ZipperGeo
Geoprofessional Consultants

TECHNICAL MEMORANDUM

October 4, 2022

AAA Management LLC
PO Box 40930
San Diego, CA 98504

Attn.: Ms. Rosalie Merks

Subject: **Tier II Vapor Intrusion Investigation**
Former Boeing Building 10-16 - Garden Avenue Property
535 Garden Avenue
Renton, King County, Washington 98502
ZGA Project No. 2509.23

INTRODUCTION

Zipper Geo Associates, LLC (ZGA) is pleased to submit this Tier II Vapor Intrusion Investigation of the existing commercial structure (former Boeing Building 10-16) located at the street address of 535 Garden Avenue in Renton, Washington (the Property). This investigation was completed in general accordance with our *Work Plan for Environmental Consulting Services*, dated September 9, 2022, the Washington State Department of Ecology's (Ecology's) *Guidance for Evaluating Vapor Intrusion in Washington State,* dated March 2022, and MTCA[1].

BACKGROUND

The Property (King County tax parcel No. 756460-0055) is developed with several structures, including: a 1988, seven-story, commercial building (10-16 building), located in the northern portion of the Property; a 1980, 3-story commercial building (10-13 building); a standalone multi-level parking garage; and asphalt or concrete-paved driveways and walkways and landscaping. Building 10-16 has a reinforced structural slab foundation with approximately 0ne-foot topping slab conditions in the kitchen/cafeteria, restrooms, and janitorial areas to accommodate sub-slab utility corridors and floor drains. Preferential pathways observed during this investigation include sub-slab utilities and floor drains present within the kitchen and commissary areas in the western portion of building 10-16, and the men's restroom and janitorial closet in the eastern portion of building 10-16. A sub-floor approximately 1 foot above the concrete slab is located in the southeastern corner of building 10-16.

[1] Chapter 70A.305 RCW and its implementing regulations, the Model Toxics Control Act, Chapter 173-340 WAC, collectively referred to as MTCA.

The Property was granted a "No Further Action" (NFA) determination in 1994 by Ecology, and residual contaminated media is managed by way of a Restrictive Covenant, which was updated in 2001 and remains in place today. A Phase II Environmental Site Assessment completed on the Property in 2018 by Landau Associates (Boeing Buildings 10-13 and 10-16) included a vapor intrusion assessment as well as indoor air and ambient air quality evaluation. As indicated in Landau Associates August 7, 2018 report: "*The data indicate that vapor intrusion is not resulting in contaminant concentrations in indoor air that are greater than the indoor air screening levels for unrestricted land uses."*

PROJECT UNDERSTANDING

AAA Management LLC is in the process of purchasing the Property rights to develop multifamily residential units from The Boeing Company (Boeing) and has expressed their intent to convert the usage of the 2nd through 7th Floors of Building 10-16 from commercial to residential. Conversion of Building 10-16 from commercial to residential is precluded by the original terms agreed upon in the Purchase and Sale Agreement with Boeing. Boeing recommended that AAA Management LLC complete a supplemental vapor intrusion evaluation of Building 10-16 to further evaluate potential vapor intrusion risk under a residential scenario before allowing the conversion. The objective of this investigation was to complete the requested supplemental vapor intrusion evaluation of Building 10-16 under a residential exposure scenario.

METHODOLOGY

This investigation was completed using methodologies outlined in Ecology's *Guidance for Evaluating Vapor Intrusion in Washington State,* dated March 2022. Analytical results were compared to default MTCA Method B sub-slab soil gas Screening Levels, which were developed to be protective of a residential exposure scenario. Based on the building's construction, ZGA selected Vapor Pins™ as the most applicable sampling technology.

A total of eight Vapor Pins® (SG-1 through SG-8) were installed in the approximate locations indicated on the enclosed Figure 1, *Site and Exploration Plan*. Vapor Pins® were installed at locations representative of the building floor slab and in areas of potential preferential pathways of vapor intrusion, near previous soil gas sampling locations, or in areas where soil and groundwater impacts were previously encountered.

Prior to Vapor Pin® installation, a private utility locate was conducted by CNI Locating of Bonney Lake, Washington. The private locate included the use of a magnetometer and ground penetrating radar (GPR) to evaluate potential Vapor Pin® locations for the presence intra-slab or shallow sub-slab utilities and/or rebar reinforcements that may be damaged during installation. ZGA utilized a hand-held, electric roto-hammer to drill a 5/8-inch diameter slab penetration centered within a 1-1/2-inch diameter, 1-3/4-inch-deep recess. The Vapor Pins®, which generally consist of a 3-1/2-inch long, 1/2-inch diameter, hollow, stainless-steel, cylinder with a hose barb on the top end, were then installed into the slab penetration generated by the roto-hammer and a permanent stainless steel, threaded, flush-mount monument was

installed into the recess. The annular space between the Vapor Pin® and the slab was sealed with a silicon sleeve.

During sample collection, a "sampling train" consisting of ¼-inch diameter Teflon tubing connected the Vapor Pin® sampling point to a sample canister and to a purge canister with brass Swagelok® fittings. The sample and purge canisters were equipped with 200 or 150 cubic centimeter per minute (cc/min.) regulators.

ZGA completed field quality assurance/quality control (QA/QC) measures including leak testing via a shut-in test, water dam, and application of a liquid tracer of isopropyl alcohol (aka 2-propanol) according to the methodologies outlined in the Ecology's 2022 guidance, as referenced above. Each sampling train was subjected to a shut-in test for a period of at least five minutes at a negative pressure of at least 10 inches of mercury (in. Hg). No change in pressure was observed during the shut-in tests. Each sampling train was purged of at least three tubing volumes worth of potential residual ambient air into the purge canister, effectively priming the sampling train with soil vapor before sampling.

Once field QA/QC measures were completed successfully, a sub-slab soil gas sample was collected into laboratory supplied, individually certified 1 Liter summa canisters. Samples were collected into the summa canister until the negative pressure of the canister had fallen to within 5 to 7 in. Hg. Sample start and end times and initial and final pressures from the summa canisters were recorded on the chain-of-custody. Soil vapor sample containers were labeled with our company name, the project number, a unique sample identification, and the date and time of sample collection. Soil vapor samples were shipped under chain-of-custody procedures to Friedman and Bruya Inc. (F&BI), a Washington-State accredited laboratory located in Seattle, Washington.

Eight soil vapor samples were submitted to F&BI for the following analyses:

- Volatile organic compounds (VOCs) by Environmental Protection Agency (EPA) Method TO-15; and,
- Air-phase petroleum hydrocarbons (APH) by Massachusetts Department of Environmental Protection (MA-DEP) Method MA-APH.

ANALYTICAL LABORATORY RESULTS

Analytical test results of sub-slab soil vapor samples collected from sampling points SG-1 through SG-8 were compared to MTCA Method B Sub-Slab Soil Gas Screening Levels as provided in the Washington State Department of Ecology (Ecology) Cleanup Levels and Risk Calculation (CLARC) tables, which were most recently updated in July 2022. Analytical laboratory results are summarized in Table 1.

Per Ecology guidance, a total petroleum hydrocarbon (TPH) concentration was calculated for each sample as the sum detectable concentrations of the applicable compounds listed in Table 1 and one-half of the laboratory reporting detection limit (RDL) for non-detect TPH components. Based on our review, no compounds were reported with concentrations exceeding applicable MTCA Method B Sub-Slab Soil Gas

Screening Levels. Unless discussed below, chemicals of concern were not reported above the laboratory RDL.

Total Petroleum Hydrocarbons (TPH)

The sum of TPH for sample SG-1 (762 µg/m^3), SG-2 (491 µg/m^3), SG-3 (466 µg/m^3), SG-4 (471 µg/m^3), SG-5 (517 µg/m^3), SG-6 (1,036 µg/m^3), SG-7 (471 µg/m^3), and SG-8 (1,438 µg/m^3) do not exceed MTCA Method B Sub-Slab Soil Gas Screening Level of 1,500 µg/m^3.

Acetone

Sample SG-1 (63 µg/m^3), SG-2 (30 µg/m^3), SG-6 (68 µg/m^3), SG-7 (41 µg/m^3), and SG-8 (330 µg/m^3) were not compared to a screening level since a MTCA Method B Sub-Slab Soil Gas Screening Level has not been established for acetone.

Dichlorodifluoromethane

Sample SG-1 (97 µg/m^3), SG-4 (240 µg/m^3), SG-6 (14 µg/m^3), SG-7 (230 µg/m^3), and SG-8 (190 µg/m^3) do not exceed the MTCA Method B Sub-Slab Soil Gas screening level of 1,500 µg/m^3.

Methylene chloride

Sample SG-1 (830 µg/m^3) did not exceed the MTCA Method B Sub-Slab Soil Gas screening level of 2,200 µg/m^3. The result for methylene chloride for SG-1 was flagged with the following laboratory note: "*the presence of the analyte is likely due to laboratory contamination*".

