carbon Tetrachloride	1.2	Not Detected	7.3	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.4	Not Detected
Benzene	1.2	3.5	3.7	11
1,2-Dichloroethane	1.2	Not Detected	4.7	Not Detected
Heptane	1.2	2.5	4.8	10
Trichloroethene	1.2	1.7	6.3	9.0
1,2-Dichloropropane	1.2	Not Detected	5.4	Not Detected
1,4-Dioxane	4.7	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	7.8	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.3	Not Detected
4-Methyl-2-pentanone	1.2	1.3	4.8	5.5
Toluene	1.2	4.2	4.4	16
trans-1,3-Dichloropropene	1.2	Not Detected	5.3	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.4	Not Detected
Tetrachloroethene	1.2	2.6	7.9	18
2-Hexanone	4.7	Not Detected	19	Not Detected



Air Toxics

Client Sample ID: LAI-15

Lab ID#: 1710233A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101616	Date of Collection:	10/4/17 5:29:00 PM
Dil. Factor:	2.33	Date of Analysis:	10/16/17 07:18 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	9.9	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.0	Not Detected
Chlorobenzene	1.2	Not Detected	5.4	Not Detected
Ethyl Benzene	1.2	Not Detected	5.0	Not Detected
m,p-Xylene	1.2	2.2	5.0	9.4
o-Xylene	1.2	Not Detected	5.0	Not Detected
Styrene	1.2	Not Detected	5.0	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.7	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.0	Not Detected
Propylbenzene	1.2	Not Detected	5.7	Not Detected
4-Ethyltoluene	1.2	1.2	5.7	5.8
1,3,5-Trimethylbenzene	1.2	Not Detected	5.7	Not Detected
1,2,4-Trimethylbenzene	1.2	1.4	5.7	7.0
1,3-Dichlorobenzene	1.2	Not Detected	7.0	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.0	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.0	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.0	Not Detected
1,2,4-Trichlorobenzene	4.7	Not Detected	34	Not Detected
Hexachlorobutadiene	4.7	Not Detected	50	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130
1,2-Dichloroethane-d4	114	70-130
4-Bromofluorobenzene	91	70-130



Air Toxics

Client Sample ID: LAI-14

Lab ID#: 1710233A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101617	Date of Collection:	10/4/17 5:52:00 PM
Dil. Factor:	2.42	Date of Analysis:	10/16/17 07:46 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	6.0	Not Detected
Freon 114	1.2	Not Detected	8.4	Not Detected
Chloromethane	12	Not Detected	25	Not Detected
Vinyl Chloride	1.2	Not Detected	3.1	Not Detected
1,3-Butadiene	1.2	1.5	2.7	3.2
Bromomethane	12	Not Detected	47	Not Detected
Chloroethane	4.8	Not Detected	13	Not Detected
Freon 11	1.2	Not Detected	6.8	Not Detected
Ethanol	4.8	180	9.1	340
Freon 113	1.2	Not Detected	9.3	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Acetone	12	85	29	200
2-Propanol	4.8	25	12	62
Carbon Disulfide	4.8	Not Detected	15	Not Detected
3-Chloropropene	4.8	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	42	Not Detected
Methyl tert-butyl ether	4.8	Not Detected	17	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Hexane	1.2	4.3	4.3	15
1,1-Dichloroethane	1.2	Not Detected	4.9	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.8	38	14	110
cis-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Tetrahydrofuran	1.2	5.3	3.6	16
Chloroform	1.2	3.2	5.9	16
1,1,1-Trichloroethane	1.2	Not Detected	6.6	Not Detected
Cyclohexane	1.2	3.4	4.2	12
Carbon Tetrachloride	1.2	1.2	7.6	7.8
2,2,4-Trimethylpentane	1.2	Not Detected	5.6	Not Detected
Benzene	1.2	2.2	3.9	7.0
1,2-Dichloroethane	1.2	Not Detected	4.9	Not Detected
Heptane	1.2	3.3	5.0	13
Trichloroethene	1.2	220	6.5	1200
1,2-Dichloropropane	1.2	Not Detected	5.6	Not Detected
1,4-Dioxane	4.8	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	8.1	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.5	Not Detected
4-Methyl-2-pentanone	1.2	6.7	5.0	28
Toluene	1.2	4.8	4.6	18
trans-1,3-Dichloropropene	1.2	Not Detected	5.5	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.6	Not Detected
Tetrachloroethene	1.2	Not Detected	8.2	Not Detected
2-Hexanone	4.8	Not Detected	20	Not Detected

Client Sample ID: LAI-14

Lab ID#: 1710233A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101617	Date of Collection:	10/4/17 5:52:00 PM
Dil. Factor:	2.42	Date of Analysis:	10/16/17 07:46 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.3	Not Detected
Chlorobenzene	1.2	Not Detected	5.6	Not Detected
Ethyl Benzene	1.2	Not Detected	5.2	Not Detected
m,p-Xylene	1.2	4.8	5.2	21
o-Xylene	1.2	1.8	5.2	8.0
Styrene	1.2	Not Detected	5.2	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.9	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.3	Not Detected
Propylbenzene	1.2	Not Detected	5.9	Not Detected
4-Ethyltoluene	1.2	4.6	5.9	22
1,3,5-Trimethylbenzene	1.2	2.1	5.9	10
1,2,4-Trimethylbenzene	1.2	6.6	5.9	33
1,3-Dichlorobenzene	1.2	Not Detected	7.3	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.3	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.3	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.3	Not Detected
1,2,4-Trichlorobenzene	4.8	Not Detected	36	Not Detected
Hexachlorobutadiene	4.8	Not Detected	52	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	107	70-130
1,2-Dichloroethane-d4	112	70-130
4-Bromofluorobenzene	92	70-130



Air Toxics

Client Sample ID: LAI-13

Lab ID#: 1710233A-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101618	Date of Collection:	10/4/17 6:17:00 PM
Dil. Factor:	24.2	Date of Analysis:	10/16/17 08:12 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	12	Not Detected	60	Not Detected
Freon 114	12	Not Detected	84	Not Detected
Chloromethane	120	Not Detected	250	Not Detected
Vinyl Chloride	12	Not Detected	31	Not Detected
1,3-Butadiene	12	Not Detected	27	Not Detected
Bromomethane	120	Not Detected	470	Not Detected
Chloroethane	48	Not Detected	130	Not Detected
Freon 11	12	Not Detected	68	Not Detected
Ethanol	48	110	91	200
Freon 113	12	Not Detected	93	Not Detected
1,1-Dichloroethene	12	Not Detected	48	Not Detected
Acetone	120	Not Detected	290	Not Detected
2-Propanol	48	Not Detected	120	Not Detected
Carbon Disulfide	48	Not Detected	150	Not Detected
3-Chloropropene	48	Not Detected	150	Not Detected
Methylene Chloride	120	Not Detected	420	Not Detected
Methyl tert-butyl ether	48	Not Detected	170	Not Detected
trans-1,2-Dichloroethene	12	Not Detected	48	Not Detected
Hexane	12	Not Detected	43	Not Detected
1,1-Dichloroethane	12	Not Detected	49	Not Detected
2-Butanone (Methyl Ethyl Ketone)	48	Not Detected	140	Not Detected
cis-1,2-Dichloroethene	12	15	48	59
Tetrahydrofuran	12	Not Detected	36	Not Detected
Chloroform	12	Not Detected	59	Not Detected
1,1,1-Trichloroethane	12	Not Detected	66	Not Detected
Cyclohexane	12	Not Detected	42	Not Detected
Carbon Tetrachloride	12	Not Detected	76	Not Detected
2,2,4-Trimethylpentane	12	Not Detected	56	Not Detected
Benzene	12	Not Detected	39	Not Detected
1,2-Dichloroethane	12	Not Detected	49	Not Detected
Heptane	12	Not Detected	50	Not Detected
Trichloroethene	12	2900	65	15000
1,2-Dichloropropane	12	Not Detected	56	Not Detected
1,4-Dioxane	48	Not Detected	170	Not Detected
Bromodichloromethane	12	Not Detected	81	Not Detected
cis-1,3-Dichloropropene	12	Not Detected	55	Not Detected
4-Methyl-2-pentanone	12	Not Detected	50	Not Detected
Toluene	12	Not Detected	46	Not Detected
trans-1,3-Dichloropropene	12	Not Detected	55	Not Detected
1,1,2-Trichloroethane	12	Not Detected	66	Not Detected
Tetrachloroethene	12	Not Detected	82	Not Detected
2-Hexanone	48	Not Detected	200	Not Detected

Client Sample ID: LAI-13

Lab ID#: 1710233A-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101618	Date of Collection:	10/4/17 6:17:00 PM
Dil. Factor:	24.2	Date of Analysis:	10/16/17 08:12 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	12	Not Detected	100	Not Detected
1,2-Dibromoethane (EDB)	12	Not Detected	93	Not Detected
Chlorobenzene	12	Not Detected	56	Not Detected
Ethyl Benzene	12	Not Detected	52	Not Detected
m,p-Xylene	12	Not Detected	52	Not Detected
o-Xylene	12	Not Detected	52	Not Detected
Styrene	12	Not Detected	52	Not Detected
Bromoform	12	Not Detected	120	Not Detected
Cumene	12	Not Detected	59	Not Detected
1,1,2,2-Tetrachloroethane	12	Not Detected	83	Not Detected
Propylbenzene	12	Not Detected	59	Not Detected
4-Ethyltoluene	12	Not Detected	59	Not Detected
1,3,5-Trimethylbenzene	12	Not Detected	59	Not Detected
1,2,4-Trimethylbenzene	12	Not Detected	59	Not Detected
1,3-Dichlorobenzene	12	Not Detected	73	Not Detected
1,4-Dichlorobenzene	12	Not Detected	73	Not Detected
alpha-Chlorotoluene	12	Not Detected	63	Not Detected
1,2-Dichlorobenzene	12	Not Detected	73	Not Detected
1,2,4-Trichlorobenzene	48	Not Detected	360	Not Detected
Hexachlorobutadiene	48	Not Detected	520	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130
1,2-Dichloroethane-d4	114	70-130
4-Bromofluorobenzene	91	70-130



Air Toxics

Client Sample ID: LAI-20

Lab ID#: 1710233A-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101619	Date of Collection:	10/4/17 4:38:00 PM
Dil. Factor:	2.38	Date of Analysis:	10/16/17 10:49 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	5.9	Not Detected
Freon 114	1.2	Not Detected	8.3	Not Detected
Chloromethane	12	Not Detected	24	Not Detected
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
1,3-Butadiene	1.2	Not Detected	2.6	Not Detected
Bromomethane	12	Not Detected	46	Not Detected
Chloroethane	4.8	Not Detected	12	Not Detected
Freon 11	1.2	Not Detected	6.7	Not Detected
Ethanol	4.8	160	9.0	300
Freon 113	1.2	Not Detected	9.1	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Acetone	12	1500 E	28	3500 E
2-Propanol	4.8	13	12	32
Carbon Disulfide	4.8	Not Detected	15	Not Detected
3-Chloropropene	4.8	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	41	Not Detected
Methyl tert-butyl ether	4.8	Not Detected	17	Not Detected
trans-1,2-Dichloroethene	1.2	1.4	4.7	5.8
Hexane	1.2	6.5	4.2	23
1,1-Dichloroethane	1.2	Not Detected	4.8	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.8	21	14	62
cis-1,2-Dichloroethene	1.2	31	4.7	120
Tetrahydrofuran	1.2	2.6	3.5	7.6
Chloroform	1.2	3.4	5.8	17
1,1,1-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Cyclohexane	1.2	1.5	4.1	5.1
Carbon Tetrachloride	1.2	Not Detected	7.5	Not Detected
2,2,4-Trimethylpentane	1.2	3.3	5.6	15
Benzene	1.2	2.4	3.8	7.7
1,2-Dichloroethane	1.2	Not Detected	4.8	Not Detected
Heptane	1.2	Not Detected	4.9	Not Detected
Trichloroethene	1.2	240	6.4	1300
1,2-Dichloropropane	1.2	Not Detected	5.5	Not Detected
1,4-Dioxane	4.8	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	8.0	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
4-Methyl-2-pentanone	1.2	2.2	4.9	9.0
Toluene	1.2	6.2	4.5	23
trans-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Tetrachloroethene	1.2	1.2	8.1	8.2
2-Hexanone	4.8	Not Detected	19	Not Detected

Client Sample ID: LAI-20

Lab ID#: 1710233A-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101619	Date of Collection:	10/4/17 4:38:00 PM
Dil. Factor:	2.38	Date of Analysis:	10/16/17 10:49 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.1	Not Detected
Chlorobenzene	1.2	Not Detected	5.5	Not Detected
Ethyl Benzene	1.2	1.6	5.2	7.2
m,p-Xylene	1.2	6.7	5.2	29
o-Xylene	1.2	2.5	5.2	11
Styrene	1.2	Not Detected	5.1	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.8	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.2	Not Detected
Propylbenzene	1.2	Not Detected	5.8	Not Detected
4-Ethyltoluene	1.2	5.2	5.8	25
1,3,5-Trimethylbenzene	1.2	1.7	5.8	8.4
1,2,4-Trimethylbenzene	1.2	6.0	5.8	30
1,3-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.2	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,2,4-Trichlorobenzene	4.8	Not Detected	35	Not Detected
Hexachlorobutadiene	4.8	Not Detected	51	Not Detected

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	110	70-130
1,2-Dichloroethane-d4	112	70-130
4-Bromofluorobenzene	92	70-130



Air Toxics

Client Sample ID: LAI-23

Lab ID#: 1710233A-11A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101620	Date of Collection:	10/6/17 11:15:00 AM
Dil. Factor:	9.51	Date of Analysis:	10/16/17 11:16 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	4.8	Not Detected	24	Not Detected
Freon 114	4.8	Not Detected	33	Not Detected
Chloromethane	48	Not Detected	98	Not Detected
Vinyl Chloride	4.8	1600	12	4200
1,3-Butadiene	4.8	14	10	31
Bromomethane	48	Not Detected	180	Not Detected
Chloroethane	19	Not Detected	50	Not Detected
Freon 11	4.8	Not Detected	27	Not Detected
Ethanol	19	280	36	530
Freon 113	4.8	Not Detected	36	Not Detected
1,1-Dichloroethene	4.8	Not Detected	19	Not Detected
Acetone	48	65	110	150
2-Propanol	19	Not Detected	47	Not Detected
Carbon Disulfide	19	Not Detected	59	Not Detected
3-Chloropropene	19	Not Detected	60	Not Detected
Methylene Chloride	48	Not Detected	160	Not Detected
Methyl tert-butyl ether	19	Not Detected	68	Not Detected
trans-1,2-Dichloroethene	4.8	Not Detected	19	Not Detected
Hexane	4.8	70	17	250
1,1-Dichloroethane	4.8	16	19	64
2-Butanone (Methyl Ethyl Ketone)	19	Not Detected	56	Not Detected
cis-1,2-Dichloroethene	4.8	21	19	85
Tetrahydrofuran	4.8	Not Detected	14	Not Detected
Chloroform	4.8	Not Detected	23	Not Detected
1,1,1-Trichloroethane	4.8	Not Detected	26	Not Detected
Cyclohexane	4.8	57	16	200
Carbon Tetrachloride	4.8	Not Detected	30	Not Detected
2,2,4-Trimethylpentane	4.8	Not Detected	22	Not Detected
Benzene	4.8	14	15	46
1,2-Dichloroethane	4.8	Not Detected	19	Not Detected
Heptane	4.8	28	19	110
Trichloroethene	4.8	5.6	26	30
1,2-Dichloropropane	4.8	Not Detected	22	Not Detected
1,4-Dioxane	19	Not Detected	68	Not Detected
Bromodichloromethane	4.8	Not Detected	32	Not Detected
cis-1,3-Dichloropropene	4.8	Not Detected	22	Not Detected
4-Methyl-2-pentanone	4.8	Not Detected	19	Not Detected
Toluene	4.8	4.8	18	18
trans-1,3-Dichloropropene	4.8	Not Detected	22	Not Detected
1,1,2-Trichloroethane	4.8	Not Detected	26	Not Detected
Tetrachloroethene	4.8	Not Detected	32	Not Detected
2-Hexanone	19	Not Detected	78	Not Detected

Client Sample ID: LAI-23

Lab ID#: 1710233A-11A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101620	Date of Collection:	10/6/17 11:15:00 AM
Dil. Factor:	9.51	Date of Analysis:	10/16/17 11:16 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	4.8	Not Detected	40	Not Detected
1,2-Dibromoethane (EDB)	4.8	Not Detected	36	Not Detected
Chlorobenzene	4.8	Not Detected	22	Not Detected
Ethyl Benzene	4.8	Not Detected	21	Not Detected
m,p-Xylene	4.8	Not Detected	21	Not Detected
o-Xylene	4.8	Not Detected	21	Not Detected
Styrene	4.8	Not Detected	20	Not Detected
Bromoform	4.8	Not Detected	49	Not Detected
Cumene	4.8	Not Detected	23	Not Detected
1,1,2,2-Tetrachloroethane	4.8	Not Detected	33	Not Detected
Propylbenzene	4.8	Not Detected	23	Not Detected
4-Ethyltoluene	4.8	Not Detected	23	Not Detected
1,3,5-Trimethylbenzene	4.8	Not Detected	23	Not Detected
1,2,4-Trimethylbenzene	4.8	Not Detected	23	Not Detected
1,3-Dichlorobenzene	4.8	Not Detected	28	Not Detected
1,4-Dichlorobenzene	4.8	Not Detected	28	Not Detected
alpha-Chlorotoluene	4.8	Not Detected	25	Not Detected
1,2-Dichlorobenzene	4.8	Not Detected	28	Not Detected
1,2,4-Trichlorobenzene	19	Not Detected	140	Not Detected
Hexachlorobutadiene	19	Not Detected	200	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	117	70-130
4-Bromofluorobenzene	89	70-130