Ethanol

Sample SG-6 (450 µg/m^3) and SG-8 (210 µg/m^3.) were not compared to a screening level since a MTCA Method B Sub-Slab Soil Gas Screening Level has not been established for ethanol. The result for sample SG-6 was flagged with the following laboratory note: "*the analyte response exceeded the valid instrumentation calibration range. The value reported is an estimate*".

Trichlorofluoromethane (CFC 11)

Sample SG-6 (94 µg/m^3) does not exceed the MTCA Method B screening level of 11,00 µg/m^3.

CONCLUSION

ZGA's Tier II Vapor Intrusion Investigation included installation of eight dedicated sub-slab soil vapor sampling points and analytical testing of sub-slab soil vapor at the Building 10-16 Garden Avenue Property. Laboratory results were compliant with Default MTCA Method B Sub-Slab Soil Gas Screening Levels, which are protective of indoor air quality for unrestricted land use. Based on this data, it is our opinion that the soil vapor to indoor air pathway is incomplete and does not represent a risk of exposure to future building occupants under a residential exposure scenario. Additional investigation does not appear warranted at this time.

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RELIANCE AND LIMITATIONS

This *Tier II Vapor Intrusion Investigation Technical Memorandum* has been prepared for the exclusive use of AAA Management LLC and use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the express written authorization of AAA Management LLC and ZGA.

The field observations and analytical results documented within this Technical Memorandum are based on samples collected from the locations shown on Figure 1 and at the time of sample collection. The results should not be construed as a warranty of the surface and/or subsurface conditions throughout the site or at other times. No environmental investigation can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property. This environmental investigation is intended to reduce, but not eliminate, uncertainty regarding the existence of recognized environmental conditions. Within the limitations of scope, schedule and budget, our services were performed in accordance with our *Work Plan for Environmental Consulting Services,* dated September 9, 2022, and generally accepted environmental assessment practices followed in this area at the time the report was prepared. No warranty, express or implied, is made.

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CLOSING

We are pleased to provide this Technical Memorandum. Please contact the undersigned if you have any questions or need clarification.

Sincerely,
Zipper Geo Associates, LLC

Kaelin R. Newman, L.G.
Project Geologist

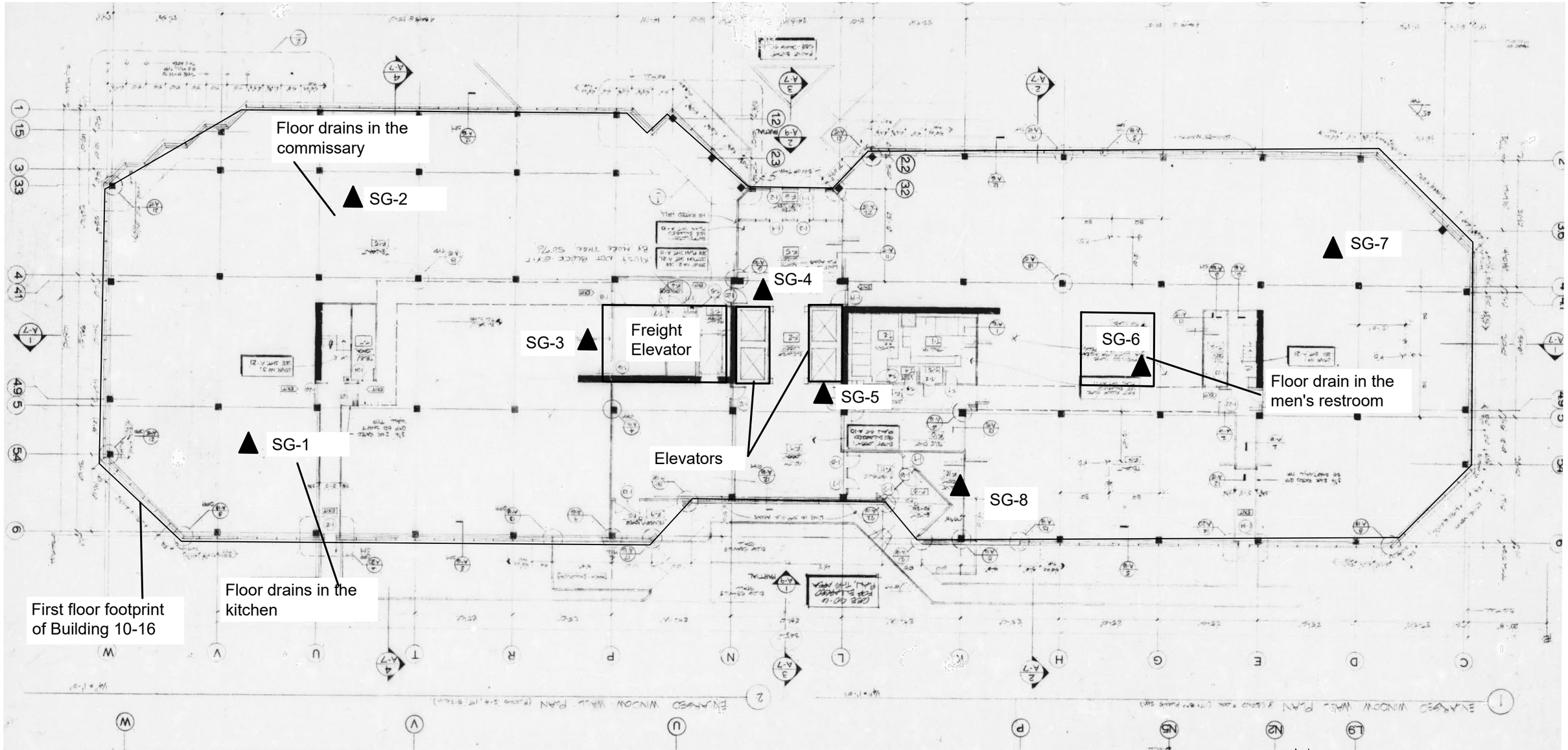
Jeffrey S. Tinklepaugh, L.G.
Senior Geologist

Charles C. Cacek, L.E.G.
Associate Geologist

Sean W. Donnan, P.G., L.E.G., L.Hg.
Principal

Enclosures:

Figure 1 - Site & Exploration Plan
Table 1 – Sub Slab Soil Vapor Analytical Results
Attachment A - Analytical Laboratory Report
Friedman & Bruya, Inc. Report No. 209246



LEGEND

SG-8 Approximate location and ID of sub slab soil gas sample

REFERENCES: First Floor Plan & Enlarged Partial Plans for Garden Plaza, prepared by Earth Beattie & Associates Architects dated October 26, 1987. Not to scale.

N

BOEING BUILDING PARCEL
Garden Avenue North and North 6th Street
Renton, WA

SITE AND EXPLORATION PLAN

DATE: OCTOBER 2022 Job No. 2509

Zipper Geo Associates, LLC
19019 36th Ave. W.,Suite E
Lynnwood, WA

FIGURE 1

Table 1. Sub-Slab Soil Gas Analytical Results
Boeing Renton - Building Parcel
ZGA Project No. 2509.23