Air Toxics

Client Sample ID: LAI-26

Lab ID#: 1710233A-12A

EPA METHOD TO-15 GC/MS

File Name:	14101614	Date of Collection:	10/6/17 1:12:00 PM
Dil. Factor:	2.38	Date of Analysis:	10/16/17 04:04 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	12	Not Detected	59	Not Detected
Freon 114	12	Not Detected	83	Not Detected
Chloromethane	48	Not Detected	98	Not Detected
Vinyl Chloride	12	12	30	31
1,3-Butadiene	12	23	26	51
Bromomethane	48	Not Detected	180	Not Detected
Chloroethane	48	Not Detected	120	Not Detected
Freon 11	12	Not Detected	67	Not Detected
Ethanol	48	260 J0	90	480 J0
Freon 113	12	Not Detected	91	Not Detected
1,1-Dichloroethene	12	120	47	480
Acetone	48	Not Detected	110	Not Detected
2-Propanol	48	Not Detected	120	Not Detected
Carbon Disulfide	48	Not Detected	150	Not Detected
3-Chloropropene	48	Not Detected	150	Not Detected
Methylene Chloride	48	Not Detected	160	Not Detected
Methyl tert-butyl ether	12	Not Detected	43	Not Detected
trans-1,2-Dichloroethene	12	35	47	140
Hexane	12	31	42	110
1,1-Dichloroethane	12	Not Detected	48	Not Detected
2-Butanone (Methyl Ethyl Ketone)	48	Not Detected	140	Not Detected
cis-1,2-Dichloroethene	12	3300	47	13000
Tetrahydrofuran	12	Not Detected	35	Not Detected
Chloroform	12	Not Detected	58	Not Detected
1,1,1-Trichloroethane	12	Not Detected	65	Not Detected
Cyclohexane	12	15	41	52
Carbon Tetrachloride	12	Not Detected	75	Not Detected
2,2,4-Trimethylpentane	12	12	56	57
Benzene	12	Not Detected	38	Not Detected
1,2-Dichloroethane	12	Not Detected	48	Not Detected
Heptane	12	Not Detected	49	Not Detected
Trichloroethene	12	14000	64	74000
1,2-Dichloropropane	12	Not Detected	55	Not Detected
1,4-Dioxane	48	Not Detected	170	Not Detected
Bromodichloromethane	12	Not Detected	80	Not Detected
cis-1,3-Dichloropropene	12	Not Detected	54	Not Detected
4-Methyl-2-pentanone	12	Not Detected	49	Not Detected
Toluene	12	Not Detected	45	Not Detected
trans-1,3-Dichloropropene	12	Not Detected	54	Not Detected
1,1,2-Trichloroethane	12	Not Detected	65	Not Detected
Tetrachloroethene	12	19	81	130
2-Hexanone	48	Not Detected	190	Not Detected

Client Sample ID: LAI-26

Lab ID#: 1710233A-12A

EPA METHOD TO-15 GC/MS

File Name:	14101614	Date of Collection:	10/6/17 1:12:00 PM
Dil. Factor:	2.38	Date of Analysis:	10/16/17 04:04 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	12	Not Detected	100	Not Detected
1,2-Dibromoethane (EDB)	12	Not Detected	91	Not Detected
Chlorobenzene	12	Not Detected	55	Not Detected
Ethyl Benzene	12	Not Detected	52	Not Detected
m,p-Xylene	12	Not Detected	52	Not Detected
o-Xylene	12	Not Detected	52	Not Detected
Styrene	12	Not Detected	51	Not Detected
Bromoform	12	Not Detected	120	Not Detected
Cumene	12	Not Detected	58	Not Detected
1,1,2,2-Tetrachloroethane	12	Not Detected	82	Not Detected
Propylbenzene	12	Not Detected	58	Not Detected
4-Ethyltoluene	12	Not Detected	58	Not Detected
1,3,5-Trimethylbenzene	12	Not Detected	58	Not Detected
1,2,4-Trimethylbenzene	12	Not Detected	58	Not Detected
1,3-Dichlorobenzene	12	Not Detected	72	Not Detected
1,4-Dichlorobenzene	12	Not Detected	72	Not Detected
alpha-Chlorotoluene	12	Not Detected	62	Not Detected
1,2-Dichlorobenzene	12	Not Detected	72	Not Detected
1,2,4-Trichlorobenzene	48	Not Detected	350	Not Detected
Hexachlorobutadiene	48	Not Detected	510	Not Detected

J0 = Estimated value due to bias in the CCV.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	108	70-130



Air Toxics

Client Sample ID: LAI-25

Lab ID#: 1710233A-13A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101621	Date of Collection:	10/6/17 1:40:00 PM
Dil. Factor:	31.1	Date of Analysis:	10/16/17 11:43 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	16	Not Detected	77	Not Detected
Freon 114	16	Not Detected	110	Not Detected
Chloromethane	160	Not Detected	320	Not Detected
Vinyl Chloride	16	Not Detected	40	Not Detected
1,3-Butadiene	16	32	34	71
Bromomethane	160	Not Detected	600	Not Detected
Chloroethane	62	Not Detected	160	Not Detected
Freon 11	16	Not Detected	87	Not Detected
Ethanol	62	700	120	1300
Freon 113	16	Not Detected	120	Not Detected
1,1-Dichloroethene	16	33	62	130
Acetone	160	Not Detected	370	Not Detected
2-Propanol	62	Not Detected	150	Not Detected
Carbon Disulfide	62	Not Detected	190	Not Detected
3-Chloropropene	62	Not Detected	190	Not Detected
Methylene Chloride	160	Not Detected	540	Not Detected
Methyl tert-butyl ether	62	Not Detected	220	Not Detected
trans-1,2-Dichloroethene	16	44	62	170
Hexane	16	Not Detected	55	Not Detected
1,1-Dichloroethane	16	Not Detected	63	Not Detected
2-Butanone (Methyl Ethyl Ketone)	62	Not Detected	180	Not Detected
cis-1,2-Dichloroethene	16	390	62	1500
Tetrahydrofuran	16	Not Detected	46	Not Detected
Chloroform	16	Not Detected	76	Not Detected
1,1,1-Trichloroethane	16	Not Detected	85	Not Detected
Cyclohexane	16	Not Detected	54	Not Detected
Carbon Tetrachloride	16	Not Detected	98	Not Detected
2,2,4-Trimethylpentane	16	Not Detected	73	Not Detected
Benzene	16	Not Detected	50	Not Detected
1,2-Dichloroethane	16	Not Detected	63	Not Detected
Heptane	16	Not Detected	64	Not Detected
Trichloroethene	16	5300	84	29000
1,2-Dichloropropane	16	Not Detected	72	Not Detected
1,4-Dioxane	62	Not Detected	220	Not Detected
Bromodichloromethane	16	Not Detected	100	Not Detected
cis-1,3-Dichloropropene	16	Not Detected	70	Not Detected
4-Methyl-2-pentanone	16	Not Detected	64	Not Detected
Toluene	16	Not Detected	58	Not Detected
trans-1,3-Dichloropropene	16	Not Detected	70	Not Detected
1,1,2-Trichloroethane	16	Not Detected	85	Not Detected
Tetrachloroethene	16	Not Detected	100	Not Detected
2-Hexanone	62	Not Detected	250	Not Detected



Client Sample ID: LAI-25

Lab ID#: 1710233A-13A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101621	Date of Collection:	10/6/17 1:40:00 PM
Dil. Factor:	31.1	Date of Analysis:	10/16/17 11:43 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	16	Not Detected	130	Not Detected
1,2-Dibromoethane (EDB)	16	Not Detected	120	Not Detected
Chlorobenzene	16	Not Detected	72	Not Detected
Ethyl Benzene	16	Not Detected	68	Not Detected
m,p-Xylene	16	Not Detected	68	Not Detected
o-Xylene	16	Not Detected	68	Not Detected
Styrene	16	Not Detected	66	Not Detected
Bromoform	16	Not Detected	160	Not Detected
Cumene	16	Not Detected	76	Not Detected
1,1,2,2-Tetrachloroethane	16	Not Detected	110	Not Detected
Propylbenzene	16	Not Detected	76	Not Detected
4-Ethyltoluene	16	Not Detected	76	Not Detected
1,3,5-Trimethylbenzene	16	Not Detected	76	Not Detected
1,2,4-Trimethylbenzene	16	Not Detected	76	Not Detected
1,3-Dichlorobenzene	16	Not Detected	93	Not Detected
1,4-Dichlorobenzene	16	Not Detected	93	Not Detected
alpha-Chlorotoluene	16	Not Detected	80	Not Detected
1,2-Dichlorobenzene	16	Not Detected	93	Not Detected
1,2,4-Trichlorobenzene	62	Not Detected	460	Not Detected
Hexachlorobutadiene	62	Not Detected	660	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	117	70-130
4-Bromofluorobenzene	92	70-130



Air Toxics

Client Sample ID: LAI-28

Lab ID#: 1710233A-14A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101622	Date of Collection:	10/6/17 11:47:00 AM
Dil. Factor:	2.38	Date of Analysis:	10/17/17 12:11 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	5.9	Not Detected
Freon 114	1.2	Not Detected	8.3	Not Detected
Chloromethane	12	Not Detected	24	Not Detected
Vinyl Chloride	1.2	27	3.0	69
1,3-Butadiene	1.2	2.7	2.6	6.1
Bromomethane	12	Not Detected	46	Not Detected
Chloroethane	4.8	Not Detected	12	Not Detected
Freon 11	1.2	Not Detected	6.7	Not Detected
Ethanol	4.8	280	9.0	530
Freon 113	1.2	Not Detected	9.1	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Acetone	12	230	28	540
2-Propanol	4.8	18	12	43
Carbon Disulfide	4.8	17	15	53
3-Chloropropene	4.8	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	41	Not Detected
Methyl tert-butyl ether	4.8	Not Detected	17	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Hexane	1.2	47	4.2	160
1,1-Dichloroethane	1.2	Not Detected	4.8	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.8	50	14	150
cis-1,2-Dichloroethene	1.2	2.3	4.7	9.3
Tetrahydrofuran	1.2	Not Detected	3.5	Not Detected
Chloroform	1.2	1.5	5.8	7.2
1,1,1-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Cyclohexane	1.2	36	4.1	120
Carbon Tetrachloride	1.2	Not Detected	7.5	Not Detected
2,2,4-Trimethylpentane	1.2	6.2	5.6	29
Benzene	1.2	3.8	3.8	12
1,2-Dichloroethane	1.2	Not Detected	4.8	Not Detected
Heptane	1.2	20	4.9	80
Trichloroethene	1.2	Not Detected	6.4	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.5	Not Detected
1,4-Dioxane	4.8	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	8.0	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
4-Methyl-2-pentanone	1.2	1.7	4.9	6.8
Toluene	1.2	9.2	4.5	35
trans-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Tetrachloroethene	1.2	Not Detected	8.1	Not Detected
2-Hexanone	4.8	Not Detected	19	Not Detected



Client Sample ID: LAI-28

Lab ID#: 1710233A-14A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101622	Date of Collection:	10/6/17 11:47:00 AM
Dil. Factor:	2.38	Date of Analysis:	10/17/17 12:11 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.1	Not Detected
Chlorobenzene	1.2	Not Detected	5.5	Not Detected
Ethyl Benzene	1.2	Not Detected	5.2	Not Detected
m,p-Xylene	1.2	1.8	5.2	7.7
o-Xylene	1.2	Not Detected	5.2	Not Detected
Styrene	1.2	Not Detected	5.1	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.8	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.2	Not Detected
Propylbenzene	1.2	Not Detected	5.8	Not Detected
4-Ethyltoluene	1.2	Not Detected	5.8	Not Detected
1,3,5-Trimethylbenzene	1.2	Not Detected	5.8	Not Detected
1,2,4-Trimethylbenzene	1.2	Not Detected	5.8	Not Detected
1,3-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.2	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,2,4-Trichlorobenzene	4.8	Not Detected	35	Not Detected
Hexachlorobutadiene	4.8	Not Detected	51	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	113	70-130
4-Bromofluorobenzene	93	70-130



Air Toxics

Client Sample ID: LAI-24

Lab ID#: 1710233A-15A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101623	Date of Collection:	10/6/17 2:06:00 PM
Dil. Factor:	5.24	Date of Analysis:	10/17/17 12:39 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	2.6	Not Detected	13	Not Detected
Freon 114	2.6	Not Detected	18	Not Detected
Chloromethane	26	Not Detected	54	Not Detected
Vinyl Chloride	2.6	Not Detected	6.7	Not Detected
1,3-Butadiene	2.6	Not Detected	5.8	Not Detected
Bromomethane	26	Not Detected	100	Not Detected
Chloroethane	10	Not Detected	28	Not Detected
Freon 11	2.6	Not Detected	15	Not Detected
Ethanol	10	150	20	290
Freon 113	2.6	Not Detected	20	Not Detected
1,1-Dichloroethene	2.6	Not Detected	10	Not Detected
Acetone	26	Not Detected	62	Not Detected
2-Propanol	10	Not Detected	26	Not Detected
Carbon Disulfide	10	Not Detected	33	Not Detected
3-Chloropropene	10	Not Detected	33	Not Detected
Methylene Chloride	26	Not Detected	91	Not Detected
Methyl tert-butyl ether	10	Not Detected	38	Not Detected
trans-1,2-Dichloroethene	2.6	Not Detected	10	Not Detected
Hexane	2.6	3.3	9.2	12
1,1-Dichloroethane	2.6	Not Detected	11	Not Detected
2-Butanone (Methyl Ethyl Ketone)	10	Not Detected	31	Not Detected
cis-1,2-Dichloroethene	2.6	Not Detected	10	Not Detected
Tetrahydrofuran	2.6	Not Detected	7.7	Not Detected
Chloroform	2.6	13	13	64
1,1,1-Trichloroethane	2.6	Not Detected	14	Not Detected
Cyclohexane	2.6	4.5	9.0	15
Carbon Tetrachloride	2.6	Not Detected	16	Not Detected
2,2,4-Trimethylpentane	2.6	Not Detected	12	Not Detected
Benzene	2.6	Not Detected	8.4	Not Detected
1,2-Dichloroethane	2.6	Not Detected	11	Not Detected
Heptane	2.6	Not Detected	11	Not Detected
Trichloroethene	2.6	Not Detected	14	Not Detected
1,2-Dichloropropane	2.6	Not Detected	12	Not Detected
1,4-Dioxane	10	Not Detected	38	Not Detected
Bromodichloromethane	2.6	Not Detected	18	Not Detected
cis-1,3-Dichloropropene	2.6	Not Detected	12	Not Detected
4-Methyl-2-pentanone	2.6	4.2	11	17
Toluene	2.6	7.0	9.9	26
trans-1,3-Dichloropropene	2.6	Not Detected	12	Not Detected
1,1,2-Trichloroethane	2.6	Not Detected	14	Not Detected
Tetrachloroethene	2.6	Not Detected	18	Not Detected
2-Hexanone	10	Not Detected	43	Not Detected

Client Sample ID: LAI-24

Lab ID#: 1710233A-15A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101623	Date of Collection:	10/6/17 2:06:00 PM
Dil. Factor:	5.24	Date of Analysis:	10/17/17 12:39 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	2.6	Not Detected	22	Not Detected
1,2-Dibromoethane (EDB)	2.6	Not Detected	20	Not Detected
Chlorobenzene	2.6	Not Detected	12	Not Detected
Ethyl Benzene	2.6	Not Detected	11	Not Detected
m,p-Xylene	2.6	3.5	11	15
o-Xylene	2.6	Not Detected	11	Not Detected
Styrene	2.6	Not Detected	11	Not Detected
Bromoform	2.6	Not Detected	27	Not Detected
Cumene	2.6	Not Detected	13	Not Detected
1,1,2,2-Tetrachloroethane	2.6	Not Detected	18	Not Detected
Propylbenzene	2.6	Not Detected	13	Not Detected
4-Ethyltoluene	2.6	Not Detected	13	Not Detected
1,3,5-Trimethylbenzene	2.6	Not Detected	13	Not Detected
1,2,4-Trimethylbenzene	2.6	Not Detected	13	Not Detected
1,3-Dichlorobenzene	2.6	Not Detected	16	Not Detected
1,4-Dichlorobenzene	2.6	Not Detected	16	Not Detected
alpha-Chlorotoluene	2.6	Not Detected	14	Not Detected
1,2-Dichlorobenzene	2.6	Not Detected	16	Not Detected
1,2,4-Trichlorobenzene	10	Not Detected	78	Not Detected
Hexachlorobutadiene	10	Not Detected	110	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130
1,2-Dichloroethane-d4	113	70-130
4-Bromofluorobenzene	92	70-130



Client Sample ID: LAI-27

Lab ID#: 1710233A-16A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101624	Date of Collection:	10/6/17 2:39:00 PM
Dil. Factor:	2.23	Date of Analysis:	10/17/17 01:08 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.5	Not Detected
Freon 114	1.1	Not Detected	7.8	Not Detected
Chloromethane	11	Not Detected	23	Not Detected
Vinyl Chloride	1.1	23	2.8	59
1,3-Butadiene	1.1	12	2.5	28
Bromomethane	11	Not Detected	43	Not Detected
Chloroethane	4.5	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.3	Not Detected
Ethanol	4.5	330	8.4	630
Freon 113	1.1	Not Detected	8.5	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Acetone	11	40	26	94
2-Propanol	4.5	38	11	92
Carbon Disulfide	4.5	Not Detected	14	Not Detected
3-Chloropropene	4.5	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	39	Not Detected
Methyl tert-butyl ether	4.5	Not Detected	16	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Hexane	1.1	21	3.9	73
1,1-Dichloroethane	1.1	Not Detected	4.5	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.5	9.8	13	29
cis-1,2-Dichloroethene	1.1	42	4.4	170
Tetrahydrofuran	1.1	Not Detected	3.3	Not Detected
Chloroform	1.1	Not Detected	5.4	Not Detected
1,1,1-Trichloroethane	1.1	Not Detected	6.1	Not Detected
Cyclohexane	1.1	17	3.8	59
Carbon Tetrachloride	1.1	Not Detected	7.0	Not Detected
2,2,4-Trimethylpentane	1.1	2.1	5.2	9.8
Benzene	1.1	5.5	3.6	17
1,2-Dichloroethane	1.1	Not Detected	4.5	Not Detected
Heptane	1.1	14	4.6	60
Trichloroethene	1.1	6.4	6.0	34
1,2-Dichloropropane	1.1	Not Detected	5.2	Not Detected
1,4-Dioxane	4.5	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.5	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.1	Not Detected
4-Methyl-2-pentanone	1.1	2.8	4.6	11
Toluene	1.1	45	4.2	170
trans-1,3-Dichloropropene	1.1	Not Detected	5.1	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.1	Not Detected
Tetrachloroethene	1.1	Not Detected	7.6	Not Detected
2-Hexanone	4.5	Not Detected	18	Not Detected



Client Sample ID: LAI-27

Lab ID#: 1710233A-16A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101624	Date of Collection:	10/6/17 2:39:00 PM
Dil. Factor:	2.23	Date of Analysis:	10/17/17 01:08 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.5	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.6	Not Detected
Chlorobenzene	1.1	Not Detected	5.1	Not Detected
Ethyl Benzene	1.1	3.8	4.8	16
m,p-Xylene	1.1	13	4.8	58
o-Xylene	1.1	3.8	4.8	16
Styrene	1.1	Not Detected	4.7	Not Detected
Bromoform	1.1	Not Detected	12	Not Detected
Cumene	1.1	Not Detected	5.5	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.6	Not Detected
Propylbenzene	1.1	Not Detected	5.5	Not Detected
4-Ethyltoluene	1.1	2.2	5.5	11
1,3,5-Trimethylbenzene	1.1	Not Detected	5.5	Not Detected
1,2,4-Trimethylbenzene	1.1	2.1	5.5	10
1,3-Dichlorobenzene	1.1	Not Detected	6.7	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.7	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.8	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.7	Not Detected
1,2,4-Trichlorobenzene	4.5	Not Detected	33	Not Detected
Hexachlorobutadiene	4.5	Not Detected	48	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	116	70-130
4-Bromofluorobenzene	92	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1710233A-17A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101609	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/16/17 03:26 PM

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

Client Sample ID: Lab Blank

Lab ID#: 1710233A-17A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101609	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/16/17 03:26 PM

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

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130
1,2-Dichloroethane-d4	116	70-130
4-Bromofluorobenzene	87	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1710233A-17B

EPA METHOD TO-15 GC/MS

File Name:	14101607	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/16/17 11:17 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	5.0	Not Detected	25	Not Detected
Freon 114	5.0	Not Detected	35	Not Detected
Chloromethane	20	Not Detected	41	Not Detected
Vinyl Chloride	5.0	Not Detected	13	Not Detected
1,3-Butadiene	5.0	Not Detected	11	Not Detected
Bromomethane	20	Not Detected	78	Not Detected
Chloroethane	20	Not Detected	53	Not Detected
Freon 11	5.0	Not Detected	28	Not Detected
Ethanol	20	Not Detected	38	Not Detected
Freon 113	5.0	Not Detected	38	Not Detected
1,1-Dichloroethene	5.0	Not Detected	20	Not Detected
Acetone	20	Not Detected	48	Not Detected
2-Propanol	20	Not Detected	49	Not Detected
Carbon Disulfide	20	Not Detected	62	Not Detected
3-Chloropropene	20	Not Detected	63	Not Detected
Methylene Chloride	20	Not Detected	69	Not Detected
Methyl tert-butyl ether	5.0	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Hexane	5.0	Not Detected	18	Not Detected
1,1-Dichloroethane	5.0	Not Detected	20	Not Detected
2-Butanone (Methyl Ethyl Ketone)	20	Not Detected	59	Not Detected
cis-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Tetrahydrofuran	5.0	Not Detected	15	Not Detected
Chloroform	5.0	Not Detected	24	Not Detected
1,1,1-Trichloroethane	5.0	Not Detected	27	Not Detected
Cyclohexane	5.0	Not Detected	17	Not Detected
Carbon Tetrachloride	5.0	Not Detected	31	Not Detected
2,2,4-Trimethylpentane	5.0	Not Detected	23	Not Detected
Benzene	5.0	Not Detected	16	Not Detected
1,2-Dichloroethane	5.0	Not Detected	20	Not Detected
Heptane	5.0	Not Detected	20	Not Detected
Trichloroethene	5.0	Not Detected	27	Not Detected
1,2-Dichloropropane	5.0	Not Detected	23	Not Detected
1,4-Dioxane	20	Not Detected	72	Not Detected
Bromodichloromethane	5.0	Not Detected	34	Not Detected
cis-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
4-Methyl-2-pentanone	5.0	Not Detected	20	Not Detected
Toluene	5.0	Not Detected	19	Not Detected
trans-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
1,1,2-Trichloroethane	5.0	Not Detected	27	Not Detected
Tetrachloroethene	5.0	Not Detected	34	Not Detected
2-Hexanone	20	Not Detected	82	Not Detected

Client Sample ID: Lab Blank

Lab ID#: 1710233A-17B

EPA METHOD TO-15 GC/MS

File Name:	14101607	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/16/17 11:17 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	5.0	Not Detected	42	Not Detected
1,2-Dibromoethane (EDB)	5.0	Not Detected	38	Not Detected
Chlorobenzene	5.0	Not Detected	23	Not Detected
Ethyl Benzene	5.0	Not Detected	22	Not Detected
m,p-Xylene	5.0	Not Detected	22	Not Detected
o-Xylene	5.0	Not Detected	22	Not Detected
Styrene	5.0	Not Detected	21	Not Detected
Bromoform	5.0	Not Detected	52	Not Detected
Cumene	5.0	Not Detected	24	Not Detected
1,1,2,2-Tetrachloroethane	5.0	Not Detected	34	Not Detected
Propylbenzene	5.0	Not Detected	24	Not Detected
4-Ethyltoluene	5.0	Not Detected	24	Not Detected
1,3,5-Trimethylbenzene	5.0	Not Detected	24	Not Detected
1,2,4-Trimethylbenzene	5.0	Not Detected	24	Not Detected
1,3-Dichlorobenzene	5.0	Not Detected	30	Not Detected
1,4-Dichlorobenzene	5.0	Not Detected	30	Not Detected
alpha-Chlorotoluene	5.0	Not Detected	26	Not Detected
1,2-Dichlorobenzene	5.0	Not Detected	30	Not Detected
1,2,4-Trichlorobenzene	20	Not Detected	150	Not Detected
Hexachlorobutadiene	20	Not Detected	210	Not Detected

Container Type: NA - Not Applicable

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



Air Toxics

Client Sample ID: CCV

Lab ID#: 1710233A-18A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101606	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/16/17 12:18 PM

Compound	%Recovery
Freon 12	105
Freon 114	93
Chloromethane	119
Vinyl Chloride	118
1,3-Butadiene	118
Bromomethane	109
Chloroethane	117
Freon 11	98
Ethanol	115
Freon 113	88
1,1-Dichloroethene	101
Acetone	104
2-Propanol	120
Carbon Disulfide	114
3-Chloropropene	110
Methylene Chloride	125
Methyl tert-butyl ether	109
trans-1,2-Dichloroethene	110
Hexane	118
1,1-Dichloroethane	123
2-Butanone (Methyl Ethyl Ketone)	115
cis-1,2-Dichloroethene	109
Tetrahydrofuran	123
Chloroform	112
1,1,1-Trichloroethane	104
Cyclohexane	110
Carbon Tetrachloride	94
2,2,4-Trimethylpentane	120
Benzene	118
1,2-Dichloroethane	122
Heptane	119
Trichloroethene	106
1,2-Dichloropropane	130
1,4-Dioxane	109
Bromodichloromethane	114
cis-1,3-Dichloropropene	114
4-Methyl-2-pentanone	120
Toluene	110
trans-1,3-Dichloropropene	118
1,1,2-Trichloroethane	109
Tetrachloroethene	94
2-Hexanone	122

Client Sample ID: CCV

Lab ID#: 1710233A-18A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101606	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/16/17 12:18 PM

Compound	%Recovery
Dibromochloromethane	99
1,2-Dibromoethane (EDB)	105
Chlorobenzene	100
Ethyl Benzene	102
m,p-Xylene	103
o-Xylene	103
Styrene	118
Bromoform	97
Cumene	104
1,1,2,2-Tetrachloroethane	118
Propylbenzene	107
4-Ethyltoluene	102
1,3,5-Trimethylbenzene	104
1,2,4-Trimethylbenzene	100
1,3-Dichlorobenzene	97
1,4-Dichlorobenzene	96
alpha-Chlorotoluene	115
1,2-Dichlorobenzene	98
1,2,4-Trichlorobenzene	96
Hexachlorobutadiene	98

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	106	70-130
1,2-Dichloroethane-d4	117	70-130
4-Bromofluorobenzene	91	70-130

Client Sample ID: CCV

Lab ID#: 1710233A-18B

EPA METHOD TO-15 GC/MS

File Name:	14101602	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/16/17 07:58 AM

Compound	%Recovery
Freon 12	89
Freon 114	104
Chloromethane	103
Vinyl Chloride	103
1,3-Butadiene	115
Bromomethane	103
Chloroethane	113
Freon 11	118
Ethanol	134 Q
Freon 113	110
1,1-Dichloroethene	110
Acetone	117
2-Propanol	129
Carbon Disulfide	98
3-Chloropropene	134 Q
Methylene Chloride	101
Methyl tert-butyl ether	114
trans-1,2-Dichloroethene	102
Hexane	113
1,1-Dichloroethane	109
2-Butanone (Methyl Ethyl Ketone)	115
cis-1,2-Dichloroethene	109
Tetrahydrofuran	115
Chloroform	111
1,1,1-Trichloroethane	106
Cyclohexane	113
Carbon Tetrachloride	110
2,2,4-Trimethylpentane	101
Benzene	105
1,2-Dichloroethane	97
Heptane	88
Trichloroethene	101
1,2-Dichloropropane	90
1,4-Dioxane	110
Bromodichloromethane	100
cis-1,3-Dichloropropene	104
4-Methyl-2-pentanone	86
Toluene	101
trans-1,3-Dichloropropene	105
1,1,2-Trichloroethane	91
Tetrachloroethene	103
2-Hexanone	103

Client Sample ID: CCV

Lab ID#: 1710233A-18B

EPA METHOD TO-15 GC/MS

File Name:	14101602	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/16/17 07:58 AM

Compound	%Recovery
Dibromochloromethane	106
1,2-Dibromoethane (EDB)	108
Chlorobenzene	99
Ethyl Benzene	106
m,p-Xylene	104
o-Xylene	103
Styrene	106
Bromoform	98
Cumene	106
1,1,2,2-Tetrachloroethane	95
Propylbenzene	105
4-Ethyltoluene	102
1,3,5-Trimethylbenzene	98
1,2,4-Trimethylbenzene	108
1,3-Dichlorobenzene	99
1,4-Dichlorobenzene	104
alpha-Chlorotoluene	103
1,2-Dichlorobenzene	100
1,2,4-Trichlorobenzene	82
Hexachlorobutadiene	107

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	107	70-130

Client Sample ID: LCS

Lab ID#: 1710233A-19A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101607	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/16/17 12:45 PM

Compound	%Recovery	Method Limits
Freon 12	112	70-130
Freon 114	101	70-130
Chloromethane	126	70-130
Vinyl Chloride	125	70-130
1,3-Butadiene	123	70-130
Bromomethane	114	70-130
Chloroethane	126	70-130
Freon 11	104	70-130
Ethanol	128	70-130
Freon 113	90	70-130
1,1-Dichloroethene	104	70-130
Acetone	105	70-130
2-Propanol	128	70-130
Carbon Disulfide	104	70-130
3-Chloropropene	108	70-130
Methylene Chloride	128	70-130
Methyl tert-butyl ether	110	70-130
trans-1,2-Dichloroethene	97	70-130
Hexane	122	70-130
1,1-Dichloroethane	126	70-130
2-Butanone (Methyl Ethyl Ketone)	114	70-130
cis-1,2-Dichloroethene	124	70-130
Tetrahydrofuran	122	70-130
Chloroform	116	70-130
1,1,1-Trichloroethane	106	70-130
Cyclohexane	115	70-130
Carbon Tetrachloride	97	70-130
2,2,4-Trimethylpentane	123	70-130
Benzene	121	70-130
1,2-Dichloroethane	124	70-130
Heptane	121	70-130
Trichloroethene	110	70-130
1,2-Dichloropropane	134 Q	70-130
1,4-Dioxane	107	70-130
Bromodichloromethane	118	70-130
cis-1,3-Dichloropropene	112	70-130
4-Methyl-2-pentanone	121	70-130
Toluene	112	70-130
trans-1,3-Dichloropropene	119	70-130
1,1,2-Trichloroethane	112	70-130
Tetrachloroethene	96	70-130
2-Hexanone	124	70-130

Client Sample ID: LCS

Lab ID#: 1710233A-19A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101607	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/16/17 12:45 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	102	70-130
1,2-Dibromoethane (EDB)	108	70-130
Chlorobenzene	101	70-130
Ethyl Benzene	103	70-130
m,p-Xylene	106	70-130
o-Xylene	106	70-130
Styrene	122	70-130
Bromoform	101	70-130
Cumene	105	70-130
1,1,2,2-Tetrachloroethane	121	70-130
Propylbenzene	112	70-130
4-Ethyltoluene	106	70-130
1,3,5-Trimethylbenzene	105	70-130
1,2,4-Trimethylbenzene	102	70-130
1,3-Dichlorobenzene	99	70-130
1,4-Dichlorobenzene	98	70-130
alpha-Chlorotoluene	120	70-130
1,2-Dichlorobenzene	100	70-130
1,2,4-Trichlorobenzene	102	70-130
Hexachlorobutadiene	104	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	106	70-130
1,2-Dichloroethane-d4	116	70-130
4-Bromofluorobenzene	91	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1710233A-19AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101608	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/16/17 01:12 PM

Compound	%Recovery	Method Limits
Freon 12	113	70-130
Freon 114	101	70-130
Chloromethane	123	70-130
Vinyl Chloride	126	70-130
1,3-Butadiene	122	70-130
Bromomethane	115	70-130
Chloroethane	126	70-130
Freon 11	104	70-130
Ethanol	128	70-130
Freon 113	90	70-130
1,1-Dichloroethene	104	70-130
Acetone	106	70-130
2-Propanol	130	70-130
Carbon Disulfide	105	70-130
3-Chloropropene	109	70-130
Methylene Chloride	129	70-130
Methyl tert-butyl ether	109	70-130
trans-1,2-Dichloroethene	98	70-130
Hexane	123	70-130
1,1-Dichloroethane	128	70-130
2-Butanone (Methyl Ethyl Ketone)	114	70-130
cis-1,2-Dichloroethene	125	70-130
Tetrahydrofuran	125	70-130
Chloroform	117	70-130
1,1,1-Trichloroethane	106	70-130
Cyclohexane	116	70-130
Carbon Tetrachloride	97	70-130
2,2,4-Trimethylpentane	125	70-130
Benzene	120	70-130
1,2-Dichloroethane	122	70-130
Heptane	119	70-130
Trichloroethene	108	70-130
1,2-Dichloropropane	130	70-130
1,4-Dioxane	106	70-130
Bromodichloromethane	117	70-130
cis-1,3-Dichloropropene	110	70-130
4-Methyl-2-pentanone	119	70-130
Toluene	110	70-130
trans-1,3-Dichloropropene	119	70-130
1,1,2-Trichloroethane	112	70-130
Tetrachloroethene	97	70-130
2-Hexanone	123	70-130

Client Sample ID: LCSD

Lab ID#: 1710233A-19AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17101608	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/16/17 01:12 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	103	70-130
1,2-Dibromoethane (EDB)	108	70-130
Chlorobenzene	102	70-130
Ethyl Benzene	104	70-130
m,p-Xylene	105	70-130
o-Xylene	106	70-130
Styrene	122	70-130
Bromoform	100	70-130
Cumene	106	70-130
1,1,2,2-Tetrachloroethane	120	70-130
Propylbenzene	111	70-130
4-Ethyltoluene	104	70-130
1,3,5-Trimethylbenzene	106	70-130
1,2,4-Trimethylbenzene	102	70-130
1,3-Dichlorobenzene	99	70-130
1,4-Dichlorobenzene	98	70-130
alpha-Chlorotoluene	122	70-130
1,2-Dichlorobenzene	100	70-130
1,2,4-Trichlorobenzene	103	70-130
Hexachlorobutadiene	105	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	117	70-130
4-Bromofluorobenzene	92	70-130

Client Sample ID: LCS

Lab ID#: 1710233A-19B

EPA METHOD TO-15 GC/MS

File Name:	14101603	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/16/17 08:31 AM

Compound	%Recovery	Method Limits
Freon 12	92	70-130
Freon 114	108	70-130
Chloromethane	96	70-130
Vinyl Chloride	108	70-130
1,3-Butadiene	115	70-130
Bromomethane	102	70-130
Chloroethane	116	70-130
Freon 11	116	70-130
Ethanol	119	70-130
Freon 113	110	70-130
1,1-Dichloroethene	112	70-130
Acetone	114	70-130
2-Propanol	131 Q	70-130
Carbon Disulfide	88	70-130
3-Chloropropene	110	70-130
Methylene Chloride	108	70-130
Methyl tert-butyl ether	112	70-130
trans-1,2-Dichloroethene	84	70-130
Hexane	110	70-130
1,1-Dichloroethane	106	70-130
2-Butanone (Methyl Ethyl Ketone)	113	70-130
cis-1,2-Dichloroethene	114	70-130
Tetrahydrofuran	101	70-130
Chloroform	111	70-130
1,1,1-Trichloroethane	108	70-130
Cyclohexane	113	70-130
Carbon Tetrachloride	106	70-130
2,2,4-Trimethylpentane	104	70-130
Benzene	109	70-130
1,2-Dichloroethane	97	70-130
Heptane	96	70-130
Trichloroethene	114	70-130
1,2-Dichloropropane	92	70-130
1,4-Dioxane	123	70-130
Bromodichloromethane	107	70-130
cis-1,3-Dichloropropene	103	70-130
4-Methyl-2-pentanone	101	70-130
Toluene	103	70-130
trans-1,3-Dichloropropene	102	70-130
1,1,2-Trichloroethane	97	70-130
Tetrachloroethene	110	70-130
2-Hexanone	110	70-130