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Matrix	Analyte	MTCA Method B Sub-Slab Soil Gas Screening Level[1] (µg/m^3)	MTCA Commercial Worker Screening Level[5] (µg/m^3)	Sub-Slab Soil Gas Sample ID							
				SG-1	SG-2	SG-3	SG-4	SG-5	SG-6	SG-7	SG-8
Soil-Gas	**Total Petroleum Hydrocarbons (µg/m^3)**										
	C5-C8 Aliphatic Hydrocarbons	NE	NE	<710	<500	<480	<490	<530	**810**	<490	**700**
	C9-C12 Aliphatic Hydrocarbons	NE	NE	<240	<170	<160	<160	<180	<160	<160	<520
	C9-C10 Aromatic Hydrocarbons	NE	NE	<240	<170	<160	<160	<180	<160	<160	<520
	Benzene	**11**	**50**	<3	<2.1	<2	<2.1	<2.3	<2	<2.1	<6.7
	Toluene	**76,000**	**650,000**	<180	<130	<120	<120	<130	<120	<120	<400
	Ethylbenzene	**15,000**	NE	**12**	<2.9	<2.8	<2.8	<3.1	<2.8	<2.8	<9.1
	m,p-Xylenes	NE	NE	**47**	<5.8	<5.6	<5.6	<6.2	<5.6	<5.6	<18
	o-Xylene	NE	NE	**15**	<2.9	<2.8	<2.8	<3.1	<2.8	<2.8	<9.1
	Total Xylenes	**1,500**	**13,000**	**62**	<5.8	<5.6	<5.6	<6.2	<5.6	<5.6	<18
	Naphthalene	**2.5**	**11**	<2.4 [J]	<1.8	<1.7	<1.7	<1.9	<1.7	<1.7	<2.4 [J]
	Total Petroleum Hydrocarbons [2]	**1,500**	**13,000**	**762**	**491**	**466**	**471**	**517**	**1,036**	**471**	**1,438**
	Volatile Organic Compounds[4] (µg/m^3)										
	1,2-Dibromoethane (EDB)	**0.14**	NE	<0.73	<0.51	<0.49	<0.5	<0.55	<0.49	<0.5	<1.6
	1,2-Dichloroethane (EDC)	**3.2**	NE	<0.38	<0.27	<0.26	<0.26	<0.29	<0.26	<0.26	<0.85
	2-Propanol (Tracer Gas)	NA[3]	NE	<82	<58	<55	<56	<56	<55	<56	<180
	Methyl tert-butyl ether (MTBE)	**320**	NE	<69	<48	<46	<47	<51	<46	<47	<150
	1,2,4-Trimethylbenzene	**910**	NE	<47	<33	<31	<32	<35	<31	<32	<100
	1,3,5-Trimethylbenzene	**910**	NE	<47	<33	<31	<32	<35	<31	<32	<100
	1,3-Butadiene	**2.8**	**13**	<0.42	<0.3	<0.28	<0.29	<0.31	<0.28	<0.29	<0.93
	2,2,4-Trimethylpentane	**NE**	NE	<44	<31	<30	<30	<33	<30	<30	<98
	2-Butanone (MEK)	**76,000**	NE	<56	<40	<38	<38	<42	<38	<38	<120
	4-Ethyltoluene	**NE**	NE	<47	<33	<31	<32	<35	<31	<32	<100
	Acetone	**NE**	NE	**63**	<32	<30	<31	<34	**68**	**41**	**330**
	Carbon Disulfide	**11,000**	NE	<59	<42	<40	<40	<44	<40	<40	<130
	Chloroform	**3.6**	**17**	<0.46	<0.33	<0.31	<0.32	<0.35	<0.31	<0.32	<1
	Cyclohexane	**91,000**	NE	<65	<46	<44	<45	<49	<44	<45	<140
	Dichlorodifluoromethane	**1,500**	NE	**97**	**30**	<6.3	**240**	<7	**14**	**230**	**190**
	Ethanol	**NE**	NE	<72	<50	<48	<49	<54	**450** [ve]	<49	**210**
	Isopropylbenzene	**NE**	NE	<93	<66	<63	<64	<70	<63	<64	<210
	n-Heptane	**6,100**	NE	<39	<27	<26	<27	<29	<26	<27	<86
	n-Hexane	**11,000**	NE	<33	<24	<23	<23	<25	<23	<23	<74
	n-Propylbenzene	**15,000**	NE	<47	<33	<31	<32	<35	<31	<32	<100
	Styrene	**15,000**	NE	<8.1	<5.7	<5.5	<5.5	<6	<5.5	<5.5	<18
	Tetrachloroethene (PCE)	**320**	NE	<64	<45	<43	<44	<48	<43	<44	<140
	Trichloroethene (TCE)	**11**	**95**	<1	<0.72	<0.69	<0.7	<0.76	<0.69	<0.7	<2.3
	Trichlorofluoromethane (CFC 11)	**11,000**	NE	<21	<15	<14	<15	<16	**94**	<15	<47
	Methylene Chloride	**2,200**	NE	**830** [ve lc]	<230	<220	<230	<250	<220	<230	<730

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<1.0	= Specified analyte not detected at or above the indicated RDL.
20.2	= Specified analyte detected above the RDL, but below the MTCA Method B Sub-Slab Screening Level.
4,700	= Specified analyte detected above the MTCA Method B Sub-Slab Screening Level (no occurances in data set).

ACRONYMS AND ABBREVIATIONS

CLARC	Cleanup Level and Risk Calculator
µg/m^3	micrograms per cubic meter
MTCA	Chapter 70A.305 RCW and its implementing regulations, the Model Toxics Control Act, Chapter 173-340 WAC.
NA	not applicable
NE	not established
RDL	laboratory reporting detection limit
TPH	total petroleum hydrocarbons
VOCs	volatile organic compounds

NOTES

1	MTCA Cleanup Regulation, CLARC data tables (updated July 2022), MTCA Method B unrestricted (residential) Sub-Slab Soil Vapor Screening Level. For MTCA Method B cleanup levels, the most conservative value of either cancer or non-cancer was used.
2	TPH concentration is calculated using 1/2 of the RDL for non-detect TPH components in accordance with Washington State Department of Ecology's *Guidance for Evaluating Vapor Intrusion in Washington State (March, 2022)* .
3	2-Propanol was utilized as a tracer gas. Concentrations of 2-Propanol in the sample imply a leak in the sampling train. However, based on New Jersey Department of Environmental Protection (NJDEP) guidance we interpret that samples with up to 100,000 µg/m3 are still representative of sub-slab soil vapor as this threshold represents a 0.1% leak and does not compromise a statistically significant portion of the overall sample volume.
4	All other compounds analyzed by EPA Method TO-15 that are not listed were not detected above the laboratory RDL.
5	MTCA Cleanup Regulation, CLARC data tables (updated July 2022), Commercial worker screening levels are risk-based concentrations for adult commercial workers in buildings that are not used for residential purposes.
J	The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
lc	The presence of the analyte is likely due to laboratory contamination.
ve	The analyte response exceeded the valid instrumentation calibration range. The value reported is an estimate.

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ATTACHMENT A

ANALYTICAL LABORATORY REPORT

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Friedman & Bruya Draft Report # 209246

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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www.friedmanandbruya.com

September 26, 2022

Chuck Cacek, Project Manager
Zipper Geo Associates, LLC
19019 36th Ave W, Suite E
Lynnwood, WA 98036

Dear Mr Cacek:

Included are the results from the testing of material submitted on September 16, 2022 from the 535 Garden Ave Renton 2509, F&BI 209246 project. There are 25 pages included in this report.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Kaelin Newman
ZGA0926R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 16, 2022 by Friedman & Bruya, Inc. from the Zipper Geo Associates, LLC 535 Garden Ave Renton 2509, F&BI 209246 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Zipper Geo Associates, LLC
209246 -01	SG1_20220916
209246 -02	SG2_20220916
209246 -03	SG3_20220916
209246 -04	SG4_20220916
209246 -05	SG5_20220916
209246 -06	SG6_20220916
209246 -07	SG7_20220916
209246 -08	SG8_20220916

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

Methylene chloride was detected in the TO-15 analysis of sample SG1_20220916. The data were flagged as due to laboratory contamination.

The ethanol concentration in sample SG6_20220916 exceeded the calibration range of the instrument. The data were flagged accordingly.

All other quality control requirements were acceptable.

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SG1_20220916	Client:	Zipper Geo Associates, LLC
Date Received:	09/16/22	Project:	535 Garden Ave Renton 2509
Date Collected:	09/16/22	Lab ID:	209246-01 1/9.5
Date Analyzed:	09/22/22	Data File:	092121.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<710
APH EC9-12 aliphatics	<240
APH EC9-10 aromatics	<240

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SG2_20220916	Client:	Zipper Geo Associates, LLC
Date Received:	09/16/22	Project:	535 Garden Ave Renton 2509
Date Collected:	09/16/22	Lab ID:	209246-02 1/6.7
Date Analyzed:	09/21/22	Data File:	092120.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<500
APH EC9-12 aliphatics	<170
APH EC9-10 aromatics	<170

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SG3_20220916	Client:	Zipper Geo Associates, LLC
Date Received:	09/16/22	Project:	535 Garden Ave Renton 2509
Date Collected:	09/16/22	Lab ID:	209246-03 1/6.4
Date Analyzed:	09/21/22	Data File:	092115.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<480
APH EC9-12 aliphatics	<160
APH EC9-10 aromatics	<160

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SG4_20220916	Client:	Zipper Geo Associates, LLC
Date Received:	09/16/22	Project:	535 Garden Ave Renton 2509
Date Collected:	09/16/22	Lab ID:	209246-04 1/6.5
Date Analyzed:	09/21/22	Data File:	092116.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<490
APH EC9-12 aliphatics	<160
APH EC9-10 aromatics	<160

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SG5_20220916	Client:	Zipper Geo Associates, LLC
Date Received:	09/16/22	Project:	535 Garden Ave Renton 2509
Date Collected:	09/16/22	Lab ID:	209246-05 1/7.1
Date Analyzed:	09/21/22	Data File:	092117.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<530
APH EC9-12 aliphatics	<180
APH EC9-10 aromatics	<180

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SG6_20220916	Client:	Zipper Geo Associates, LLC
Date Received:	09/16/22	Project:	535 Garden Ave Renton 2509
Date Collected:	09/16/22	Lab ID:	209246-06 1/6.4
Date Analyzed:	09/21/22	Data File:	092118.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	810
APH EC9-12 aliphatics	<160
APH EC9-10 aromatics	<160

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SG7_20220916	Client:	Zipper Geo Associates, LLC
Date Received:	09/16/22	Project:	535 Garden Ave Renton 2509
Date Collected:	09/16/22	Lab ID:	209246-07 1/6.5
Date Analyzed:	09/21/22	Data File:	092119.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<490
APH EC9-12 aliphatics	<160
APH EC9-10 aromatics	<160

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SG8_20220916	Client:	Zipper Geo Associates, LLC
Date Received:	09/16/22	Project:	535 Garden Ave Renton 2509
Date Collected:	09/16/22	Lab ID:	209246-08 1/21
Date Analyzed:	09/22/22	Data File:	092122.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	700
APH EC9-12 aliphatics	<520
APH EC9-10 aromatics	<520

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Zipper Geo Associates, LLC
Date Received:	Not Applicable	Project:	535 Garden Ave Renton 2509
Date Collected:	Not Applicable	Lab ID:	02-2157 MB
Date Analyzed:	09/21/22	Data File:	092113.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

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

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SG1_20220916	Client:	Zipper Geo Associates, LLC
Date Received:	09/16/22	Project:	535 Garden Ave Renton 2509
Date Collected:	09/16/22	Lab ID:	209246-01 1/9.5
Date Analyzed:	09/22/22	Data File:	092121.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Propene	<11	<6.6	1,2-Dichloropropane	<2.2	<0.47
Dichlorodifluoromethane	97	20	1,4-Dioxane	<3.4	<0.95
Chloromethane	<35	<17	2,2,4-Trimethylpentane	<44	<9.5
F-114	<20	<2.8	Methyl methacrylate	<39	<9.5
Vinyl chloride	<2.4	<0.95	Heptane	<39	<9.5
1,3-Butadiene	<0.42	<0.19	Bromodichloromethane	<0.64	<0.095
Butane	<45	<19	Trichloroethene	<1	<0.19
Bromomethane	<37	<9.5	cis-1,3-Dichloropropene	<8.6	<1.9
Chloroethane	<25	<9.5	4-Methyl-2-pentanone	<39	<9.5
Vinyl bromide	<4.2	<0.95	trans-1,3-Dichloropropene	<4.3	<0.95
Ethanol	<72	<38	Toluene	<180	<47
Acrolein	<1.1	<0.47	1,1,2-Trichloroethane	<0.52	<0.095
Pentane	<56	<19	2-Hexanone	<39	<9.5
Trichlorofluoromethane	<21	<3.8	Tetrachloroethene	<64	<9.5
Acetone	63	26	Dibromochloromethane	<0.81	<0.095
2-Propanol	<82	<33	1,2-Dibromoethane (EDB)	<0.73	<0.095
1,1-Dichloroethene	<3.8	<0.95	Chlorobenzene	<4.4	<0.95
trans-1,2-Dichloroethene	<3.8	<0.95	Ethylbenzene	12	2.8
Methylene chloride	830 ve lc	240 ve lc	1,1,2,2-Tetrachloroethane	<1.3	<0.19
t-Butyl alcohol (TBA)	<120	<38	Nonane	<50	<9.5
3-Chloropropene	<30	<9.5	Isopropylbenzene	<93	<19
CFC-113	<7.3	<0.95	2-Chlorotoluene	<49	<9.5
Carbon disulfide	<59	<19	Propylbenzene	<47	<9.5
Methyl t-butyl ether (MTBE)	<69	<19	4-Ethyltoluene	<47	<9.5
Vinyl acetate	<67	<19	m,p-Xylene	47	11
1,1-Dichloroethane	<3.8	<0.95	o-Xylene	15	3.5
cis-1,2-Dichloroethene	<3.8	<0.95	Styrene	<8.1	<1.9
Hexane	<33	<9.5	Bromoform	<20	<1.9
Chloroform	<0.46	<0.095	Benzyl chloride	<0.49	<0.095
Ethyl acetate	<68	<19	1,3,5-Trimethylbenzene	<47	<9.5
Tetrahydrofuran	<5.6	<1.9	1,2,4-Trimethylbenzene	<47	<9.5
2-Butanone (MEK)	<56	<19	1,3-Dichlorobenzene	<5.7	<0.95
1,2-Dichloroethane (EDC)	<0.38	<0.095	1,4-Dichlorobenzene	<2.2	<0.36
1,1,1-Trichloroethane	<5.2	<0.95	1,2-Dichlorobenzene	<5.7	<0.95
Carbon tetrachloride	<3	<0.47	1,2,4-Trichlorobenzene	<7.1	<0.95
Benzene	<3	<0.95	Naphthalene	<2.4 j	<0.46 j
Cyclohexane	<65	<19	Hexachlorobutadiene	<2	<0.19

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SG2_20220916	Client:	Zipper Geo Associates, LLC
Date Received:	09/16/22	Project:	535 Garden Ave Renton 2509
Date Collected:	09/16/22	Lab ID:	209246-02 1/6.7
Date Analyzed:	09/21/22	Data File:	092120.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Propene	<8.1	<4.7	1,2-Dichloropropane	<1.5	<0.33
Dichlorodifluoromethane	30	6.1	1,4-Dioxane	<2.4	<0.67
Chloromethane	<25	<12	2,2,4-Trimethylpentane	<31	<6.7
F-114	<14	<2	Methyl methacrylate	<27	<6.7
Vinyl chloride	<1.7	<0.67	Heptane	<27	<6.7
1,3-Butadiene	<0.3	<0.13	Bromodichloromethane	<0.45	<0.067
Butane	<32	<13	Trichloroethene	<0.72	<0.13
Bromomethane	<26	<6.7	cis-1,3-Dichloropropene	<6.1	<1.3
Chloroethane	<18	<6.7	4-Methyl-2-pentanone	<27	<6.7
Vinyl bromide	<2.9	<0.67	trans-1,3-Dichloropropene	<3	<0.67
Ethanol	<50	<27	Toluene	<130	<33
Acrolein	<0.77	<0.33	1,1,2-Trichloroethane	<0.37	<0.067
Pentane	<40	<13	2-Hexanone	<27	<6.7
Trichlorofluoromethane	<15	<2.7	Tetrachloroethene	<45	<6.7
Acetone	<32	<13	Dibromochloromethane	<0.57	<0.067
2-Propanol	<58	<23	1,2-Dibromoethane (EDB)	<0.51	<0.067
1,1-Dichloroethene	<2.7	<0.67	Chlorobenzene	<3.1	<0.67
trans-1,2-Dichloroethene	<2.7	<0.67	Ethylbenzene	<2.9	<0.67
Methylene chloride	<230	<67	1,1,2,2-Tetrachloroethane	<0.92	<0.13
t-Butyl alcohol (TBA)	<81	<27	Nonane	<35	<6.7
3-Chloropropene	<21	<6.7	Isopropylbenzene	<66	<13
CFC-113	<5.1	<0.67	2-Chlorotoluene	<35	<6.7
Carbon disulfide	<42	<13	Propylbenzene	<33	<6.7
Methyl t-butyl ether (MTBE)	<48	<13	4-Ethyltoluene	<33	<6.7
Vinyl acetate	<47	<13	m,p-Xylene	<5.8	<1.3
1,1-Dichloroethane	<2.7	<0.67	o-Xylene	<2.9	<0.67
cis-1,2-Dichloroethene	<2.7	<0.67	Styrene	<5.7	<1.3
Hexane	<24	<6.7	Bromoform	<14	<1.3
Chloroform	<0.33	<0.067	Benzyl chloride	<0.35	<0.067
Ethyl acetate	<48	<13	1,3,5-Trimethylbenzene	<33	<6.7
Tetrahydrofuran	<4	<1.3	1,2,4-Trimethylbenzene	<33	<6.7
2-Butanone (MEK)	<40	<13	1,3-Dichlorobenzene	<4	<0.67
1,2-Dichloroethane (EDC)	<0.27	<0.067	1,4-Dichlorobenzene	<1.5	<0.25
1,1,1-Trichloroethane	<3.7	<0.67	1,2-Dichlorobenzene	<4	<0.67
Carbon tetrachloride	<2.1	<0.33	1,2,4-Trichlorobenzene	<5	<0.67
Benzene	<2.1	<0.67	Naphthalene	<1.8	<0.33
Cyclohexane	<46	<13	Hexachlorobutadiene	<1.4	<0.13