Client Sample ID: LCS

Lab ID#: 1710233A-19B

EPA METHOD TO-15 GC/MS

File Name:	14101603	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/16/17 08:31 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	115	70-130
1,2-Dibromoethane (EDB)	113	70-130
Chlorobenzene	105	70-130
Ethyl Benzene	116	70-130
m,p-Xylene	110	70-130
o-Xylene	112	70-130
Styrene	112	70-130
Bromoform	108	70-130
Cumene	111	70-130
1,1,2,2-Tetrachloroethane	106	70-130
Propylbenzene	110	70-130
4-Ethyltoluene	106	70-130
1,3,5-Trimethylbenzene	105	70-130
1,2,4-Trimethylbenzene	119	70-130
1,3-Dichlorobenzene	107	70-130
1,4-Dichlorobenzene	112	70-130
alpha-Chlorotoluene	120	70-130
1,2-Dichlorobenzene	111	70-130
1,2,4-Trichlorobenzene	89	70-130
Hexachlorobutadiene	109	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	108	70-130



Air Toxics

Client Sample ID: LCS D

Lab ID#: 1710233A-19BB

EPA METHOD TO-15 GC/MS

File Name:	14101604	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/16/17 08:59 AM

Compound	%Recovery	Method Limits
Freon 12	90	70-130
Freon 114	112	70-130
Chloromethane	95	70-130
Vinyl Chloride	110	70-130
1,3-Butadiene	116	70-130
Bromomethane	98	70-130
Chloroethane	96	70-130
Freon 11	119	70-130
Ethanol	145 Q	70-130
Freon 113	114	70-130
1,1-Dichloroethene	111	70-130
Acetone	115	70-130
2-Propanol	124	70-130
Carbon Disulfide	92	70-130
3-Chloropropene	114	70-130
Methylene Chloride	114	70-130
Methyl tert-butyl ether	109	70-130
trans-1,2-Dichloroethene	80	70-130
Hexane	114	70-130
1,1-Dichloroethane	101	70-130
2-Butanone (Methyl Ethyl Ketone)	118	70-130
cis-1,2-Dichloroethene	116	70-130
Tetrahydrofuran	103	70-130
Chloroform	109	70-130
1,1,1-Trichloroethane	108	70-130
Cyclohexane	109	70-130
Carbon Tetrachloride	106	70-130
2,2,4-Trimethylpentane	102	70-130
Benzene	103	70-130
1,2-Dichloroethane	98	70-130
Heptane	97	70-130
Trichloroethene	104	70-130
1,2-Dichloropropane	91	70-130
1,4-Dioxane	119	70-130
Bromodichloromethane	104	70-130
cis-1,3-Dichloropropene	92	70-130
4-Methyl-2-pentanone	100	70-130
Toluene	100	70-130
trans-1,3-Dichloropropene	112	70-130
1,1,2-Trichloroethane	98	70-130
Tetrachloroethene	110	70-130
2-Hexanone	103	70-130

Client Sample ID: LCSD

Lab ID#: 1710233A-19BB

EPA METHOD TO-15 GC/MS

File Name:	14101604	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/16/17 08:59 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	108	70-130
1,2-Dibromoethane (EDB)	110	70-130
Chlorobenzene	99	70-130
Ethyl Benzene	101	70-130
m,p-Xylene	105	70-130
o-Xylene	110	70-130
Styrene	110	70-130
Bromoform	108	70-130
Cumene	108	70-130
1,1,2,2-Tetrachloroethane	104	70-130
Propylbenzene	109	70-130
4-Ethyltoluene	105	70-130
1,3,5-Trimethylbenzene	98	70-130
1,2,4-Trimethylbenzene	112	70-130
1,3-Dichlorobenzene	103	70-130
1,4-Dichlorobenzene	107	70-130
alpha-Chlorotoluene	117	70-130
1,2-Dichlorobenzene	109	70-130
1,2,4-Trichlorobenzene	95	70-130
Hexachlorobutadiene	110	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	106	70-130



Air Toxics

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Project Info: P.O. # <u>0222052.020.021</u> Project # <u>0222052.020.021</u> Project Name <u>TECT Phase II</u>	Turn Around Time: <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush <small>specify</small>	<small>Lab Use Only</small> Pressurized by: Date: Pressurization Gas: N ₂ He
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Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum			
						Initial	Final	Receipt	Final (psi)
01A	LAI-19	1L2309	10/4/17	1424	TO-15 & H ₂ S (ASTM-D1942)	>30	5		
02A	LAI-17	1L2952	10/4/17	1455		30	5		
03A	LAI-18	1L2376	10/4/17	1526		27.5	5		
04A	LAI-22	01029	10/4/17	1547		29.5	5		
05A	LAI-21	000001363	10/4/17	1612		30	5		
06A	LAI-16	3742	10/4/17	1705		29	5		
07A	LAI-15	1L1533	10/4/17	1729		>30	5		
08A	LAI-14	1L1676	10/4/17	1752		26	5		
09A	LAI-13	1L2989	10/4/17	1817		>30	5		
10A	LAI-20	12042	10/4/17	1638		29.5	5		

Relinquished by: (signature) <u>SA</u> Date/Time <u>10/4/17 @ 1400</u>	Received by: (signature) <u>Andrea Augustin EATL</u> Date/Time <u>10/11/17 025</u>	Notes:
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEx		NA	Good	Yes No <u>None</u>	1710233



Air Toxics

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

Project Manager Kathryn Hartley
 Collected by: (Print and Sign) Stephanie Remando
 Company Landaw Associates Email KHartley@landawinc.com
 Address 130 2nd Ave S City Edmonds State WA Zip 98020
 Phone (425) 778-0907 Fax N/A

Project Info: P.O. # <u>00222052.020.021</u> Project # <u>0222052.020.021</u> Project Name <u>TECT Phase 2</u>	Turn Around Time: <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush <small>specify</small>	<small>Lab Use Only</small> Pressurized by: Date: Pressurization Gas: N ₂ He
	<small>specify</small>	

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum			
						Initial	Final	Receipt	Final (psi)
11A	LAI-23	1L2849	10/6/17	1115	T0-15 He (ASTM - D1946)	28.5	5		
12A	LAI-26	20004	10/6/17	1312	↓	26.5	5		
13A	LAI-25	1L1536	10/6/17	1340		26.5	5		
14A	LAI-28	1L2011	10/6/17	1147		28	5		
15A	LAI-24	1L3060	10/6/17	1406		30	5		
16A	LAI-27	1L2922	10/6/17	1439		>30	5		

Relinquished by: (signature) <u>SA</u> Date/Time <u>10/9/17 @ 1400</u>	Received by: (signature) <u>Andrea Augusti</u> Date/Time <u>10/11/17 1025</u>	Notes:
Relinquished by: (signature)	Received by: (signature)	
Relinquished by: (signature)	Received by: (signature)	

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fed Ex		N/A	Good	Yes No <u>(None)</u>	1710233

10/24/2017

Ms. Kathryn Hartley
Landau Associates, Inc.
130 2nd Avenue South

Edmonds WA 98020

Project Name: TECT Phase II

Project #: 0222052.020.021

Workorder #: 1710233B

Dear Ms. Kathryn Hartley

The following report includes the data for the above referenced project for sample(s) received on 10/11/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1946 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

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

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1710233B

Work Order Summary

CLIENT: Ms. Kathryn Hartley
Landau Associates, Inc.
130 2nd Avenue South
Edmonds, WA 98020

BILL TO: Ms. Kathryn Hartley
Landau Associates, Inc.
130 2nd Avenue South
Edmonds, WA 98020

PHONE: 425-329-0268
FAX: 425-778-6409
DATE RECEIVED: 10/11/2017
DATE COMPLETED: 10/24/2017

P.O. # 0222052.020.021
PROJECT # 0222052.020.021 TECT Phase II
CONTACT: Kelly Buettner

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	LAI-19	Modified ASTM D-1946	4.0 "Hg	15 psi
02A	LAI-17	Modified ASTM D-1946	3.5 "Hg	15 psi
03A	LAI-18	Modified ASTM D-1946	3.5 "Hg	15 psi
04A	LAI-22	Modified ASTM D-1946	2.5 "Hg	15 psi
05A	LAI-21	Modified ASTM D-1946	3.5 "Hg	15 psi
06A	LAI-16	Modified ASTM D-1946	3.0 "Hg	15 psi
07A	LAI-15	Modified ASTM D-1946	4.0 "Hg	15 psi
08A	LAI-14	Modified ASTM D-1946	5.0 "Hg	15 psi
09A	LAI-13	Modified ASTM D-1946	5.0 "Hg	15 psi
10A	LAI-20	Modified ASTM D-1946	4.5 "Hg	15 psi
11A	LAI-23	Modified ASTM D-1946	4.5 "Hg	15 psi
12A	LAI-26	Modified ASTM D-1946	4.5 "Hg	15 psi
13A	LAI-25	Modified ASTM D-1946	4.0 "Hg	15 psi
14A	LAI-28	Modified ASTM D-1946	4.5 "Hg	15 psi
15A	LAI-24	Modified ASTM D-1946	3.5 "Hg	15 psi
16A	LAI-27	Modified ASTM D-1946	2.8 "Hg	15 psi
17A	Lab Blank	Modified ASTM D-1946	NA	NA
17B	Lab Blank	Modified ASTM D-1946	NA	NA
18A	LCS	Modified ASTM D-1946	NA	NA
18AA	LCS	Modified ASTM D-1946	NA	NA
18B	LCS	Modified ASTM D-1946	NA	NA
18BB	LCS	Modified ASTM D-1946	NA	NA

CERTIFIED BY: 

DATE: 10/24/17

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.

Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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LABORATORY NARRATIVE
Modified ASTM D-1946
Landau Associates, Inc.
Workorder# 1710233B

Sixteen 1 Liter Summa Canister samples were received on October 11, 2017. The laboratory performed analysis via Modified ASTM Method D-1946 for Helium in air using GC/TCD. The method involves direct injection of 1.0 mL of sample.

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

<i>Requirement</i>	<i>ASTM D-1946</i>	<i>ATL Modifications</i>
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A minimum of 5-point calibration curve is performed. Quantitation is based on average Response Factor.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a $\geq 95\%$ accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections $> 5 \times$ the RL.

Receiving Notes

The Chain of Custody (COC) information for sample LAI-16 did not match the information on the canister with regard to canister identification. The client was notified of the discrepancy and the information on the canister was used to process and report the sample.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit.

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the detection limit.

M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: LAI-19

Lab ID#: 1710233B-01A

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.12	1.2

Client Sample ID: LAI-17

Lab ID#: 1710233B-02A

No Detections Were Found.

Client Sample ID: LAI-18

Lab ID#: 1710233B-03A

No Detections Were Found.

Client Sample ID: LAI-22

Lab ID#: 1710233B-04A

No Detections Were Found.

Client Sample ID: LAI-21

Lab ID#: 1710233B-05A

No Detections Were Found.

Client Sample ID: LAI-16

Lab ID#: 1710233B-06A

No Detections Were Found.

Client Sample ID: LAI-15

Lab ID#: 1710233B-07A

No Detections Were Found.

Client Sample ID: LAI-14

Lab ID#: 1710233B-08A

No Detections Were Found.

Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: LAI-13

Lab ID#: 1710233B-09A

No Detections Were Found.

Client Sample ID: LAI-20

Lab ID#: 1710233B-10A

No Detections Were Found.

Client Sample ID: LAI-23

Lab ID#: 1710233B-11A

No Detections Were Found.

Client Sample ID: LAI-26

Lab ID#: 1710233B-12A

No Detections Were Found.

Client Sample ID: LAI-25

Lab ID#: 1710233B-13A

No Detections Were Found.

Client Sample ID: LAI-28

Lab ID#: 1710233B-14A

No Detections Were Found.

Client Sample ID: LAI-24

Lab ID#: 1710233B-15A

No Detections Were Found.

Client Sample ID: LAI-27

Lab ID#: 1710233B-16A

No Detections Were Found.



Air Toxics

Client Sample ID: LAI-19

Lab ID#: 1710233B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101404c	Date of Collection:	10/4/17 2:24:00 PM
Dil. Factor:	2.33	Date of Analysis:	10/14/17 08:52 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.12	1.2

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LAI-17

Lab ID#: 1710233B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101405c	Date of Collection:	10/4/17 2:55:00 PM
Dil. Factor:	2.29	Date of Analysis:	10/14/17 09:18 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.11	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LAI-18

Lab ID#: 1710233B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101406c	Date of Collection:	10/4/17 3:26:00 PM
Dil. Factor:	2.29	Date of Analysis:	10/14/17 09:52 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.11	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LAI-22

Lab ID#: 1710233B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101407c	Date of Collection:	10/4/17 3:47:00 PM
Dil. Factor:	2.20	Date of Analysis:	10/14/17 10:18 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.11	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LAI-21

Lab ID#: 1710233B-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101408c	Date of Collection:	10/4/17 4:12:00 PM
Dil. Factor:	2.29	Date of Analysis:	10/14/17 10:45 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.11	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LAI-16

Lab ID#: 1710233B-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101409c	Date of Collection:	10/4/17 5:05:00 PM
Dil. Factor:	2.24	Date of Analysis:	10/14/17 11:12 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.11	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LAI-15

Lab ID#: 1710233B-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101410c	Date of Collection:	10/4/17 5:29:00 PM
Dil. Factor:	2.33	Date of Analysis:	10/14/17 11:38 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LAI-14

Lab ID#: 1710233B-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101411c	Date of Collection:	10/4/17 5:52:00 PM
Dil. Factor:	2.42	Date of Analysis:	10/14/17 12:03 PM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LAI-13

Lab ID#: 1710233B-09A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101412c	Date of Collection:	10/4/17 6:17:00 PM
Dil. Factor:	2.42	Date of Analysis:	10/14/17 12:38 PM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LAI-20

Lab ID#: 1710233B-10A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101413c	Date of Collection:	10/4/17 4:38:00 PM
Dil. Factor:	2.38	Date of Analysis:	10/14/17 01:03 PM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LAI-23

Lab ID#: 1710233B-11A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101414c	Date of Collection:	10/6/17 11:15:00 AM
Dil. Factor:	2.38	Date of Analysis:	10/14/17 01:28 PM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LAI-26

Lab ID#: 1710233B-12A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101415c	Date of Collection:	10/6/17 1:12:00 PM
Dil. Factor:	2.38	Date of Analysis:	10/14/17 01:52 PM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LAI-25

Lab ID#: 1710233B-13A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101606c	Date of Collection:	10/6/17 1:40:00 PM
Dil. Factor:	2.33	Date of Analysis:	10/16/17 10:51 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LAI-28

Lab ID#: 1710233B-14A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101607c	Date of Collection:	10/6/17 11:47:00 AM
Dil. Factor:	2.38	Date of Analysis:	10/16/17 11:25 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LAI-24

Lab ID#: 1710233B-15A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101615c	Date of Collection:	10/6/17 2:06:00 PM
Dil. Factor:	5.24	Date of Analysis:	10/16/17 02:50 PM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.26	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: LAI-27

Lab ID#: 1710233B-16A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101608c	Date of Collection:	10/6/17 2:39:00 PM
Dil. Factor:	2.23	Date of Analysis:	10/16/17 11:51 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.11	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1710233B-17A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101403c	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/14/17 08:22 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.050	Not Detected

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1710233B-17B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101604c	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/16/17 10:00 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.050	Not Detected

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCS

Lab ID#: 1710233B-18A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101402c	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/14/17 07:54 AM

Compound	%Recovery	Method Limits
Helium	101	85-115

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1710233B-18AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101416c	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/14/17 02:16 PM

Compound	%Recovery	Method Limits
Helium	102	85-115

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCS

Lab ID#: 1710233B-18B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101602c	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/16/17 09:10 AM

Compound	%Recovery	Method Limits
Helium	100	85-115

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1710233B-18BB

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10101603c	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/16/17 09:35 AM

Compound	%Recovery	Method Limits
Helium	101	85-115

Container Type: NA - Not Applicable



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Page 1 of 2

Project Manager Kathryn Hartley
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 Phone (425) 778-0907 Fax N/A

Project Info: P.O. # <u>0222052.020.021</u> Project # <u>0222052.020.021</u> Project Name <u>TECT Phase II</u>	Turn Around Time: <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush <small>specify</small>	<small>Lab Use Only</small> Pressurized by: Date: Pressurization Gas: N ₂ He
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Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum			
						Initial	Final	Receipt	Final (psi)
01A	LAI-19	1L2309	10/4/17	1424	TO-15 & H ₂ S (ASTM-D1942)	>30	5		
02A	LAI-17	1L2952	10/4/17	1455		30	5		
03A	LAI-18	1L2376	10/4/17	1526		27.5	5		
04A	LAI-22	01029	10/4/17	1547		29.5	5		
05A	LAI-21	000001363	10/4/17	1612		30	5		
06A	LAI-16	3742	10/4/17	1705		29	5		
07A	LAI-15	1L1533	10/4/17	1729		>30	5		
08A	LAI-14	1L1676	10/4/17	1752		26	5		
09A	LAI-13	1L2989	10/4/17	1817		>30	5		
10A	LAI-20	12042	10/4/17	1638		29.5	5		

Relinquished by: (signature) <u>SA</u> Date/Time <u>10/4/17 @ 1400</u>	Received by: (signature) <u>Andrea Augustin EATL</u> Date/Time <u>10/11/17 0825</u>	Notes:
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEx		NA	Good	Yes No <u>None</u>	1710233



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Project Manager Kathryn Hartley
 Collected by: (Print and Sign) Stephanie Remando
 Company Landaw Associates Email KHartley@landawinc.com
 Address 130 2nd Ave S City Edmonds State WA Zip 98020
 Phone (425) 778-0907 Fax N/A

Project Info: P.O. # <u>00222052.020.021</u> Project # <u>0222052.020.021</u> Project Name <u>TECT Phase 2</u>	Turn Around Time: <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush <small>specify</small>	<small>Lab Use Only</small> Pressurized by: Date: Pressurization Gas: N ₂ He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum			
						Initial	Final	Receipt	Final (psi)
11A	LAI-23	1L2849	10/6/17	1115	TO-15 He (ASTM - D1946)	28.5	5		
12A	LAI-26	20004	10/6/17	1312	↓	26.5	5		
13A	LAI-25	1L1536	10/6/17	1340		26.5	5		
14A	LAI-28	1L2011	10/6/17	1147		28	5		
15A	LAI-24	1L3060	10/6/17	1406		30	5		
16A	LAI-27	1L2922	10/6/17	1439		>30	5		

Relinquished by: (signature) <u>SA</u> Date/Time <u>10/9/17 @ 1400</u>	Received by: (signature) <u>Andrea Augusti</u> Date/Time <u>10/11/17 1025</u>	Notes:
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fed Ex		N/A	Good	Yes No <u>(None)</u>	1710233

12/19/2017

Ms. Kathryn Hartley
Landau Associates, Inc.
130 2nd Avenue South

Edmonds WA 98020

Project Name: TECT
Project #: 222052
Workorder #: 1712216

Dear Ms. Kathryn Hartley

The following report includes the data for the above referenced project for sample(s) received on 12/12/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Passive S.E. RAD130/SKC are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

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

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1712216

Work Order Summary

CLIENT:	Ms. Kathryn Hartley Landau Associates, Inc. 130 2nd Avenue South Edmonds, WA 98020	BILL TO:	Ms. Kathryn Hartley Landau Associates, Inc. 130 2nd Avenue South Edmonds, WA 98020
PHONE:	425-329-0268	P.O. #	
FAX:	425-778-6409	PROJECT #	222052 TECT
DATE RECEIVED:	12/12/2017	CONTACT:	Kelly Buettner
DATE COMPLETED:	12/19/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
01A	IAR05-C23-171211	Passive S.E. RAD130/SKC
02A	IAR04-C23-171211	Passive S.E. RAD130/SKC
03A	IAR03-C23-171211	Passive S.E. RAD130/SKC
04A	IAR06-C23-171211	Passive S.E. RAD130/SKC
05A	IAR01-C23-171211	Passive S.E. RAD130/SKC
06A	IAR02-C23-171211	Passive S.E. RAD130/SKC
07A(on hold)	IARTRP-171211	Passive S.E. RAD130/SKC
08A	Lab Blank	Passive S.E. RAD130/SKC
09A	LCS	Passive S.E. RAD130/SKC
09AA	LCSD	Passive S.E. RAD130/SKC

CERTIFIED BY: 
 Technical Director

DATE: 12/19/17

LABORATORY NARRATIVE
RAD130 Passive SE by Mod EPA TO-17
Landau Associates, Inc.
Workorder# 1712216

Seven Radiello 130 (Solvent) samples were received on December 12, 2017. The laboratory analyzed the charcoal sorbent bed of the passive sampler following modified method EPA TO-17. The VOCs were chemically extracted using carbon disulfide and an aliquot of the extract was injected into a GC/MS for identification and quantification of volatile organic compounds (VOCs).