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SG3_20220916	Client:	Zipper Geo Associates, LLC
Date Received:	09/16/22	Project:	535 Garden Ave Renton 2509
Date Collected:	09/16/22	Lab ID:	209246-03 1/6.4
Date Analyzed:	09/21/22	Data File:	092115.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Propene	<7.7	<4.5	1,2-Dichloropropane	<1.5	<0.32
Dichlorodifluoromethane	<6.3	<1.3	1,4-Dioxane	<2.3	<0.64
Chloromethane	<24	<12	2,2,4-Trimethylpentane	<30	<6.4
F-114	<13	<1.9	Methyl methacrylate	<26	<6.4
Vinyl chloride	<1.6	<0.64	Heptane	<26	<6.4
1,3-Butadiene	<0.28	<0.13	Bromodichloromethane	<0.43	<0.064
Butane	<30	<13	Trichloroethene	<0.69	<0.13
Bromomethane	<25	<6.4	cis-1,3-Dichloropropene	<5.8	<1.3
Chloroethane	<17	<6.4	4-Methyl-2-pentanone	<26	<6.4
Vinyl bromide	<2.8	<0.64	trans-1,3-Dichloropropene	<2.9	<0.64
Ethanol	<48	<26	Toluene	<120	<32
Acrolein	<0.73	<0.32	1,1,2-Trichloroethane	<0.35	<0.064
Pentane	<38	<13	2-Hexanone	<26	<6.4
Trichlorofluoromethane	<14	<2.6	Tetrachloroethene	<43	<6.4
Acetone	<30	<13	Dibromochloromethane	<0.55	<0.064
2-Propanol	<55	<22	1,2-Dibromoethane (EDB)	<0.49	<0.064
1,1-Dichloroethene	<2.5	<0.64	Chlorobenzene	<2.9	<0.64
trans-1,2-Dichloroethene	<2.5	<0.64	Ethylbenzene	<2.8	<0.64
Methylene chloride	<220	<64	1,1,2,2-Tetrachloroethane	<0.88	<0.13
t-Butyl alcohol (TBA)	<78	<26	Nonane	<34	<6.4
3-Chloropropene	<20	<6.4	Isopropylbenzene	<63	<13
CFC-113	<4.9	<0.64	2-Chlorotoluene	<33	<6.4
Carbon disulfide	<40	<13	Propylbenzene	<31	<6.4
Methyl t-butyl ether (MTBE)	<46	<13	4-Ethyltoluene	<31	<6.4
Vinyl acetate	<45	<13	m,p-Xylene	<5.6	<1.3
1,1-Dichloroethane	<2.6	<0.64	o-Xylene	<2.8	<0.64
cis-1,2-Dichloroethene	<2.5	<0.64	Styrene	<5.5	<1.3
Hexane	<23	<6.4	Bromoform	<13	<1.3
Chloroform	<0.31	<0.064	Benzyl chloride	<0.33	<0.064
Ethyl acetate	<46	<13	1,3,5-Trimethylbenzene	<31	<6.4
Tetrahydrofuran	<3.8	<1.3	1,2,4-Trimethylbenzene	<31	<6.4
2-Butanone (MEK)	<38	<13	1,3-Dichlorobenzene	<3.8	<0.64
1,2-Dichloroethane (EDC)	<0.26	<0.064	1,4-Dichlorobenzene	<1.5	<0.24
1,1,1-Trichloroethane	<3.5	<0.64	1,2-Dichlorobenzene	<3.8	<0.64
Carbon tetrachloride	<2	<0.32	1,2,4-Trichlorobenzene	<4.7	<0.64
Benzene	<2	<0.64	Naphthalene	<1.7	<0.32
Cyclohexane	<44	<13	Hexachlorobutadiene	<1.4	<0.13

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SG4_20220916	Client:	Zipper Geo Associates, LLC
Date Received:	09/16/22	Project:	535 Garden Ave Renton 2509
Date Collected:	09/16/22	Lab ID:	209246-04 1/6.5
Date Analyzed:	09/21/22	Data File:	092116.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Propene	<7.8	<4.5	1,2-Dichloropropane	<1.5	<0.32
Dichlorodifluoromethane	240	48	1,4-Dioxane	<2.3	<0.65
Chloromethane	<24	<12	2,2,4-Trimethylpentane	<30	<6.5
F-114	<14	<1.9	Methyl methacrylate	<27	<6.5
Vinyl chloride	<1.7	<0.65	Heptane	<27	<6.5
1,3-Butadiene	<0.29	<0.13	Bromodichloromethane	<0.44	<0.065
Butane	<31	<13	Trichloroethene	<0.7	<0.13
Bromomethane	<25	<6.5	cis-1,3-Dichloropropene	<5.9	<1.3
Chloroethane	<17	<6.5	4-Methyl-2-pentanone	<27	<6.5
Vinyl bromide	<2.8	<0.65	trans-1,3-Dichloropropene	<3	<0.65
Ethanol	<49	<26	Toluene	<120	<32
Acrolein	<0.75	<0.32	1,1,2-Trichloroethane	<0.35	<0.065
Pentane	<38	<13	2-Hexanone	<27	<6.5
Trichlorofluoromethane	<15	<2.6	Tetrachloroethene	<44	<6.5
Acetone	<31	<13	Dibromochloromethane	<0.55	<0.065
2-Propanol	<56	<23	1,2-Dibromoethane (EDB)	<0.5	<0.065
1,1-Dichloroethene	<2.6	<0.65	Chlorobenzene	<3	<0.65
trans-1,2-Dichloroethene	<2.6	<0.65	Ethylbenzene	<2.8	<0.65
Methylene chloride	<230	<65	1,1,2,2-Tetrachloroethane	<0.89	<0.13
t-Butyl alcohol (TBA)	<79	<26	Nonane	<34	<6.5
3-Chloropropene	<20	<6.5	Isopropylbenzene	<64	<13
CFC-113	<5	<0.65	2-Chlorotoluene	<34	<6.5
Carbon disulfide	<40	<13	Propylbenzene	<32	<6.5
Methyl t-butyl ether (MTBE)	<47	<13	4-Ethyltoluene	<32	<6.5
Vinyl acetate	<46	<13	m,p-Xylene	<5.6	<1.3
1,1-Dichloroethane	<2.6	<0.65	o-Xylene	<2.8	<0.65
cis-1,2-Dichloroethene	<2.6	<0.65	Styrene	<5.5	<1.3
Hexane	<23	<6.5	Bromoform	<13	<1.3
Chloroform	<0.32	<0.065	Benzyl chloride	<0.34	<0.065
Ethyl acetate	<47	<13	1,3,5-Trimethylbenzene	<32	<6.5
Tetrahydrofuran	<3.8	<1.3	1,2,4-Trimethylbenzene	<32	<6.5
2-Butanone (MEK)	<38	<13	1,3-Dichlorobenzene	<3.9	<0.65
1,2-Dichloroethane (EDC)	<0.26	<0.065	1,4-Dichlorobenzene	<1.5	<0.25
1,1,1-Trichloroethane	<3.5	<0.65	1,2-Dichlorobenzene	<3.9	<0.65
Carbon tetrachloride	<2	<0.32	1,2,4-Trichlorobenzene	<4.8	<0.65
Benzene	<2.1	<0.65	Naphthalene	<1.7	<0.32
Cyclohexane	<45	<13	Hexachlorobutadiene	<1.4	<0.13

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SG5_20220916	Client:	Zipper Geo Associates, LLC
Date Received:	09/16/22	Project:	535 Garden Ave Renton 2509
Date Collected:	09/16/22	Lab ID:	209246-05 1/7.1
Date Analyzed:	09/21/22	Data File:	092117.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Propene	<8.6	<5	1,2-Dichloropropane	<1.6	<0.35
Dichlorodifluoromethane	<7	<1.4	1,4-Dioxane	<2.6	<0.71
Chloromethane	<26	<13	2,2,4-Trimethylpentane	<33	<7.1
F-114	<15	<2.1	Methyl methacrylate	<29	<7.1
Vinyl chloride	<1.8	<0.71	Heptane	<29	<7.1
1,3-Butadiene	<0.31	<0.14	Bromodichloromethane	<0.48	<0.071
Butane	<34	<14	Trichloroethene	<0.76	<0.14
Bromomethane	<28	<7.1	cis-1,3-Dichloropropene	<6.4	<1.4
Chloroethane	<19	<7.1	4-Methyl-2-pentanone	<29	<7.1
Vinyl bromide	<3.1	<0.71	trans-1,3-Dichloropropene	<3.2	<0.71
Ethanol	<54	<28	Toluene	<130	<35
Acrolein	<0.81	<0.35	1,1,2-Trichloroethane	<0.39	<0.071
Pentane	<42	<14	2-Hexanone	<29	<7.1
Trichlorofluoromethane	<16	<2.8	Tetrachloroethene	<48	<7.1
Acetone	<34	<14	Dibromochloromethane	<0.6	<0.071
2-Propanol	<56	<23	1,2-Dibromoethane (EDB)	<0.55	<0.071
1,1-Dichloroethene	<2.8	<0.71	Chlorobenzene	<3.3	<0.71
trans-1,2-Dichloroethene	<2.8	<0.71	Ethylbenzene	<3.1	<0.71
Methylene chloride	<250	<71	1,1,2,2-Tetrachloroethane	<0.97	<0.14
t-Butyl alcohol (TBA)	<86	<28	Nonane	<37	<7.1
3-Chloropropene	<22	<7.1	Isopropylbenzene	<70	<14
CFC-113	<5.4	<0.71	2-Chlorotoluene	<37	<7.1
Carbon disulfide	<44	<14	Propylbenzene	<35	<7.1
Methyl t-butyl ether (MTBE)	<51	<14	4-Ethyltoluene	<35	<7.1
Vinyl acetate	<50	<14	m,p-Xylene	<6.2	<1.4
1,1-Dichloroethane	<2.9	<0.71	o-Xylene	<3.1	<0.71
cis-1,2-Dichloroethene	<2.8	<0.71	Styrene	<6	<1.4
Hexane	<25	<7.1	Bromoform	<15	<1.4
Chloroform	<0.35	<0.071	Benzyl chloride	<0.37	<0.071
Ethyl acetate	<51	<14	1,3,5-Trimethylbenzene	<35	<7.1
Tetrahydrofuran	<4.2	<1.4	1,2,4-Trimethylbenzene	<35	<7.1
2-Butanone (MEK)	<42	<14	1,3-Dichlorobenzene	<4.3	<0.71
1,2-Dichloroethane (EDC)	<0.29	<0.071	1,4-Dichlorobenzene	<1.6	<0.27
1,1,1-Trichloroethane	<3.9	<0.71	1,2-Dichlorobenzene	<4.3	<0.71
Carbon tetrachloride	<2.2	<0.35	1,2,4-Trichlorobenzene	<5.3	<0.71
Benzene	<2.3	<0.71	Naphthalene	<1.9	<0.35
Cyclohexane	<49	<14	Hexachlorobutadiene	<1.5	<0.14