The mass of each target compound adsorbed by the sampler was converted to units of concentration using the sample deployment time and the sampling rate for each VOC. If sampling rates were calculated by the lab or the manufacturer, the concentration result has been flagged as an estimated value. Results are not corrected for desorption efficiency.

The reference method used for this procedure is EPA TO-17, which describes the collection of VOCs in ambient air using sorbents and analysis by GC/MS. Because TO-17 describes active sample collection using a pump and thermal desorption as the preparation step, several modifications are required. Modifications to TO-17 are listed in the table below:

<i>Requirement</i>	<i>TO-17</i>	<i>ATL Modifications</i>
Sample Collection	Pump pulls measured air volume through sorbent tube	VOCs in air adsorbed onto sorbent bed passively through diffusion
Sample Preparation	Thermal extraction	Solvent extraction
Sorbent tube conditioning	Condition newly packed tubes prior to use	Charcoal-based sorbent is a single use media and conditioning is conducted by vendor.
Instrumentation	Thermal desorption introduction system	Liquid injection introduction system
Internal Standard	Gas-phase internal standard introduced on the tube or focusing trap during analysis	Liquid-phase internal standard introduced on the tube at the time of extraction
Media and sample storage	<4 deg C, 30 days	Media shelf life is determined by vendor; sample hold-time is 6 months for the RAD130 and WMS. Sample preservation requirements are storage in a cool, solvent-free refrigerator and optional use of ice during shipping.
Internal Standard Recovery	+/-40% of daily CCV area	-50% to +100% of daily CCV area

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The uptake rates were corrected based on average field temperatures if provided. In the absence of field temperatures, the uptake rates determined at 25 deg C were used.

To calculate ug/m³ concentrations in the Lab Blank, a sampling duration of 30382 minutes was applied. The assumed temperature used for the uptake rate is listed on the data page. If the field temperatures were provided, the rate was adjusted in the same manner as the field samples.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

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

N - The identification is based on presumptive evidence.

C - Estimated concentration due to calculated sampling rate

CN - See case narrative explanation.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds VOCS BY PASSIVE SAMPLER - GC/MS

Client Sample ID: IAR05-C23-171211

Lab ID#: 1712216-01A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	2.0	0.96

Client Sample ID: IAR04-C23-171211

Lab ID#: 1712216-02A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	3.6	1.7

Client Sample ID: IAR03-C23-171211

Lab ID#: 1712216-03A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	1.1	0.55

Client Sample ID: IAR06-C23-171211

Lab ID#: 1712216-04A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	0.88	0.42

Client Sample ID: IAR01-C23-171211

Lab ID#: 1712216-05A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	1.0	0.50

Client Sample ID: IAR02-C23-171211

Lab ID#: 1712216-06A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	0.84	0.40



Air Toxics

Client Sample ID: IAR05-C23-171211

Lab ID#: 1712216-01A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10121319sim	Date of Collection:	12/11/17 11:10:00 A
Dil. Factor:	1.00	Date of Analysis:	12/13/17 03:25 PM
		Date of Extraction:	12/13/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	2.0	0.96

Temperature = 77.0F , duration time = 30342 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130



Air Toxics

Client Sample ID: IAR04-C23-171211

Lab ID#: 1712216-02A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10121320sim	Date of Collection:	12/11/17 11:20:00 A
Dil. Factor:	1.00	Date of Analysis:	12/13/17 03:50 PM
		Date of Extraction:	12/13/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	3.6	1.7

Temperature = 77.0F , duration time = 30354 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130



Air Toxics

Client Sample ID: IAR03-C23-171211

Lab ID#: 1712216-03A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10121321sim	Date of Collection:	12/11/17 11:23:00 A
Dil. Factor:	1.00	Date of Analysis:	12/13/17 04:15 PM
		Date of Extraction:	12/13/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	1.1	0.55

Temperature = 77.0F , duration time = 30359 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130



Air Toxics

Client Sample ID: IAR06-C23-171211

Lab ID#: 1712216-04A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10121322sim	Date of Collection:	12/11/17 11:30:00 A
Dil. Factor:	1.00	Date of Analysis:	12/13/17 04:40 PM
		Date of Extraction:	12/13/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	0.88	0.42

Temperature = 77.0F , duration time = 30367 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130



Air Toxics

Client Sample ID: IAR01-C23-171211

Lab ID#: 1712216-05A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10121323sim	Date of Collection:	12/11/17 11:37:00 A
Dil. Factor:	1.00	Date of Analysis:	12/13/17 05:04 PM
		Date of Extraction:	12/13/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	1.0	0.50

Temperature = 77.0F , duration time = 30376 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130



Air Toxics

Client Sample ID: IAR02-C23-171211

Lab ID#: 1712216-06A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10121324sim	Date of Collection:	12/11/17 11:42:00 A
Dil. Factor:	1.00	Date of Analysis:	12/13/17 05:29 PM
		Date of Extraction:	12/13/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	0.84	0.40

Temperature = 77.0F , duration time = 30382 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1712216-08A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10121309sim	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/13/17 11:16 AM
		Date of Extraction:	12/13/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	Not Detected	Not Detected

Temperature = 77.0F , duration time = 30382 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1712216-09A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10121307sim	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/13/17 10:26 AM
		Date of Extraction:	12/13/17

Compound	%Recovery	Method Limits
Trichloroethene	83	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	106	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1712216-09AA

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10121308sim	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/13/17 10:51 AM
		Date of Extraction:	12/13/17

Compound	%Recovery	Method Limits
Trichloroethene	84	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130



Air Toxics

Passive Sorbent Chain of Custody

WO#: **1712216**

Case Seal #: _____

Company: LAI Project #: 222052 P.O.# _____
 Project Manager: Jan Wynkoop Project Name: TECT
 Contact phone/email: _____ Collected by: LJR

Lab ID	Sample Identification	Sampler ID	Date of Deployment (mm/dd/yy)	Time of Deployment (hr:min)	Date of Retrieval (mm/dd/yy)	Time of Retrieval (hr:min)	Sample Matrix (check one)			Reporting Units (circle)		Turn Around Time: <input type="checkbox"/> Normal <input checked="" type="checkbox"/> Rush <u>1-wk</u> Specify _____
							Indoor/Outdoor Air	Soil Gas	Workplace Monitoring	Other <u>TRIP</u>	ppbv <u>ug/m3</u>	
01A	IAR05-C23-171211	LJR	11/20/17	0928	12/11/17	1110	In					CO87G
02A	IAR04-C23-171211	KJR		0926	12/11/17	1120	"	"				CO88G
03A	IAR03-C23-171211			0924		1123						CO89G
04A	IAR06-C23-171211			0923		1130						CO90G
05A	IAR01-C23-171211			0921		1137						CO91G
06A	IAR02-C23-171211			0920		1142						CO92G
07A	IAR07-C23-171211	LJR	12/11/17	1400								CO93G (trip blank)

Relinquished by: Jan Heid Date: 12/11/17 Time: 1400 Received by: Alan P. GARZ Date: 12/12/17 Time: 1005 Notes to Lab: _____
 Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and international laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples.

Lab Use Only

Shipper Name: UPS Custody Seals Intact? Yes No None Sample Condition Upon Receipt: (circle) Good SDR
 Air bill #: _____ Temperature (°C) _____



May 8, 2017

Ms. Kathryn Hartley
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Ms. Hartley,

On May 3rd, 7 samples were received by our laboratory and assigned our laboratory project number EV17050031. The project was identified as your 222052.010.013. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 5/8/2017
130 - 2nd Ave. S. ALS JOB#: EV17050031
Edmonds, WA 98020 ALS SAMPLE#: EV17050031-01
CLIENT CONTACT: Kathryn Hartley DATE RECEIVED: 05/03/2017
CLIENT PROJECT: 222052.010.013 COLLECTION DATE: 5/2/2017 1:05:00 PM
CLIENT SAMPLE ID LAI-3a (3) WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	25	1	MG/KG	05/04/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	50	1	MG/KG	05/04/2017	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	120	05/04/2017	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 5/8/2017
130 - 2nd Ave. S. ALS JOB#: EV17050031
Edmonds, WA 98020 ALS SAMPLE#: EV17050031-02
CLIENT CONTACT: Kathryn Hartley DATE RECEIVED: 05/03/2017
CLIENT PROJECT: 222052.010.013 COLLECTION DATE: 5/2/2017 11:45:00 AM
CLIENT SAMPLE ID LAI-10 (1) WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	120	5	MG/KG	05/05/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	4200	250	5	MG/KG	05/05/2017	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 5X Dilution	NWTPH-DX	122	05/05/2017	EBS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains light oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/8/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17050031
CLIENT PROJECT:	222052.010.013	ALS SAMPLE#:	EV17050031-03
CLIENT SAMPLE ID	LAI-12 (3)	DATE RECEIVED:	05/03/2017
		COLLECTION DATE:	5/2/2017 9:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	25	1	MG/KG	05/04/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	50	1	MG/KG	05/04/2017	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	120	05/04/2017	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/8/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17050031
CLIENT PROJECT:	222052.010.013	ALS SAMPLE#:	EV17050031-04
CLIENT SAMPLE ID	LAI-5 (9)	DATE RECEIVED:	05/03/2017
		COLLECTION DATE:	5/2/2017 10:38:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	25	1	MG/KG	05/04/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	50	1	MG/KG	05/04/2017	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	88.0	05/04/2017	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	5/8/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17050031
CLIENT PROJECT:	222052.010.013	ALS SAMPLE#:	EV17050031-05
CLIENT SAMPLE ID	LAI-7 (1)	DATE RECEIVED:	05/03/2017
		COLLECTION DATE:	5/3/2017 8:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX w/ SGA	U	25	1	MG/KG	05/04/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX w/ SGA	76	50	1	MG/KG	05/04/2017	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	99.0	05/04/2017	EBS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 5/8/2017
130 - 2nd Ave. S. ALS SDG#: EV17050031
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Kathryn Hartley
CLIENT PROJECT: 222052.010.013

LABORATORY BLANK RESULTS

MB-050317S - Batch 115997 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	MG/KG	25	05/03/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	MG/KG	50	05/03/2017	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

DATE: 5/8/2017
ALS SDG#: EV17050031
WDOE ACCREDITATION: C601

CLIENT CONTACT: Kathryn Hartley
CLIENT PROJECT: 222052.010.013

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 115997 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range (C12-C24) - BS	NWTPH-DX	98.7			75.5	122.1	05/03/2017	EBS
TPH-Diesel Range (C12-C24) - BSD	NWTPH-DX	103	4		75.5	122.1	05/03/2017	EBS

APPROVED BY

Laboratory Director

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: London

ALS Job #: EN17050031

Project: 222052.010.013

Received Date: 5/3/17 Received Time: 1523 By: CON

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express

	Yes	No	N/A
Were custody seals on outside of shipping container?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, how many? _____			
Where? _____			
Custody seal date: _____			
Seal name: _____			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?

Bubbles present in sample #: _____

Temperature of cooler upon receipt: 3.3C Cold Cool Ambient N/A

Explain any discrepancies: _____

Was client contacted? _____ Who was called? _____ By whom? _____ Date: _____

Outcome of call: _____



October 24, 2017

Ms. Kathryn Hartley
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Ms. Hartley,

On October 6th, 15 samples were received by our laboratory and assigned our laboratory project number EV17100028. The project was identified as your TECT Phase 2 - 022052.020.021. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
		ALS JOB#:	EV17100028
CLIENT CONTACT:	Kathryn Hartley	ALS SAMPLE#:	EV17100028-01
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	DATE RECEIVED:	10/06/2017
CLIENT SAMPLE ID	LAI-26 (6.5)	COLLECTION DATE:	10/5/2017 11:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	25	1	MG/KG	10/09/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	80	50	1	MG/KG	10/09/2017	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Acetone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Trichloroethene	EPA-8260	40	10	1	UG/KG	10/06/2017	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Toluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-01
CLIENT SAMPLE ID	LAI-26 (6.5)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 11:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Styrene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Naphthalene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWTPH-DX	106	10/09/2017	EBS
1,2-Dichloroethane-d4	EPA-8260	106	10/06/2017	DLC
Toluene-d8	EPA-8260	96.8	10/06/2017	DLC
4-Bromofluorobenzene	EPA-8260	103	10/06/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-02
CLIENT SAMPLE ID	LAI-26 (9.5)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 11:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING	DILUTION	UNITS	ANALYSIS	ANALYSIS
			LIMITS	FACTOR		DATE	BY
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Acetone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	21	10	1	UG/KG	10/06/2017	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Trichloroethene	EPA-8260	1400	10	1	UG/KG	10/09/2017	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Toluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-02
CLIENT SAMPLE ID	LAI-26 (9.5)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 11:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Styrene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Naphthalene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
1,2-Dichloroethane-d4	EPA-8260	102	10/06/2017	DLC
1,2-Dichloroethane-d4	EPA-8260	96.9	10/09/2017	DLC
Toluene-d8	EPA-8260	99.1	10/06/2017	DLC
Toluene-d8	EPA-8260	97.4	10/09/2017	DLC
4-Bromofluorobenzene	EPA-8260	103	10/06/2017	DLC
4-Bromofluorobenzene	EPA-8260	94.1	10/09/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-03
CLIENT SAMPLE ID	LAI-25 (15.0)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 1:20:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	25	1	MG/KG	10/09/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	50	1	MG/KG	10/09/2017	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Acetone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	320	46	1	UG/KG	10/09/2017	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Trichloroethene	EPA-8260	4000	100	10	UG/KG	10/10/2017	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Toluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-03
CLIENT SAMPLE ID	LAI-25 (15.0)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 1:20:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Styrene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Naphthalene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWTPH-DX	109	10/09/2017	EBS
1,2-Dichloroethane-d4 10X Dilution	EPA-8260	101	10/10/2017	DLC
1,2-Dichloroethane-d4	EPA-8260	104	10/06/2017	DLC
1,2-Dichloroethane-d4	EPA-8260	99.5	10/09/2017	DLC
Toluene-d8 10X Dilution	EPA-8260	96.7	10/10/2017	DLC
Toluene-d8	EPA-8260	98.8	10/06/2017	DLC
Toluene-d8	EPA-8260	99.1	10/09/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/24/2017
130 - 2nd Ave. S. ALS JOB#: EV17100028
Edmonds, WA 98020 ALS SAMPLE#: EV17100028-03
CLIENT CONTACT: Kathryn Hartley DATE RECEIVED: 10/06/2017
CLIENT PROJECT: TECT Phase 2 - 022052.020.021 COLLECTION DATE: 10/5/2017 1:20:00 PM
CLIENT SAMPLE ID LAI-25 (15.0) WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	
			DATE	BY
4-Bromofluorobenzene 10X Dilution	EPA-8260	98.2	10/10/2017	DLC
4-Bromofluorobenzene	EPA-8260	103	10/06/2017	DLC
4-Bromofluorobenzene	EPA-8260	94.6	10/09/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-04
CLIENT SAMPLE ID	LAI-23 (16.5)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 4:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	25	1	MG/KG	10/09/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	50	1	MG/KG	10/09/2017	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Acetone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	36	10	1	UG/KG	10/06/2017	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Toluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-04
CLIENT SAMPLE ID	LAI-23 (16.5)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 4:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Styrene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Naphthalene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWTPH-DX	101	10/09/2017	EBS
1,2-Dichloroethane-d4	EPA-8260	106	10/06/2017	DLC
Toluene-d8	EPA-8260	97.1	10/06/2017	DLC
4-Bromofluorobenzene	EPA-8260	101	10/06/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-05
CLIENT SAMPLE ID	LAI-17 (1.7)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 9:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	25	1	MG/KG	10/09/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	50	1	MG/KG	10/09/2017	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Acetone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Toluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-05
CLIENT SAMPLE ID	LAI-17 (1.7)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 9:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Styrene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Naphthalene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWTPH-DX	103	10/09/2017	EBS
1,2-Dichloroethane-d4	EPA-8260	105	10/06/2017	DLC
Toluene-d8	EPA-8260	96.6	10/06/2017	DLC
4-Bromofluorobenzene	EPA-8260	97.1	10/06/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-06
CLIENT SAMPLE ID	LAI-18 (1.8)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 10:05:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	25	1	MG/KG	10/09/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	50	1	MG/KG	10/09/2017	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Acetone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Toluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-06
CLIENT SAMPLE ID	LAI-18 (1.8)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 10:05:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Styrene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Naphthalene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWTPH-DX	93.5	10/09/2017	EBS
1,2-Dichloroethane-d4	EPA-8260	102	10/06/2017	DLC
Toluene-d8	EPA-8260	97.2	10/06/2017	DLC
4-Bromofluorobenzene	EPA-8260	97.4	10/06/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-07
CLIENT SAMPLE ID	LAI-19 (2.4)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 10:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	47	25	1	MG/KG	10/09/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	50	1	MG/KG	10/09/2017	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Acetone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Toluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-07
CLIENT SAMPLE ID	LAI-19 (2.4)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 10:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Styrene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Naphthalene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWTPH-DX	95.7	10/09/2017	EBS
1,2-Dichloroethane-d4	EPA-8260	102	10/06/2017	DLC
Toluene-d8	EPA-8260	99.0	10/06/2017	DLC
4-Bromofluorobenzene	EPA-8260	106	10/06/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains weathered diesel.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-08
CLIENT SAMPLE ID	LAI-22 (1.5)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 11:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	25	1	MG/KG	10/09/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	50	1	MG/KG	10/09/2017	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Acetone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Toluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-08
CLIENT SAMPLE ID	LAI-22 (1.5)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 11:25:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Styrene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Naphthalene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWTPH-DX	92.2	10/09/2017	EBS
1,2-Dichloroethane-d4	EPA-8260	103	10/06/2017	DLC
Toluene-d8	EPA-8260	96.7	10/06/2017	DLC
4-Bromofluorobenzene	EPA-8260	101	10/06/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-09
CLIENT SAMPLE ID	LAI-21 (1.5)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 12:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	25	1	MG/KG	10/09/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	52	50	1	MG/KG	10/09/2017	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Acetone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Toluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-09
CLIENT SAMPLE ID	LAI-21 (1.5)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 12:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Styrene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Naphthalene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Ethylene Glycol	GC-FID	U	11000	1	UG/KG	10/17/2017	CAS
Propylene Glycol	GC-FID	U	11000	1	UG/KG	10/17/2017	CAS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWTPH-DX	88.8	10/09/2017	EBS
1,2-Dichloroethane-d4	EPA-8260	100	10/06/2017	DLC
Toluene-d8	EPA-8260	96.3	10/06/2017	DLC
4-Bromofluorobenzene	EPA-8260	98.1	10/06/2017	DLC
1,3-Propanediol	GC-FID	86.0	10/17/2017	CAS