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SG6_20220916	Client:	Zipper Geo Associates, LLC
Date Received:	09/16/22	Project:	535 Garden Ave Renton 2509
Date Collected:	09/16/22	Lab ID:	209246-06 1/6.4
Date Analyzed:	09/21/22	Data File:	092118.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Propene	<7.7	<4.5	1,2-Dichloropropane	<1.5	<0.32
Dichlorodifluoromethane	14	2.8	1,4-Dioxane	<2.3	<0.64
Chloromethane	<24	<12	2,2,4-Trimethylpentane	<30	<6.4
F-114	<13	<1.9	Methyl methacrylate	<26	<6.4
Vinyl chloride	<1.6	<0.64	Heptane	<26	<6.4
1,3-Butadiene	<0.28	<0.13	Bromodichloromethane	<0.43	<0.064
Butane	<30	<13	Trichloroethene	<0.69	<0.13
Bromomethane	<25	<6.4	cis-1,3-Dichloropropene	<5.8	<1.3
Chloroethane	<17	<6.4	4-Methyl-2-pentanone	<26	<6.4
Vinyl bromide	<2.8	<0.64	trans-1,3-Dichloropropene	<2.9	<0.64
Ethanol	450 ve	240 ve	Toluene	<120	<32
Acrolein	<0.73	<0.32	1,1,2-Trichloroethane	<0.35	<0.064
Pentane	<38	<13	2-Hexanone	<26	<6.4
Trichlorofluoromethane	94	17	Tetrachloroethene	<43	<6.4
Acetone	68	29	Dibromochloromethane	<0.55	<0.064
2-Propanol	<55	<22	1,2-Dibromoethane (EDB)	<0.49	<0.064
1,1-Dichloroethene	<2.5	<0.64	Chlorobenzene	<2.9	<0.64
trans-1,2-Dichloroethene	<2.5	<0.64	Ethylbenzene	<2.8	<0.64
Methylene chloride	<220	<64	1,1,2,2-Tetrachloroethane	<0.88	<0.13
t-Butyl alcohol (TBA)	<78	<26	Nonane	<34	<6.4
3-Chloropropene	<20	<6.4	Isopropylbenzene	<63	<13
CFC-113	<4.9	<0.64	2-Chlorotoluene	<33	<6.4
Carbon disulfide	<40	<13	Propylbenzene	<31	<6.4
Methyl t-butyl ether (MTBE)	<46	<13	4-Ethyltoluene	<31	<6.4
Vinyl acetate	<45	<13	m,p-Xylene	<5.6	<1.3
1,1-Dichloroethane	<2.6	<0.64	o-Xylene	<2.8	<0.64
cis-1,2-Dichloroethene	<2.5	<0.64	Styrene	<5.5	<1.3
Hexane	<23	<6.4	Bromoform	<13	<1.3
Chloroform	<0.31	<0.064	Benzyl chloride	<0.33	<0.064
Ethyl acetate	<46	<13	1,3,5-Trimethylbenzene	<31	<6.4
Tetrahydrofuran	<3.8	<1.3	1,2,4-Trimethylbenzene	<31	<6.4
2-Butanone (MEK)	<38	<13	1,3-Dichlorobenzene	<3.8	<0.64
1,2-Dichloroethane (EDC)	<0.26	<0.064	1,4-Dichlorobenzene	<1.5	<0.24
1,1,1-Trichloroethane	<3.5	<0.64	1,2-Dichlorobenzene	<3.8	<0.64
Carbon tetrachloride	<2	<0.32	1,2,4-Trichlorobenzene	<4.7	<0.64
Benzene	<2	<0.64	Naphthalene	<1.7	<0.32
Cyclohexane	<44	<13	Hexachlorobutadiene	<1.4	<0.13

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SG7_20220916	Client:	Zipper Geo Associates, LLC
Date Received:	09/16/22	Project:	535 Garden Ave Renton 2509
Date Collected:	09/16/22	Lab ID:	209246-07 1/6.5
Date Analyzed:	09/21/22	Data File:	092119.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Propene	<7.8	<4.5	1,2-Dichloropropane	<1.5	<0.32
Dichlorodifluoromethane	230	46	1,4-Dioxane	<2.3	<0.65
Chloromethane	<24	<12	2,2,4-Trimethylpentane	<30	<6.5
F-114	<14	<1.9	Methyl methacrylate	<27	<6.5
Vinyl chloride	<1.7	<0.65	Heptane	<27	<6.5
1,3-Butadiene	<0.29	<0.13	Bromodichloromethane	<0.44	<0.065
Butane	<31	<13	Trichloroethene	<0.7	<0.13
Bromomethane	<25	<6.5	cis-1,3-Dichloropropene	<5.9	<1.3
Chloroethane	<17	<6.5	4-Methyl-2-pentanone	<27	<6.5
Vinyl bromide	<2.8	<0.65	trans-1,3-Dichloropropene	<3	<0.65
Ethanol	<49	<26	Toluene	<120	<32
Acrolein	<0.75	<0.32	1,1,2-Trichloroethane	<0.35	<0.065
Pentane	<38	<13	2-Hexanone	<27	<6.5
Trichlorofluoromethane	<15	<2.6	Tetrachloroethene	<44	<6.5
Acetone	41	17	Dibromochloromethane	<0.55	<0.065
2-Propanol	<56	<23	1,2-Dibromoethane (EDB)	<0.5	<0.065
1,1-Dichloroethene	<2.6	<0.65	Chlorobenzene	<3	<0.65
trans-1,2-Dichloroethene	<2.6	<0.65	Ethylbenzene	<2.8	<0.65
Methylene chloride	<230	<65	1,1,2,2-Tetrachloroethane	<0.89	<0.13
t-Butyl alcohol (TBA)	<79	<26	Nonane	<34	<6.5
3-Chloropropene	<20	<6.5	Isopropylbenzene	<64	<13
CFC-113	<5	<0.65	2-Chlorotoluene	<34	<6.5
Carbon disulfide	<40	<13	Propylbenzene	<32	<6.5
Methyl t-butyl ether (MTBE)	<47	<13	4-Ethyltoluene	<32	<6.5
Vinyl acetate	<46	<13	m,p-Xylene	<5.6	<1.3
1,1-Dichloroethane	<2.6	<0.65	o-Xylene	<2.8	<0.65
cis-1,2-Dichloroethene	<2.6	<0.65	Styrene	<5.5	<1.3
Hexane	<23	<6.5	Bromoform	<13	<1.3
Chloroform	<0.32	<0.065	Benzyl chloride	<0.34	<0.065
Ethyl acetate	<47	<13	1,3,5-Trimethylbenzene	<32	<6.5
Tetrahydrofuran	<3.8	<1.3	1,2,4-Trimethylbenzene	<32	<6.5
2-Butanone (MEK)	<38	<13	1,3-Dichlorobenzene	<3.9	<0.65
1,2-Dichloroethane (EDC)	<0.26	<0.065	1,4-Dichlorobenzene	<1.5	<0.25
1,1,1-Trichloroethane	<3.5	<0.65	1,2-Dichlorobenzene	<3.9	<0.65
Carbon tetrachloride	<2	<0.32	1,2,4-Trichlorobenzene	<4.8	<0.65
Benzene	<2.1	<0.65	Naphthalene	<1.7	<0.32
Cyclohexane	<45	<13	Hexachlorobutadiene	<1.4	<0.13