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-09
CLIENT SAMPLE ID	LAI-21 (1.5)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 12:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-10
CLIENT SAMPLE ID	LAI-20 (1.2)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	25	1	MG/KG	10/09/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	50	1	MG/KG	10/09/2017	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Acetone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Toluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-10
CLIENT SAMPLE ID	LAI-20 (1.2)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Styrene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Naphthalene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWTPH-DX	96.7	10/09/2017	EBS
1,2-Dichloroethane-d4	EPA-8260	101	10/06/2017	DLC
Toluene-d8	EPA-8260	97.8	10/06/2017	DLC
4-Bromofluorobenzene	EPA-8260	98.6	10/06/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-11
CLIENT SAMPLE ID	LAI-16 (2.1)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	250	10	MG/KG	10/11/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	6900	500	10	MG/KG	10/11/2017	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Acetone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
Toluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-11
CLIENT SAMPLE ID	LAI-16 (2.1)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	10/06/2017	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	10/06/2017	DLC
Styrene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	10/06/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
Naphthalene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/06/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25 10X Dilution	NWTPH-DX	102	10/11/2017	EBS
1,2-Dichloroethane-d4	EPA-8260	110	10/06/2017	DLC
Toluene-d8	EPA-8260	114	10/06/2017	DLC
4-Bromofluorobenzene	EPA-8260	199 GS1	10/06/2017	DLC

GS1 - Surrogate outside of control limits due to matrix effect.
 U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains light oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-12
CLIENT SAMPLE ID	LAI-15 (1.7)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 2:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	27	25	1	MG/KG	10/09/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	70	50	1	MG/KG	10/09/2017	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Acetone	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	10/09/2017	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	10/09/2017	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
Toluene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-12
CLIENT SAMPLE ID	LAI-15 (1.7)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 2:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	10/09/2017	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	10/09/2017	DLC
Styrene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Naphthalene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWTPH-DX	93.8	10/09/2017	EBS
1,2-Dichloroethane-d4	EPA-8260	98.8	10/09/2017	DLC
Toluene-d8	EPA-8260	105	10/09/2017	DLC
4-Bromofluorobenzene	EPA-8260	99.4	10/09/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains light oil/lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-13
CLIENT SAMPLE ID	LAI-14 (1.2)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 3:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	25	1	MG/KG	10/09/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	50	1	MG/KG	10/09/2017	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Acetone	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	10/09/2017	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	10/09/2017	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
Toluene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-13
CLIENT SAMPLE ID	LAI-14 (1.2)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 3:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	10/09/2017	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	10/09/2017	DLC
Styrene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Naphthalene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWTPH-DX	107	10/09/2017	EBS
1,2-Dichloroethane-d4	EPA-8260	100	10/09/2017	DLC
Toluene-d8	EPA-8260	103	10/09/2017	DLC
4-Bromofluorobenzene	EPA-8260	101	10/09/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-14
CLIENT SAMPLE ID	LAI-13 (1.2)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 4:25:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	25	1	MG/KG	10/11/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	460	50	1	MG/KG	10/11/2017	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Acetone	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	10/09/2017	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	10/09/2017	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
Toluene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-14
CLIENT SAMPLE ID	LAI-13 (1.2)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/5/2017 4:25:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	10/09/2017	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	10/09/2017	DLC
Styrene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Naphthalene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWTPH-DX	110	10/11/2017	EBS
1,2-Dichloroethane-d4	EPA-8260	97.3	10/09/2017	DLC
Toluene-d8	EPA-8260	104	10/09/2017	DLC
4-Bromofluorobenzene	EPA-8260	108	10/09/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-15
CLIENT SAMPLE ID	LAI-27 (8)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/6/2017 12:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	25	1	MG/KG	10/09/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	50	1	MG/KG	10/09/2017	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Acetone	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	10/09/2017	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	19	10	1	UG/KG	10/09/2017	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	10/09/2017	DLC
Trichloroethene	EPA-8260	3800	100	10	UG/KG	10/10/2017	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
Toluene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-15
CLIENT SAMPLE ID	LAI-27 (8)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/6/2017 12:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	10/09/2017	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	10/09/2017	DLC
Styrene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	10/09/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
Naphthalene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/09/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWTPH-DX	95.1	10/09/2017	EBS
1,2-Dichloroethane-d4 10X Dilution	EPA-8260	103	10/10/2017	DLC
1,2-Dichloroethane-d4	EPA-8260	96.6	10/09/2017	DLC
Toluene-d8 10X Dilution	EPA-8260	94.3	10/10/2017	DLC
Toluene-d8	EPA-8260	103	10/09/2017	DLC
4-Bromofluorobenzene 10X Dilution	EPA-8260	94.8	10/10/2017	DLC
4-Bromofluorobenzene	EPA-8260	103	10/09/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100028-15
CLIENT SAMPLE ID	LAI-27 (8)	DATE RECEIVED:	10/06/2017
		COLLECTION DATE:	10/6/2017 12:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS SDG#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-100617S2 - Batch 120912 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	MG/KG	25	10/09/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	MG/KG	50	10/09/2017	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-100617S - Batch 120825 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Chloromethane	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Vinyl Chloride	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Bromomethane	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Chloroethane	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Carbon Tetrachloride	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Trichlorofluoromethane	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Carbon Disulfide	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Acetone	EPA-8260	U	UG/KG	50	10/06/2017	DLC
1,1-Dichloroethene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Methylene Chloride	EPA-8260	U	UG/KG	20	10/06/2017	DLC
Acrylonitrile	EPA-8260	U	UG/KG	50	10/06/2017	DLC
Methyl T-Butyl Ether	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
1,1-Dichloroethane	EPA-8260	U	UG/KG	10	10/06/2017	DLC
2-Butanone	EPA-8260	U	UG/KG	50	10/06/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
2,2-Dichloropropane	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Bromochloromethane	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Chloroform	EPA-8260	U	UG/KG	10	10/06/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	UG/KG	10	10/06/2017	DLC
1,1-Dichloropropene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
1,2-Dichloroethane	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Benzene	EPA-8260	U	UG/KG	5.0	10/06/2017	DLC
Trichloroethene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
1,2-Dichloropropane	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Dibromomethane	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Bromodichloromethane	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
4-Methyl-2-Pentanone	EPA-8260	U	UG/KG	50	10/06/2017	DLC
Toluene	EPA-8260	U	UG/KG	10	10/06/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS SDG#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-100617S - Batch 120825 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Cis-1,3-Dichloropropene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	UG/KG	10	10/06/2017	DLC
2-Hexanone	EPA-8260	U	UG/KG	50	10/06/2017	DLC
1,3-Dichloropropane	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Tetrachloroethylene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Dibromochloromethane	EPA-8260	U	UG/KG	10	10/06/2017	DLC
1,2-Dibromoethane	EPA-8260	U	UG/KG	5.0	10/06/2017	DLC
Chlorobenzene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Ethylbenzene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
m,p-Xylene	EPA-8260	U	UG/KG	20	10/06/2017	DLC
Styrene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
o-Xylene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Bromoform	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Isopropylbenzene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	UG/KG	10	10/06/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Bromobenzene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
N-Propyl Benzene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
2-Chlorotoluene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
4-Chlorotoluene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
T-Butyl Benzene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
S-Butyl Benzene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
P-Isopropyltoluene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
N-Butylbenzene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	UG/KG	50	10/06/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Hexachlorobutadiene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
Naphthalene	EPA-8260	U	UG/KG	10	10/06/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	UG/KG	10	10/06/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-304055 - Batch R304055 - Soil by GC-FID

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Ethylene Glycol	GC-FID	U	UG/KG	11000	10/17/2017	CAS



CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc. DATE: 10/24/2017
130 - 2nd Ave. S. ALS SDG#: EV17100028
Edmonds, WA 98020 WDOE ACCREDITATION: C601
CLIENT CONTACT: Kathryn Hartley
CLIENT PROJECT: TECT Phase 2 - 022052.020.021

LABORATORY BLANK RESULTS

MBLK-304055 - Batch R304055 - Soil by GC-FID

Propylene Glycol	GC-FID	U	UG/KG	11000	10/17/2017	CAS
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U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/24/2017
CLIENT CONTACT:	Kathryn Hartley	ALS SDG#:	EV17100028
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 120912 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range (C12-C24) - BS	NWTPH-DX	101			75.5	122.1	10/09/2017	EBS
TPH-Diesel Range (C12-C24) - BSD	NWTPH-DX	102	1		75.5	122.1	10/09/2017	EBS

ALS Test Batch ID: 120825 - Soil by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
1,1-Dichloroethene - BS	EPA-8260	98.1			73	138	10/06/2017	DLC
1,1-Dichloroethene - BSD	EPA-8260	96.1	2		73	138	10/06/2017	DLC
Benzene - BS	EPA-8260	100			75	138	10/06/2017	DLC
Benzene - BSD	EPA-8260	99.9	0		75	138	10/06/2017	DLC
Trichloroethene - BS	EPA-8260	98.6			75	136	10/06/2017	DLC
Trichloroethene - BSD	EPA-8260	98.6	0		75	136	10/06/2017	DLC
Toluene - BS	EPA-8260	96.6			76	134	10/06/2017	DLC
Toluene - BSD	EPA-8260	97.2	1		76	134	10/06/2017	DLC
Chlorobenzene - BS	EPA-8260	97.2			79	128	10/06/2017	DLC
Chlorobenzene - BSD	EPA-8260	95.3	2		79	128	10/06/2017	DLC

ALS Test Batch ID: R304055 - Soil by GC-FID

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Ethylene Glycol - BS	GC-FID	112			70	130	10/17/2017	CAS
Propylene Glycol - BS	GC-FID	120			70	130	10/17/2017	CAS

APPROVED BY

Laboratory Director

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV17100028

Project: TEC Phase 2

Received Date: 10/6/17 Received Time: 12:55 By: SM

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express

Were custody seals on outside of shipping container? Yes No N/A
If yes, how many? Where?
Custody seal date: Seal name:

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following: Received ^{per} 5035 Low late.

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?
Bubbles present in sample #: _____

Temperature of cooler upon receipt: 1.3°C on (Cold) Cool Ambient N/A

Explain any discrepancies: * - Received only 5035 Low kit (no jar) for LAI-26 (9.5),
COC said LAI-20 (1.2) but containers said LAI-21 (1.2).

Was client contacted? Yes Who was called? Stephanie By whom? Shawn Date: 10/6/17

Outcome of call: Should be LAI-20 (1.2), changed sample ID on containers.



October 17, 2017

Ms. Kathryn Hartley
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Ms. Hartley,

On October 10th, 2 samples were received by our laboratory and assigned our laboratory project number EV17100043. The project was identified as your TECT Phase 2 - 022052.020.021. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/17/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100043
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100043-01
CLIENT SAMPLE ID	LAI-28 (17.75)	DATE RECEIVED:	10/10/2017
		COLLECTION DATE:	10/9/2017 1:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	25	1	MG/KG	10/16/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	50	1	MG/KG	10/16/2017	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Acetone	EPA-8260	U	50	1	UG/KG	10/12/2017	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	10/12/2017	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	10/12/2017	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	10/12/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	10/12/2017	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	10/12/2017	DLC
Toluene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	10/12/2017	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/17/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100043
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100043-01
CLIENT SAMPLE ID	LAI-28 (17.75)	DATE RECEIVED:	10/10/2017
		COLLECTION DATE:	10/9/2017 1:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	10/12/2017	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	10/12/2017	DLC
Styrene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	10/12/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Naphthalene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWTPH-DX	74.1	10/16/2017	EBS
1,2-Dichloroethane-d4	EPA-8260	101	10/12/2017	DLC
Toluene-d8	EPA-8260	99.0	10/12/2017	DLC
4-Bromofluorobenzene	EPA-8260	100	10/12/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/17/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100043
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100043-02
CLIENT SAMPLE ID	LAI-24 (10.75)	DATE RECEIVED:	10/10/2017
		COLLECTION DATE:	10/9/2017 4:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	25	1	MG/KG	10/16/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	320	50	1	MG/KG	10/16/2017	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Acetone	EPA-8260	U	50	1	UG/KG	10/12/2017	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	10/12/2017	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	10/12/2017	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	10/12/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	10/12/2017	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	10/12/2017	DLC
Toluene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	10/12/2017	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/17/2017
CLIENT CONTACT:	Kathryn Hartley	ALS JOB#:	EV17100043
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	ALS SAMPLE#:	EV17100043-02
CLIENT SAMPLE ID	LAI-24 (10.75)	DATE RECEIVED:	10/10/2017
		COLLECTION DATE:	10/9/2017 4:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	10/12/2017	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	10/12/2017	DLC
Styrene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	10/12/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
Naphthalene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	10/12/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWTPH-DX	118	10/16/2017	EBS
1,2-Dichloroethane-d4	EPA-8260	101	10/12/2017	DLC
Toluene-d8	EPA-8260	99.5	10/12/2017	DLC
4-Bromofluorobenzene	EPA-8260	106	10/12/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/17/2017
CLIENT CONTACT:	Kathryn Hartley	ALS SDG#:	EV17100043
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-100617S2 - Batch 120912 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	MG/KG	25	10/09/2017	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	MG/KG	50	10/09/2017	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-100917S - Batch 120822 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Chloromethane	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Vinyl Chloride	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Bromomethane	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Chloroethane	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Carbon Tetrachloride	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Trichlorofluoromethane	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Carbon Disulfide	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Acetone	EPA-8260	U	UG/KG	50	10/09/2017	DLC
1,1-Dichloroethene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Methylene Chloride	EPA-8260	U	UG/KG	20	10/09/2017	DLC
Acrylonitrile	EPA-8260	U	UG/KG	50	10/09/2017	DLC
Methyl T-Butyl Ether	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
1,1-Dichloroethane	EPA-8260	U	UG/KG	10	10/09/2017	DLC
2-Butanone	EPA-8260	U	UG/KG	50	10/09/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
2,2-Dichloropropane	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Bromochloromethane	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Chloroform	EPA-8260	U	UG/KG	10	10/09/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	UG/KG	10	10/09/2017	DLC
1,1-Dichloropropene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
1,2-Dichloroethane	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Benzene	EPA-8260	U	UG/KG	5.0	10/09/2017	DLC
Trichloroethene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
1,2-Dichloropropane	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Dibromomethane	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Bromodichloromethane	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
4-Methyl-2-Pentanone	EPA-8260	U	UG/KG	50	10/09/2017	DLC
Toluene	EPA-8260	U	UG/KG	10	10/09/2017	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/17/2017
CLIENT CONTACT:	Kathryn Hartley	ALS SDG#:	EV17100043
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-100917S - Batch 120822 - Soil by EPA-8260

Cis-1,3-Dichloropropene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	UG/KG	10	10/09/2017	DLC
2-Hexanone	EPA-8260	U	UG/KG	50	10/09/2017	DLC
1,3-Dichloropropane	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Tetrachloroethylene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Dibromochloromethane	EPA-8260	U	UG/KG	10	10/09/2017	DLC
1,2-Dibromoethane	EPA-8260	U	UG/KG	5.0	10/09/2017	DLC
Chlorobenzene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Ethylbenzene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
m,p-Xylene	EPA-8260	U	UG/KG	20	10/09/2017	DLC
Styrene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
o-Xylene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Bromoform	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Isopropylbenzene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	UG/KG	10	10/09/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Bromobenzene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
N-Propyl Benzene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
2-Chlorotoluene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
4-Chlorotoluene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
T-Butyl Benzene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
S-Butyl Benzene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
P-Isopropyltoluene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
N-Butylbenzene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	UG/KG	50	10/09/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Hexachlorobutadiene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
Naphthalene	EPA-8260	U	UG/KG	10	10/09/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	UG/KG	10	10/09/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	10/17/2017
CLIENT CONTACT:	Kathryn Hartley	ALS SDG#:	EV17100043
CLIENT PROJECT:	TECT Phase 2 - 022052.020.021	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 120912 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range (C12-C24) - BS	NWTPH-DX	101			75.5	122.1	10/09/2017	EBS
TPH-Diesel Range (C12-C24) - BSD	NWTPH-DX	102	1		75.5	122.1	10/09/2017	EBS

ALS Test Batch ID: 120822 - Soil by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
1,1-Dichloroethene - BS	EPA-8260	90.7			73	138	10/09/2017	DLC
1,1-Dichloroethene - BSD	EPA-8260	91.6	1		73	138	10/09/2017	DLC
Benzene - BS	EPA-8260	94.8			75	138	10/09/2017	DLC
Benzene - BSD	EPA-8260	100	6		75	138	10/09/2017	DLC
Trichloroethene - BS	EPA-8260	93.5			75	136	10/09/2017	DLC
Trichloroethene - BSD	EPA-8260	99.0	6		75	136	10/09/2017	DLC
Toluene - BS	EPA-8260	92.3			76	134	10/09/2017	DLC
Toluene - BSD	EPA-8260	97.5	5		76	134	10/09/2017	DLC
Chlorobenzene - BS	EPA-8260	92.5			79	128	10/09/2017	DLC
Chlorobenzene - BSD	EPA-8260	100	8		79	128	10/09/2017	DLC

APPROVED BY

Laboratory Director

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landan Inc.