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SG8_20220916	Client:	Zipper Geo Associates, LLC
Date Received:	09/16/22	Project:	535 Garden Ave Renton 2509
Date Collected:	09/16/22	Lab ID:	209246-08 1/21
Date Analyzed:	09/22/22	Data File:	092122.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Propene	<25	<15	1,2-Dichloropropane	<4.9	<1
Dichlorodifluoromethane	190	39	1,4-Dioxane	<7.6	<2.1
Chloromethane	<78	<38	2,2,4-Trimethylpentane	<98	<21
F-114	<44	<6.3	Methyl methacrylate	<86	<21
Vinyl chloride	<5.4	<2.1	Heptane	<86	<21
1,3-Butadiene	<0.93	<0.42	Bromodichloromethane	<1.4	<0.21
Butane	<100	<42	Trichloroethene	<2.3	<0.42
Bromomethane	<82	<21	cis-1,3-Dichloropropene	<19	<4.2
Chloroethane	<55	<21	4-Methyl-2-pentanone	<86	<21
Vinyl bromide	<9.2	<2.1	trans-1,3-Dichloropropene	<9.5	<2.1
Ethanol	210	110	Toluene	<400	<100
Acrolein	<2.4	<1	1,1,2-Trichloroethane	<1.1	<0.21
Pentane	<120	<42	2-Hexanone	<86	<21
Trichlorofluoromethane	<47	<8.4	Tetrachloroethene	<140	<21
Acetone	330	140	Dibromochloromethane	<1.8	<0.21
2-Propanol	<180	<73	1,2-Dibromoethane (EDB)	<1.6	<0.21
1,1-Dichloroethene	<8.3	<2.1	Chlorobenzene	<9.7	<2.1
trans-1,2-Dichloroethene	<8.3	<2.1	Ethylbenzene	<9.1	<2.1
Methylene chloride	<730	<210	1,1,2,2-Tetrachloroethane	<2.9	<0.42
t-Butyl alcohol (TBA)	<250	<84	Nonane	<110	<21
3-Chloropropene	<66	<21	Isopropylbenzene	<210	<42
CFC-113	<16	<2.1	2-Chlorotoluene	<110	<21
Carbon disulfide	<130	<42	Propylbenzene	<100	<21
Methyl t-butyl ether (MTBE)	<150	<42	4-Ethyltoluene	<100	<21
Vinyl acetate	<150	<42	m,p-Xylene	<18	<4.2
1,1-Dichloroethane	<8.5	<2.1	o-Xylene	<9.1	<2.1
cis-1,2-Dichloroethene	<8.3	<2.1	Styrene	<18	<4.2
Hexane	<74	<21	Bromoform	<43	<4.2
Chloroform	<1	<0.21	Benzyl chloride	<1.1	<0.21
Ethyl acetate	<150	<42	1,3,5-Trimethylbenzene	<100	<21
Tetrahydrofuran	<12	<4.2	1,2,4-Trimethylbenzene	<100	<21
2-Butanone (MEK)	<120	<42	1,3-Dichlorobenzene	<13	<2.1
1,2-Dichloroethane (EDC)	<0.85	<0.21	1,4-Dichlorobenzene	<4.8	<0.8
1,1,1-Trichloroethane	<11	<2.1	1,2-Dichlorobenzene	<13	<2.1
Carbon tetrachloride	<6.6	<1	1,2,4-Trichlorobenzene	<16	<2.1
Benzene	<6.7	<2.1	Naphthalene	<2.4 j	<0.46 j
Cyclohexane	<140	<42	Hexachlorobutadiene	<4.5	<0.42

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Zipper Geo Associates, LLC
Date Received:	Not Applicable	Project:	535 Garden Ave Renton 2509
Date Collected:	Not Applicable	Lab ID:	02-2157 MB
Date Analyzed:	09/21/22	Data File:	092113.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Propene	<1.2	<0.7	1,2-Dichloropropane	<0.23	<0.05
Dichlorodifluoromethane	<0.99	<0.2	1,4-Dioxane	<0.36	<0.1
Chloromethane	<3.7	<1.8	2,2,4-Trimethylpentane	<4.7	<1
F-114	<2.1	<0.3	Methyl methacrylate	<4.1	<1
Vinyl chloride	<0.26	<0.1	Heptane	<4.1	<1
1,3-Butadiene	<0.044	<0.02	Bromodichloromethane	<0.067	<0.01
Butane	<4.8	<2	Trichloroethene	<0.11	<0.02
Bromomethane	<3.9	<1	cis-1,3-Dichloropropene	<0.91	<0.2
Chloroethane	<2.6	<1	4-Methyl-2-pentanone	<4.1	<1
Vinyl bromide	<0.44	<0.1	trans-1,3-Dichloropropene	<0.45	<0.1
Ethanol	<7.5	<4	Toluene	<19	<5
Acrolein	<0.11	<0.05	1,1,2-Trichloroethane	<0.055	<0.01
Pentane	<5.9	<2	2-Hexanone	<4.1	<1
Trichlorofluoromethane	<2.2	<0.4	Tetrachloroethene	<6.8	<1
Acetone	<4.8	<2	Dibromochloromethane	<0.085	<0.01
2-Propanol	<8.6	<3.5	1,2-Dibromoethane (EDB)	<0.077	<0.01
1,1-Dichloroethene	<0.4	<0.1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	<0.43	<0.1
Methylene chloride	<35	<10	1,1,2,2-Tetrachloroethane	<0.14	<0.02
t-Butyl alcohol (TBA)	<12	<4	Nonane	<5.2	<1
3-Chloropropene	<3.1	<1	Isopropylbenzene	<9.8	<2
CFC-113	<0.77	<0.1	2-Chlorotoluene	<5.2	<1
Carbon disulfide	<6.2	<2	Propylbenzene	<4.9	<1
Methyl t-butyl ether (MTBE)	<7.2	<2	4-Ethyltoluene	<4.9	<1
Vinyl acetate	<7	<2	m,p-Xylene	<0.87	<0.2
1,1-Dichloroethane	<0.4	<0.1	o-Xylene	<0.43	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1	Styrene	<0.85	<0.2
Hexane	<3.5	<1	Bromoform	<2.1	<0.2
Chloroform	<0.049	<0.01	Benzyl chloride	<0.052	<0.01
Ethyl acetate	<7.2	<2	1,3,5-Trimethylbenzene	<4.9	<1
Tetrahydrofuran	<0.59	<0.2	1,2,4-Trimethylbenzene	<4.9	<1
2-Butanone (MEK)	<5.9	<2	1,3-Dichlorobenzene	<0.6	<0.1
1,2-Dichloroethane (EDC)	<0.04	<0.01	1,4-Dichlorobenzene	<0.23	<0.038
1,1,1-Trichloroethane	<0.55	<0.1	1,2-Dichlorobenzene	<0.6	<0.1
Carbon tetrachloride	<0.31	<0.05	1,2,4-Trichlorobenzene	<0.74	<0.1
Benzene	<0.32	<0.1	Naphthalene	<0.1 j	<0.02 j
Cyclohexane	<6.9	<2	Hexachlorobutadiene	<0.21	<0.02

Date of Report: 09/26/22
Date Received: 09/16/22
Project: 535 Garden Ave Renton 2509, F&BI 209246

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

Laboratory Code: 209246-03 1/6.4 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
APH EC5-8 aliphatics	ug/m3	<480	<480	nm
APH EC9-12 aliphatics	ug/m3	<160	<160	nm
APH EC9-10 aromatics	ug/m3	<160	<160	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	67	104	70-130
APH EC9-12 aliphatics	ug/m3	67	124	70-130
APH EC9-10 aromatics	ug/m3	67	102	70-130

Date of Report: 09/26/22
Date Received: 09/16/22
Project: 535 Garden Ave Renton 2509, F&BI 209246

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

Laboratory Code: 209246-03 1/6.4 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Propene	ug/m3	<7.7	<7.7	nm
Dichlorodifluoromethane	ug/m3	<6.3	<6.3	nm
Chloromethane	ug/m3	<24	<24	nm
F-114	ug/m3	<13	<13	nm
Vinyl chloride	ug/m3	<1.6	<1.6	nm
1,3-Butadiene	ug/m3	<0.28	<0.28	nm
Butane	ug/m3	<30	<30	nm
Bromomethane	ug/m3	<25	<25	nm
Chloroethane	ug/m3	<17	<17	nm
Vinyl bromide	ug/m3	<2.8	<2.8	nm
Ethanol	ug/m3	<48	<48	nm
Acrolein	ug/m3	<0.73	<0.73	nm
Pentane	ug/m3	<38	<38	nm
Trichlorofluoromethane	ug/m3	<14	<14	nm
Acetone	ug/m3	<30	<30	nm
2-Propanol	ug/m3	<55	<55	nm
1,1-Dichloroethene	ug/m3	<2.5	<2.5	nm
trans-1,2-Dichloroethene	ug/m3	<2.5	<2.5	nm
Methylene chloride	ug/m3	<220	<220	nm
t-Butyl alcohol (TBA)	ug/m3	<78	<78	nm
3-Chloropropene	ug/m3	<20	<20	nm
CFC-113	ug/m3	<4.9	<4.9	nm
Carbon disulfide	ug/m3	<40	<40	nm
Methyl t-butyl ether (MTBE)	ug/m3	<46	<46	nm
Vinyl acetate	ug/m3	<45	<45	nm
1,1-Dichloroethane	ug/m3	<2.6	<2.6	nm
cis-1,2-Dichloroethene	ug/m3	<2.5	<2.5	nm
Hexane	ug/m3	<23	<23	nm
Chloroform	ug/m3	<0.31	<0.31	nm
Ethyl acetate	ug/m3	<46	<46	nm
Tetrahydrofuran	ug/m3	<3.8	<3.8	nm
2-Butanone (MEK)	ug/m3	<38	<38	nm
1,2-Dichloroethane (EDC)	ug/m3	<0.26	<0.26	nm
1,1,1-Trichloroethane	ug/m3	<3.5	<3.5	nm
Carbon tetrachloride	ug/m3	<2	<2	nm
Benzene	ug/m3	<2	<2	nm
Cyclohexane	ug/m3	<44	<44	nm
1,2-Dichloropropane	ug/m3	<1.5	<1.5	nm
1,4-Dioxane	ug/m3	<2.3	<2.3	nm
2,2,4-Trimethylpentane	ug/m3	<30	<30	nm