ALS Job #: EV17100043

Project: Test Phase 2 - 022052.020.021

Received Date: 10/10/17 Received Time: 12:00 By: RB

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier ALS Hand Delivered
FedEx Express

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Were custody seals on outside of shipping container?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, how many? <u>1</u> Where? <u>Top</u>			
Custody seal date: <u>10/10/17</u> Seal name: <u>Custody Seal</u>			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following: Per 5035 low kits

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?
Bubbles present in sample #: _____

Temperature of cooler upon receipt: 3.6°C on ice Cold Cool Ambient N/A

Explain any discrepancies: _____

Was client contacted? Who was called? _____ By whom? _____ Date: _____

Outcome of call: _____

Indoor Air Sampling Results, dated January 5, 2018

Technical Memorandum

TO: Andrew Rardin, Paine Field / Snohomish County Airport
FROM: Kathryn Hartley and Jennifer Wynkoop
DATE: January 5, 2018
RE: **Indoor Air Sampling Results**
TECT Aerospace Lease Area
Building C-23
Snohomish County Airport
Everett, Washington
Project No. 0222052.020

Introduction

Landau Associates, Inc. (LAI) was retained by Snohomish County (County) to complete indoor air sampling at Building C-23 at the TECT Aerospace (TECT) lease area located at Paine Field / Snohomish County Airport in Everett, Washington (Figure 1). This technical memorandum presents the project background, indoor air sampling procedures, and the results of the indoor air sampling that was completed in November and December of 2017.

Background

LAI completed a subsurface investigation at the current TECT lease area, including Buildings C-20, C-21, C-22, and C-23. The subsurface investigation included the collection of soil vapor samples from locations outside of and beneath the footprints of each of the buildings. The samples were analyzed for volatile organic compounds (VOCs). VOCs, including trichloroethene (TCE) and vinyl chloride, were detected in soil vapor samples at concentrations greater than the Washington State Department of Ecology (Ecology) screening criteria for soil vapor at industrial properties. There is potential for vapors to move from the subsurface into the buildings and affect indoor air quality via a process called vapor intrusion. Based on the detected concentrations of VOCs in soil vapor, there is potential for vapor intrusion to result in concentrations of VOCs in indoor air that are greater than screening criteria for indoor air and to present a potential health concern for building occupants.

In response to the soil vapor sampling results, the County requested that LAI conduct indoor air sampling at the currently occupied buildings within the TECT lease area to determine if chemicals detected in soil vapor are also present in indoor air. In preparation for termination of its lease, TECT has moved all business operations to Building C-23 and Buildings C-20, C-21, and C-22 are not currently occupied, but are used by TECT for storage. Therefore, indoor air sampling was conducted only at Building C-23. The indoor air evaluation focused on the northern portion of Building C-23 (known as the Annex) where elevated VOC concentrations in soil vapor were detected below the building slab and adjacent to the building.

Indoor Air Sampling

In preparation for indoor air sampling, a survey of Building C-23 was conducted on November 13, 2017. The building survey consisted of observing relevant features of the building construction (e.g., foundation type and condition); documenting the building heating, cooling, and ventilation system; documenting building operations; and conducting a chemical inventory.

Based on the results of the soil vapor investigation and the building survey, six indoor air sampling locations were identified. The sampling locations are shown on Figure 2 and consist of locations in the Annex, Area 1, Area 9, and Area 11. Both short-term (8-hour) and long-term (21-day) indoor air samples were collected from each of the six locations. An ambient air sample was also collected from an upwind direction outside the building during the 8-hour sampling period.

The 8-hour samples were collected in Summa canisters and collection occurred during working hours on November 21, 2017. The 21-day samples were collected using Radiello® passive samplers. The samplers were deployed on November 21, 2017, and were retrieved on December 11, 2017. Samples were designated with a code beginning with either IA (8-hour sample) or IAR (21-day sample) followed by the sample number and the building number (e.g., IA01-C23).

Following sample collection, samples were packaged and shipped to Eurofins Air Toxics Laboratory for analysis with an expedited 1-week turnaround time. The 8-hour samples were analyzed for TCE and vinyl chloride by US Environmental Protection Agency (EPA) Air Method TO-15 and the 21-day samples were analyzed for TCE by Modified Method EPA TO-17.

Screening Criteria

Indoor air sampling results were compared to screening levels, which are concentrations above which the chemical may pose a health concern based on the individual exposed and the time period over which the exposure occurred. Screening levels are concentrations that have been established by Ecology or the EPA and are based on available scientific research on how the chemical may affect certain populations over specific time periods.

There are two types of indoor air screening levels: screenings levels based on short-term exposure (also called acute exposure), and screening levels based on long-term exposure (also called chronic exposure). Most chemicals, such as vinyl chloride, have only long-term exposure screening levels, meaning the health risk is associated with exposure to the chemical at or above the screening level over a long time period, usually several decades for adults. Detections higher than a long-term exposure screening level indicate that action may be needed to reduce long-term exposure levels if they are related to vapor intrusion. TCE is a chemical that, in addition to a long-term exposure screening level, also has a short-term screening level, meaning there may be health risks associated with exposure to the chemical at or above the screening level over a much shorter time period

(21 days). For TCE, the potential short-term risk applies only to women who are pregnant, because the risk is associated with potential harm to the fetus. Because women, particularly early in pregnancy, may not know that they are pregnant, all women of child-bearing age are considered to be the population at risk if concentrations of TCE exceed short-term screening levels.

Ecology has developed chronic screening levels for various exposure settings. TCE and vinyl chloride have screening criteria for both unrestricted use (based on exposure in a place of residence) and industrial use (based on exposure in an industrial work setting). TCE and vinyl chloride concentrations in air samples were compared to the industrial screening levels shown in the table below.

Indoor Air Results

The results of the indoor air sampling are presented in the table below and copies of the laboratory analytical reports are provided in Attachment 1.

Sample Identification	Sample Duration	TCE ($\mu\text{g}/\text{m}^3$)	Vinyl Chloride ($\mu\text{g}/\text{m}^3$)
IA01	8-hr	Not Detected	Not Detected
IAR01	21-day	0.50	--
IA02	8-hr	Not Detected	Not Detected
IAR02	21-day	0.40	--
IA03	8-hr	Not Detected	Not Detected
IAR03	21-day	0.55	--
IA04	8-hr	0.2 J	Not Detected
IAR04	21-day	1.7	--
IA05	8-hr	0.21 J	Not Detected
IAR05	21-day	0.96	--
IA06	8-hr	Not Detected	Not Detected
IAR06	21-day	0.42	--
AA	8-hr	0.31 J	Not Detected
Industrial Chronic Screening Level		2.0	2.8
Industrial Acute Screening Level		8.4	NA

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

-- = not analyzed

J = estimated concentration

As shown, during the 8-hour sampling event, TCE was detected in two indoor air samples at estimated time weighted average concentrations of 0.2 and 0.21 $\mu\text{g}/\text{m}^3$. TCE was also detected in the 8-hour ambient air sample at an estimated concentration of 0.31 $\mu\text{g}/\text{m}^3$, which is higher than the

concentrations detected in indoor air. Vinyl chloride was not detected in any of the 8-hour samples at concentrations greater than the laboratory reporting limit.

During the 21-day sampling event, TCE was detected in each of the six indoor air samples at time-weighted average concentrations ranging from 0.40 to 1.7 $\mu\text{g}/\text{m}^3$. None of the detected concentrations exceeded either the chronic or acute screening criteria for industrial properties. The data indicate that vapor intrusion is likely occurring, but that contaminant concentrations in indoor air are, on average, less than the screening criteria.

Use of This Technical Memorandum

This technical memorandum has been prepared for the exclusive use of Snohomish County for specific application to the TECT Aerospace Lease Area. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of LAI. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by LAI, shall be at the user's sole risk. LAI warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied.

* * * * *

If you have any questions regarding the indoor air sampling, please contact Kathryn Hartley at (425) 248-7520 or Jennifer Wynkoop at (253) 284-4879.

LANDAU ASSOCIATES, INC.



Kathryn F. Hartley
Associate



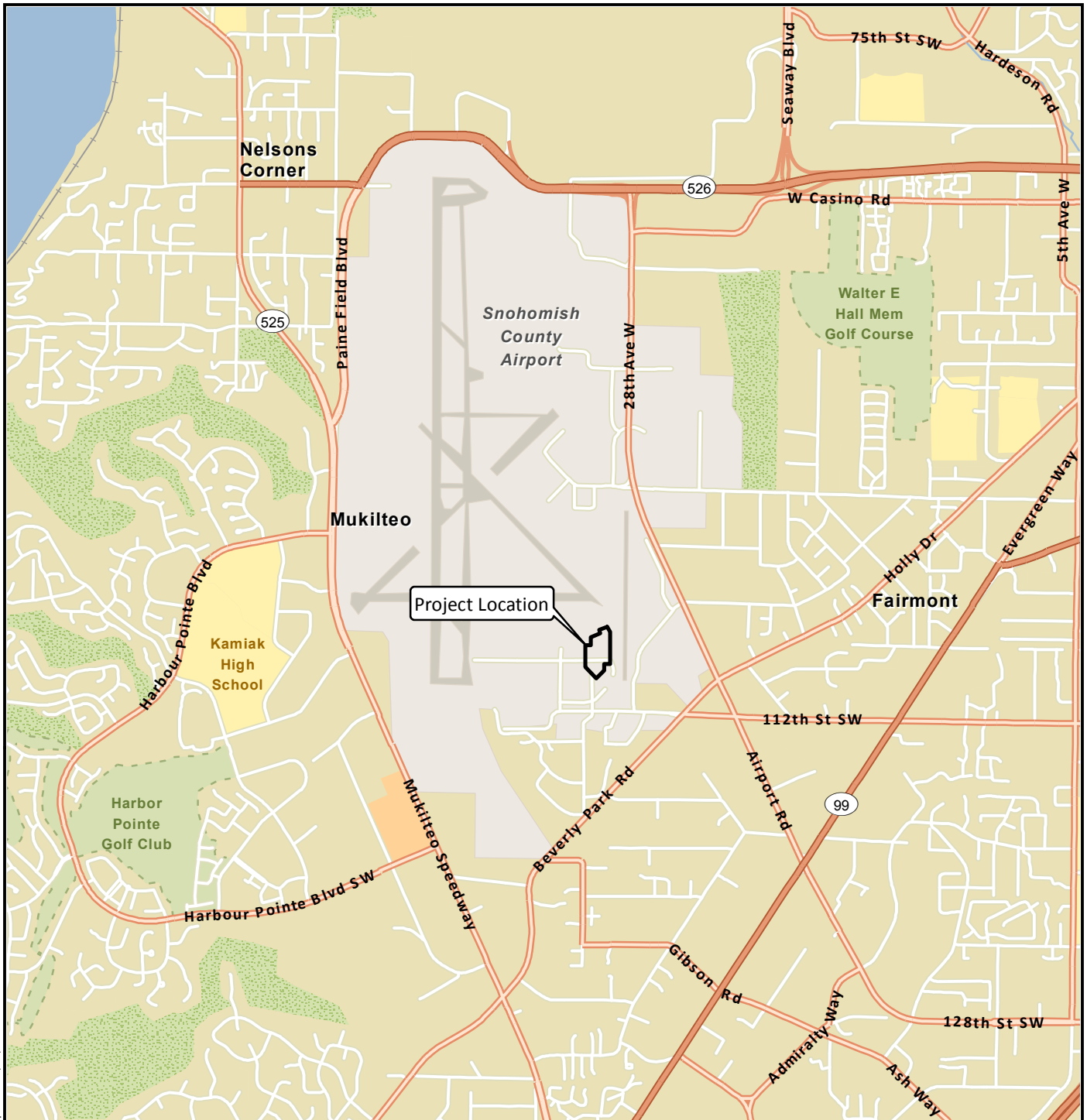
Jennifer W. Wynkoop
Principal

KFH/JWW/ccy

P:\222\052\R\Vapor Intrusion Assessment\Indoor Air Sample Results TM\LAI TECT IA Results_tm - 01-05-18.docx

Attachments

- Figure 1: Vicinity Map
- Figure 2: Indoor Air Sampling Locations
- Attachment 1: Laboratory Analytical Reports



G:\Projects\222\052\020\IndoorAirSampling\F01VicinityMap.mxd 11/26/2017



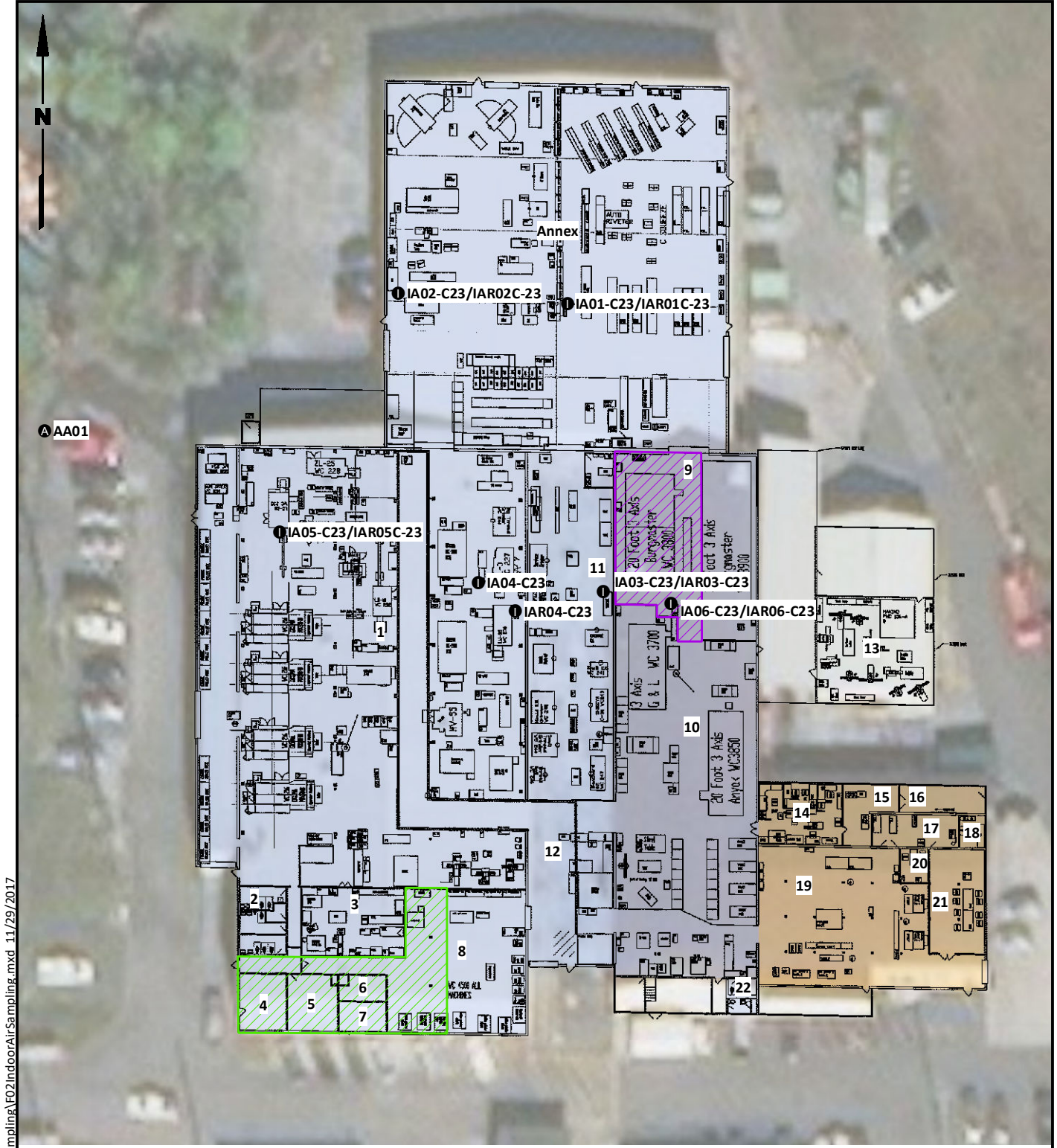
Data Source: Esri 2012

Environmental Due Diligence
TECT Aerospace Lease Area
Everett, Washington

Vicinity Map

Figure
1





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Legend

- Ambient Air Sampling Location
- Indoor Air Sampling Location
- ▨ Area Served by Roof Mounted AC Unit
- ▨ Area Served by Roof Mounted HVAC Unit
- ▨ Pier Block Foundation (Addition)
- ▨ Slab-on-Grade Foundation

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.



Data Source: Esri World Imagery.

Scale in Feet



Environmental Due Diligence
TECT Aerospace Lease Area
Everett, Washington

Indoor Air Sampling Locations

Figure
2

Laboratory Analytical Reports

12/5/2017

Ms. Kathryn Hartley
Landau Associates, Inc.
130 2nd Avenue South

Edmonds WA 98020

Project Name: TECT
Project #: 0222052.020.021
Workorder #: 1711395R1

Dear Ms. Kathryn Hartley

The following report includes the data for the above referenced project for sample(s) received on 11/22/2017 at Air Toxics Ltd.

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

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

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1711395R1

Work Order Summary

CLIENT:	Ms. Kathryn Hartley Landau Associates, Inc. 130 2nd Avenue South Edmonds, WA 98020	BILL TO:	Ms. Kathryn Hartley Landau Associates, Inc. 130 2nd Avenue South Edmonds, WA 98020
PHONE:	425-329-0268	P.O. #	0222052.020.021
FAX:	425-778-6409	PROJECT #	0222052.020.021 TECT
DATE RECEIVED:	11/22/2017	CONTACT:	Kelly Buettner
DATE COMPLETED:	12/01/2017		
DATE REISSUED:	12/05/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	IA02-C23-171120	Modified TO-15	4.7 "Hg	5.4 psi
02A	IA01-C23-171120	Modified TO-15	5.5 "Hg	5 psi
03A	IA06-C23-171120	Modified TO-15	7.1 "Hg	5.1 psi
04A	IA03-C23-171120	Modified TO-15	5.9 "Hg	5 psi
05A	IA04-C23-171120	Modified TO-15	6.7 "Hg	4.9 psi
06A	IA05-C23-171120	Modified TO-15	5.5 "Hg	5.1 psi
07A	AA01-C23-171120	Modified TO-15	2.4 "Hg	5.4 psi
08A	Lab Blank	Modified TO-15	NA	NA
09A	CCV	Modified TO-15	NA	NA
10A	LCS	Modified TO-15	NA	NA
10AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 12/05/17

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
 TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
 Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.

Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

LABORATORY NARRATIVE
Modified TO-15
Landau Associates, Inc.
Workorder# 1711395R1

Seven 6 Liter Summa Canister (100% Certified) samples were received on November 22, 2017. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

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

<i>Requirement</i>	<i>TO-15</i>	<i>ATL Modifications</i>
Initial Calibration	</=30% RSD with 2 compounds allowed out to < 40% RSD	</=30% RSD with 4 compounds allowed out to < 40% RSD
Blank and standards	Zero Air	UHP Nitrogen provides a higher purity gas matrix than zero air

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Dilution was performed on samples IA02-C23-171120, IA01-C23-171120, IA06-C23-171120, IA03-C23-171120 and IA04-C23-171120 due to the presence of high level non-target species.

Per client's request, the workorder was reissued on 12/5/17 to report estimated values for Trichloroethene hits that are below the reporting limit but greater than the method detection limit. All the canisters used for this project have been certified to the reporting limit for the target analytes included in this workorder. Concentrations that are below the level at which the canister was certified may be false positives.

Additionally, results were reported in a different format.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV
N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- r1-File was requantified for the purpose of reissue

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
TECT

Client ID:	IA02-C23-171120	Date/Time Analyzed:	11/27/17 01:33 PM
Lab ID:	1711395R1-01A	Dilution Factor:	4.05
Date/Time Collected:	11/20/17 04:26 PM	Instrument/Filename:	msd21.i / 21112708r1
Media:	6 Liter Summa Canister (100% Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	79-01-6	0.22	0.87	2.2	Not Detected
Vinyl Chloride	75-01-4	0.041	0.41	1.0	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	105
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	112

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
TECT

Client ID:	IA01-C23-171120	Date/Time Analyzed:	11/27/17 02:21 PM
Lab ID:	1711395R1-02A	Dilution Factor:	5.47
Date/Time Collected:	11/20/17 05:00 PM	Instrument/Filename:	msd21.i / 21112709r1
Media:	6 Liter Summa Canister (100% Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	79-01-6	0.30	1.2	2.9	Not Detected
Vinyl Chloride	75-01-4	0.055	0.56	1.4	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	106
4-Bromofluorobenzene	460-00-4	70-130	100
Toluene-d8	2037-26-5	70-130	110

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
TECT

Client ID:	IA06-C23-171120	Date/Time Analyzed:	11/27/17 03:58 PM
Lab ID:	1711395R1-03A	Dilution Factor:	3.54
Date/Time Collected:	11/20/17 05:46 PM	Instrument/Filename:	msd21.i / 21112712r1
Media:	6 Liter Summa Canister (100% Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	79-01-6	0.20	0.76	1.9	Not Detected
Vinyl Chloride	75-01-4	0.036	0.36	0.90	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	103
4-Bromofluorobenzene	460-00-4	70-130	95
Toluene-d8	2037-26-5	70-130	110

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
TECT

Client ID:	IA03-C23-171120	Date/Time Analyzed:	11/27/17 03:23 PM
Lab ID:	1711395R1-04A	Dilution Factor:	3.34
Date/Time Collected:	11/20/17 05:45 PM	Instrument/Filename:	msd21.i / 21112711r1
Media:	6 Liter Summa Canister (100% Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	79-01-6	0.18	0.72	1.8	Not Detected
Vinyl Chloride	75-01-4	0.034	0.34	0.85	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	106
4-Bromofluorobenzene	460-00-4	70-130	99
Toluene-d8	2037-26-5	70-130	111

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
TECT

Client ID:	IA04-C23-171120	Date/Time Analyzed:	11/27/17 04:28 PM
Lab ID:	1711395R1-05A	Dilution Factor:	2.87
Date/Time Collected:	11/20/17 04:22 PM	Instrument/Filename:	msd21.i / 21112713r1
Media:	6 Liter Summa Canister (100% Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	79-01-6	0.16	0.62	1.5	0.20 J
Vinyl Chloride	75-01-4	0.029	0.29	0.73	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	109
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	108

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
TECT

Client ID:	IA05-C23-171120	Date/Time Analyzed:	11/27/17 05:17 PM
Lab ID:	1711395R1-06A	Dilution Factor:	1.65
Date/Time Collected:	11/20/17 05:52 PM	Instrument/Filename:	msd21.i / 21112714r1
Media:	6 Liter Summa Canister (100% Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	79-01-6	0.092	0.35	0.89	0.21 J
Vinyl Chloride	75-01-4	0.017	0.17	0.42	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	109
4-Bromofluorobenzene	460-00-4	70-130	100
Toluene-d8	2037-26-5	70-130	112

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
TECT

Client ID:	AA01-C23-171120	Date/Time Analyzed:	11/27/17 05:48 PM
Lab ID:	1711395R1-07A	Dilution Factor:	1.49
Date/Time Collected:	11/20/17 05:38 PM	Instrument/Filename:	msd21.i / 21112715r1
Media:	6 Liter Summa Canister (100% Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	79-01-6	0.083	0.32	0.80	0.31 J
Vinyl Chloride	75-01-4	0.015	0.15	0.38	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	107
4-Bromofluorobenzene	460-00-4	70-130	97
Toluene-d8	2037-26-5	70-130	100

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
TECT

Client ID:	Lab Blank	Date/Time Analyzed:	11/27/17 12:05 PM
Lab ID:	1711395R1-08A	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msd21.i / 21112706r1
Media:	NA - Not Applicable		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	79-01-6	0.056	0.21	0.54	Not Detected
Vinyl Chloride	75-01-4	0.010	0.10	0.26	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	110
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	99

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
TECT

Client ID:	CCV	Date/Time Analyzed:	11/27/17 09:15 AM
Lab ID:	1711395R1-09A	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msd21.i / 21112702
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
Trichloroethene	79-01-6	105
Vinyl Chloride	75-01-4	97

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	92
4-Bromofluorobenzene	460-00-4	70-130	100
Toluene-d8	2037-26-5	70-130	100

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
TECT

Client ID:	LCS	Date/Time Analyzed:	11/27/17 09:55 AM
Lab ID:	1711395R1-10A	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msd21.i / 21112703
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
Trichloroethene	79-01-6	102
Vinyl Chloride	75-01-4	105

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	98
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	102

* % Recovery is calculated using unrounded analytical results.

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
TECT

Client ID:	LCSD	Date/Time Analyzed:	11/27/17 10:47 AM
Lab ID:	1711395R1-10AA	Dilution Factor:	1.00
Date/Time Collected:	NA - Not Applicable	Instrument/Filename:	msd21.i / 21112704
Media:	NA - Not Applicable		

Compound	CAS#	%Recovery
Trichloroethene	79-01-6	103
Vinyl Chloride	75-01-4	101

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	95
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	102

* % Recovery is calculated using unrounded analytical results.

12/19/2017

Ms. Kathryn Hartley
Landau Associates, Inc.
130 2nd Avenue South

Edmonds WA 98020

Project Name: TECT
Project #: 222052
Workorder #: 1712216

Dear Ms. Kathryn Hartley

The following report includes the data for the above referenced project for sample(s) received on 12/12/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Passive S.E. RAD130/SKC are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

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

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1712216

Work Order Summary

CLIENT:	Ms. Kathryn Hartley Landau Associates, Inc. 130 2nd Avenue South Edmonds, WA 98020	BILL TO:	Ms. Kathryn Hartley Landau Associates, Inc. 130 2nd Avenue South Edmonds, WA 98020
PHONE:	425-329-0268	P.O. #	
FAX:	425-778-6409	PROJECT #	222052 TECT
DATE RECEIVED:	12/12/2017	CONTACT:	Kelly Buettner
DATE COMPLETED:	12/19/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
01A	IAR05-C23-171211	Passive S.E. RAD130/SKC
02A	IAR04-C23-171211	Passive S.E. RAD130/SKC
03A	IAR03-C23-171211	Passive S.E. RAD130/SKC
04A	IAR06-C23-171211	Passive S.E. RAD130/SKC
05A	IAR01-C23-171211	Passive S.E. RAD130/SKC
06A	IAR02-C23-171211	Passive S.E. RAD130/SKC
07A(on hold)	IARTRP-171211	Passive S.E. RAD130/SKC
08A	Lab Blank	Passive S.E. RAD130/SKC
09A	LCS	Passive S.E. RAD130/SKC
09AA	LCSD	Passive S.E. RAD130/SKC

CERTIFIED BY: 

 Technical Director

DATE: 12/19/17

LABORATORY NARRATIVE
RAD130 Passive SE by Mod EPA TO-17
Landau Associates, Inc.
Workorder# 1712216

Seven Radiello 130 (Solvent) samples were received on December 12, 2017. The laboratory analyzed the charcoal sorbent bed of the passive sampler following modified method EPA TO-17. The VOCs were chemically extracted using carbon disulfide and an aliquot of the extract was injected into a GC/MS for identification and quantification of volatile organic compounds (VOCs).

The mass of each target compound adsorbed by the sampler was converted to units of concentration using the sample deployment time and the sampling rate for each VOC. If sampling rates were calculated by the lab or the manufacturer, the concentration result has been flagged as an estimated value. Results are not corrected for desorption efficiency.

The reference method used for this procedure is EPA TO-17, which describes the collection of VOCs in ambient air using sorbents and analysis by GC/MS. Because TO-17 describes active sample collection using a pump and thermal desorption as the preparation step, several modifications are required. Modifications to TO-17 are listed in the table below:

<i>Requirement</i>	<i>TO-17</i>	<i>ATL Modifications</i>
Sample Collection	Pump pulls measured air volume through sorbent tube	VOCs in air adsorbed onto sorbent bed passively through diffusion
Sample Preparation	Thermal extraction	Solvent extraction
Sorbent tube conditioning	Condition newly packed tubes prior to use	Charcoal-based sorbent is a single use media and conditioning is conducted by vendor.
Instrumentation	Thermal desorption introduction system	Liquid injection introduction system
Internal Standard	Gas-phase internal standard introduced on the tube or focusing trap during analysis	Liquid-phase internal standard introduced on the tube at the time of extraction
Media and sample storage	<4 deg C, 30 days	Media shelf life is determined by vendor; sample hold-time is 6 months for the RAD130 and WMS. Sample preservation requirements are storage in a cool, solvent-free refrigerator and optional use of ice during shipping.
Internal Standard Recovery	+/-40% of daily CCV area	-50% to +100% of daily CCV area

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The uptake rates were corrected based on average field temperatures if provided. In the absence of field temperatures, the uptake rates determined at 25 deg C were used.

To calculate ug/m³ concentrations in the Lab Blank, a sampling duration of 30382 minutes was applied. The assumed temperature used for the uptake rate is listed on the data page. If the field temperatures were provided, the rate was adjusted in the same manner as the field samples.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

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

N - The identification is based on presumptive evidence.

C - Estimated concentration due to calculated sampling rate

CN - See case narrative explanation.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds VOCS BY PASSIVE SAMPLER - GC/MS

Client Sample ID: IAR05-C23-171211

Lab ID#: 1712216-01A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	2.0	0.96

Client Sample ID: IAR04-C23-171211

Lab ID#: 1712216-02A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	3.6	1.7

Client Sample ID: IAR03-C23-171211

Lab ID#: 1712216-03A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	1.1	0.55

Client Sample ID: IAR06-C23-171211

Lab ID#: 1712216-04A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	0.88	0.42

Client Sample ID: IAR01-C23-171211

Lab ID#: 1712216-05A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	1.0	0.50

Client Sample ID: IAR02-C23-171211

Lab ID#: 1712216-06A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	0.84	0.40



Air Toxics

Client Sample ID: IAR05-C23-171211

Lab ID#: 1712216-01A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10121319sim	Date of Collection:	12/11/17 11:10:00 A
Dil. Factor:	1.00	Date of Analysis:	12/13/17 03:25 PM
		Date of Extraction:	12/13/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	2.0	0.96

Temperature = 77.0F , duration time = 30342 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130



Air Toxics

Client Sample ID: IAR04-C23-171211

Lab ID#: 1712216-02A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10121320sim	Date of Collection:	12/11/17 11:20:00 A
Dil. Factor:	1.00	Date of Analysis:	12/13/17 03:50 PM
		Date of Extraction:	12/13/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	3.6	1.7

Temperature = 77.0F , duration time = 30354 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130



Air Toxics

Client Sample ID: IAR03-C23-171211

Lab ID#: 1712216-03A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10121321sim	Date of Collection:	12/11/17 11:23:00 A
Dil. Factor:	1.00	Date of Analysis:	12/13/17 04:15 PM
		Date of Extraction:	12/13/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	1.1	0.55

Temperature = 77.0F , duration time = 30359 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130



Air Toxics

Client Sample ID: IAR06-C23-171211

Lab ID#: 1712216-04A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10121322sim	Date of Collection:	12/11/17 11:30:00 A
Dil. Factor:	1.00	Date of Analysis:	12/13/17 04:40 PM
		Date of Extraction:	12/13/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	0.88	0.42

Temperature = 77.0F , duration time = 30367 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130



Air Toxics

Client Sample ID: IAR01-C23-171211

Lab ID#: 1712216-05A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10121323sim	Date of Collection:	12/11/17 11:37:00 A
Dil. Factor:	1.00	Date of Analysis:	12/13/17 05:04 PM
		Date of Extraction:	12/13/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	1.0	0.50

Temperature = 77.0F , duration time = 30376 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130



Air Toxics

Client Sample ID: IAR02-C23-171211

Lab ID#: 1712216-06A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10121324sim	Date of Collection:	12/11/17 11:42:00 A
Dil. Factor:	1.00	Date of Analysis:	12/13/17 05:29 PM
		Date of Extraction:	12/13/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	0.84	0.40

Temperature = 77.0F , duration time = 30382 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1712216-08A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10121309sim	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/13/17 11:16 AM
		Date of Extraction:	12/13/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.048	Not Detected	Not Detected

Temperature = 77.0F , duration time = 30382 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1712216-09A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10121307sim	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/13/17 10:26 AM
		Date of Extraction:	12/13/17

Compound	%Recovery	Method Limits
Trichloroethene	83	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	106	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1712216-09AA

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10121308sim	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/13/17 10:51 AM
		Date of Extraction:	12/13/17

Compound	%Recovery	Method Limits
Trichloroethene	84	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130



Air Toxics

Passive Sorbent Chain of Custody

WO#: **1712216**

Case Seal #: _____

Company: LAI Project #: 222052 P.O.# _____
 Project Manager: Jan Wynkoop Project Name: TECT
 Contact phone/email: _____ Collected by: LJR

Lab ID	Sample Identification	Sampler ID	Date of Deployment (mm/dd/yy)	Time of Deployment (hr:min)	Date of Retrieval (mm/dd/yy)	Time of Retrieval (hr:min)	Sample Matrix (check one)			Reporting Units (circle)		Turn Around Time: <input type="checkbox"/> Normal <input checked="" type="checkbox"/> Rush <u>1-wk</u> Specify _____
							Indoor/Outdoor Air	Soil Gas	Workplace Monitoring	Other <u>TRIP</u>	ppbv <u>ug/m3</u>	
01A	IAR05-C23-171211	LJR	11/20/17	0928	12/11/17	1110	In					C087G
02A	IAR04-C23-171211	KSR		0926	12/11/17	1120	"	"				C088G
03A	IAR03-C23-171211			0924		1123						C089G
04A	IAR06-C23-171211			0923		1130						C090G
05A	IAR01-C23-171211			0921		1137						C091G
06A	IAR02-C23-171211			0920		1142						C092G
07A	IAR07-C23-171211	LJR	12/11/17	1400								C093G (trip blank)

Relinquished by: [Signature] Date: 12/11/17 Time: 1400 Received by: [Signature] Date: 12/12/17 Time: 1005 Notes to Lab: _____
 Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and international laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples.

Lab Use Only

Shipper Name: UPS Custody Seals Intact? Yes No None Sample Condition Upon Receipt: (circle) Good SDR
 Air bill #: _____ Temperature (°C) _____