Date of Report: 09/26/22
Date Received: 09/16/22
Project: 535 Garden Ave Renton 2509, F&BI 209246

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

Laboratory Code: 209246-03 1/6.4 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Methyl methacrylate	ug/m3	<26	<26	nm
Heptane	ug/m3	<26	<26	nm
Bromodichloromethane	ug/m3	<0.43	<0.43	nm
Trichloroethene	ug/m3	<0.69	<0.69	nm
cis-1,3-Dichloropropene	ug/m3	<5.8	<5.8	nm
4-Methyl-2-pentanone	ug/m3	<26	<26	nm
trans-1,3-Dichloropropene	ug/m3	<2.9	<2.9	nm
Toluene	ug/m3	<120	<120	nm
1,1,2-Trichloroethane	ug/m3	<0.35	<0.35	nm
2-Hexanone	ug/m3	<26	<26	nm
Tetrachloroethene	ug/m3	<43	<43	nm
Dibromochloromethane	ug/m3	<0.55	<0.55	nm
1,2-Dibromoethane (EDB)	ug/m3	<0.49	<0.49	nm
Chlorobenzene	ug/m3	<2.9	<2.9	nm
Ethylbenzene	ug/m3	<2.8	<2.8	nm
1,1,2,2-Tetrachloroethane	ug/m3	<0.88	<0.88	nm
Nonane	ug/m3	<34	<34	nm
Isopropylbenzene	ug/m3	<63	<63	nm
2-Chlorotoluene	ug/m3	<33	<33	nm
Propylbenzene	ug/m3	<31	<31	nm
4-Ethyltoluene	ug/m3	<31	<31	nm
m,p-Xylene	ug/m3	<5.6	<5.6	nm
o-Xylene	ug/m3	<2.8	<2.8	nm
Styrene	ug/m3	<5.5	<5.5	nm
Bromoform	ug/m3	<13	<13	nm
Benzyl chloride	ug/m3	<0.33	<0.33	nm
1,3,5-Trimethylbenzene	ug/m3	<31	<31	nm
1,2,4-Trimethylbenzene	ug/m3	<31	<31	nm
1,3-Dichlorobenzene	ug/m3	<3.8	<3.8	nm
1,4-Dichlorobenzene	ug/m3	<1.5	<1.5	nm
1,2-Dichlorobenzene	ug/m3	<3.8	<3.8	nm
1,2,4-Trichlorobenzene	ug/m3	<4.7	<4.7	nm
Naphthalene	ug/m3	<1.7	<1.7	nm
Hexachlorobutadiene	ug/m3	<1.4	<1.4	nm

Date of Report: 09/26/22
Date Received: 09/16/22
Project: 535 Garden Ave Renton 2509, F&BI 209246

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Propene	ug/m3	23	99	70-130
Dichlorodifluoromethane	ug/m3	67	110	70-130
Chloromethane	ug/m3	28	97	70-130
F-114	ug/m3	94	104	70-130
Vinyl chloride	ug/m3	35	107	70-130
1,3-Butadiene	ug/m3	30	99	70-130
Butane	ug/m3	32	100	70-130
Bromomethane	ug/m3	52	110	70-130
Chloroethane	ug/m3	36	105	70-130
Vinyl bromide	ug/m3	59	100	70-130
Ethanol	ug/m3	25	94	70-130
Acrolein	ug/m3	31	102	70-130
Pentane	ug/m3	40	100	70-130
Trichlorofluoromethane	ug/m3	76	112	70-130
Acetone	ug/m3	32	101	70-130
2-Propanol	ug/m3	33	98	70-130
1,1-Dichloroethene	ug/m3	54	107	70-130
trans-1,2-Dichloroethene	ug/m3	54	103	70-130
Methylene chloride	ug/m3	94	95	70-130
t-Butyl alcohol (TBA)	ug/m3	41	95	70-130
3-Chloropropene	ug/m3	42	98	70-130
CFC-113	ug/m3	100	106	70-130
Carbon disulfide	ug/m3	42	113	70-130
Methyl t-butyl ether (MTBE)	ug/m3	49	92	70-130
Vinyl acetate	ug/m3	48	95	70-130
1,1-Dichloroethane	ug/m3	55	109	70-130
cis-1,2-Dichloroethene	ug/m3	54	101	70-130
Hexane	ug/m3	48	94	70-130
Chloroform	ug/m3	66	109	70-130
Ethyl acetate	ug/m3	49	97	70-130
Tetrahydrofuran	ug/m3	40	97	70-130
2-Butanone (MEK)	ug/m3	40	110	70-130
1,2-Dichloroethane (EDC)	ug/m3	55	110	70-130
1,1,1-Trichloroethane	ug/m3	74	108	70-130
Carbon tetrachloride	ug/m3	85	110	70-130
Benzene	ug/m3	43	98	70-130
Cyclohexane	ug/m3	46	84	70-130
1,2-Dichloropropane	ug/m3	62	108	70-130
1,4-Dioxane	ug/m3	49	99	70-130
2,2,4-Trimethylpentane	ug/m3	63	100	70-130

Date of Report: 09/26/22
Date Received: 09/16/22
Project: 535 Garden Ave Renton 2509, F&BI 209246

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Methyl methacrylate	ug/m3	55	99	70-130
Heptane	ug/m3	55	99	70-130
Bromodichloromethane	ug/m3	90	115	70-130
Trichloroethene	ug/m3	73	107	70-130
cis-1,3-Dichloropropene	ug/m3	61	107	70-130
4-Methyl-2-pentanone	ug/m3	55	101	70-130
trans-1,3-Dichloropropene	ug/m3	61	107	70-130
Toluene	ug/m3	51	96	70-130
1,1,2-Trichloroethane	ug/m3	74	112	70-130
2-Hexanone	ug/m3	55	101	70-130
Tetrachloroethene	ug/m3	92	111	70-130
Dibromochloromethane	ug/m3	120	109	70-130
1,2-Dibromoethane (EDB)	ug/m3	100	106	70-130
Chlorobenzene	ug/m3	62	108	70-130
Ethylbenzene	ug/m3	59	95	70-130
1,1,2,2-Tetrachloroethane	ug/m3	93	109	70-130
Nonane	ug/m3	71	97	70-130
Isopropylbenzene	ug/m3	66	100	70-130
2-Chlorotoluene	ug/m3	70	98	70-130
Propylbenzene	ug/m3	66	102	70-130
4-Ethyltoluene	ug/m3	66	93	70-130
m,p-Xylene	ug/m3	120	98	70-130
o-Xylene	ug/m3	59	98	70-130
Styrene	ug/m3	58	92	70-130
Bromoform	ug/m3	140	98	70-130
Benzyl chloride	ug/m3	70	109	70-130
1,3,5-Trimethylbenzene	ug/m3	66	103	70-130
1,2,4-Trimethylbenzene	ug/m3	66	95	70-130
1,3-Dichlorobenzene	ug/m3	81	115	70-130
1,4-Dichlorobenzene	ug/m3	81	112	70-130
1,2-Dichlorobenzene	ug/m3	81	108	70-130
1,2,4-Trichlorobenzene	ug/m3	100	94	70-130
Naphthalene	ug/m3	71	95	70-130
Hexachlorobutadiene	ug/m3	140	105	70-130

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SAMPLE CHAIN OF CUSTODY

2092.06

Report To Chuck, Kaelin

Company ZGA

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*) 09/16/22

PROJECT NAME & ADDRESS: 535 Garden Ave Rental

PO #: 2509

NOTES:

INVOICE TO

Page # 1 of 1

TURNAROUND TIME
☒ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Default: Clean following final report delivery
☐ Hold (Fee may apply):

SAMPLE INFORMATION										ANALYSIS REQUESTED						
Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium		Notes
SG1_20220916	01	3673	60	IA / (SG)	9/16/22	28	0906	6.5	0908	X			X			
SG2_20220916	02	3483	65	IA / SG		29	0925	7	0929	X			X			
SG3_20220916	03	3252	242	IA / SG		30	1011	6.	1016	X			X			
SG4_20220916	04	8211	50	IA / SG		30	0942	6.5	0947	X			X			
SG5_20220916	05	2302	305	IA / SG		28	0957	6.5	1001	X			X			
SG6_20220916	06	3259	62	IA / SG		30	1024	6.5	1028	X			X			
SG7_20220916	07	2298	67	IA / SG		30	1037	7	1041	X			X			
SG8_20220916	08	3672	224	IA / SG	↓	30	1050	7	1054	X			X			

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Kaelin Newman	ZGA	9/16/22	1230
Received by:	Michael Edahl	F&B	↓	1230
Relinquished by:				
Received by:		Samples received at 18 °C		

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

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