

May 9, 2017

Gavora, Inc.
246 Illinois Street, #3B
Fairbanks, AK, 99707

Attn: Mr. Rudy Gavora

**RE: INDOOR-AIR AND CRAWLSPACE-AIR SAMPLING SUMMARY REPORT,
SHOPPER'S FORUM MALL, ADEC FILE NO. 102.38.100**

Shannon & Wilson is pleased to present this summary report for indoor-air and crawlspace-air monitoring at the Shopper's Forum Mall Annex (Annex), located at 1255 Airport Way, in Fairbanks, Alaska. The objective of our work was to monitor concentrations of tetrachloroethene (PCE), trichloroethene (TCE), and related compounds (namely 1,1-dichloroethene; cis-1,2-dichloroethene; and trans-1,2-dichloroethene) in crawlspace and indoor-air at the Annex. Our scope of services for this project included:

- collecting indoor- and crawlspace-air samples at select locations within the Annex; and
- preparing this summary report documenting sampling activities and analytical results.

We completed our scope of services in accordance with our proposal dated December 12, 2016. We performed these sampling activities following our July 2013 *Site Characterization and Vapor-Intrusion Monitoring Work Plan*; which was reviewed and approved by the Alaska Department of Conservation (ADEC).

SAMPLING AND OBSERVATIONS

On March 22 and 23, 2017, Seth Robinson, a geologist from Shannon & Wilson's Fairbanks office performed the sampling described herein. We deployed the Radiello® 130 passive samplers for approximately 24 hours. We deployed the samplers in the breathing space (head height) in discrete but representative locations within each unit and crawlspace. These passive samplers consist of an outer cylindrical diffusive surface (porous polypropylene) surrounding an interior adsorbing surface. Air constituents small enough to pass through the pore space of the exterior surface are adsorbed onto the interior surface allowing for a sample to be analyzed.

Mr. Robinson collected three indoor-air samples from the Miguel's restaurant lease spaces (Figure 1), one indoor-air sample from Bamboo Panda (Figure 2), and one indoor-air sample from Fairbanks Fast Foto (Figure 3). Mr. Robinson also collected air samples from two crawlspace locations; one from Bamboo Panda and the other from Fairbanks Fast Foto.

We collected project sample *Miguel's-kitchen* from the pantry in Miguel's kitchen, project sample *Miguel's-office A* and the field-duplicate sample *Miguel's-office B* from Miguel's office, project sample *Miguel's-Banquet Room* from the banquet space adjacent to the main dining area in Miguel's, project sample *Bamboo Panda-kitchen* from the kitchen at Bamboo Panda, and project sample *FastFoto-office* from the office of Fairbanks Fast Foto.

At the end of deployment, we retrieved the samplers and shipped them using chain-of-custody procedures to Eurofins Air Toxins, Ltd. (Eurofins) testing laboratory in Folsom, California for analysis for PCE, TCE, 1,1-dichloroethene, cis-1,2-dichloroethene, and trans-1,2-dichloroethene by the laboratory's custom gas chromatography mass spectrometry (GC/MS) modified method, EPA TO-17. TCE and PCE were determined quantitatively, but concentrations of the other analytes were estimated.

We have enclosed copies of our sampling forms for this project with this report.

RESULTS

We present analytical results of indoor-air and crawlspace air samples in Table 1, which is enclosed with this report.

PCE was detected in each project sample at concentrations below the ADEC's target level. The remaining analytes were not detected above their respective reporting limits.

QUALITY ASSURANCE/QUALITY CONTROL

Quality assurance (QA) and quality control (QC) activities for this project were designed to achieve data quality and reliability. We reviewed the analytical results for laboratory QC samples, and also conducted our own QA assessment for this project. Our QA-review procedures allow us to document the accuracy and precision of the analytical data, and check that the analyses are sufficiently sensitive to detect analytes at levels below regulatory standards.

For this report, we reviewed the indoor-air and sub-slab soil-gas data reported by Eurofins Work Order (WO) 1703472. The laboratory report contained a case narrative, sample-receipt form,

analytical results, and a copy of the Chain of Custody form. Details regarding the results of our QA analysis are presented in the ADEC data-review checklist, enclosed with this report, along with a copy of the laboratory report.

Sample Handling and Holding Times

We reviewed the Sample Receipt Summary, Chain of Custody form, and WO summary form that were provided by the laboratory. The samples were noted to have been received in good condition upon receipt at the Eurofins laboratory.

Analytical Sensitivity

Consistent with our previous air-sampling reports, we compared indoor-air sample reporting limits to target levels for commercial indoor-air listed in ADEC's *Vapor Intrusion Guidance*, Appendix D. We compared crawlspace sample reporting limits to target levels for commercial sub-slab soil-gas listed in ADEC's *Vapor Intrusion Guidance*, Appendix E. Reporting limits were below commercial target levels for each analyte.

Accuracy

The laboratory assessed the accuracy of their analytical procedures by analyzing laboratory control samples (LCS) and LCS duplicates (LCSDs). LCS/LCSD analysis allows the laboratory to evaluate their ability to recover analytes added to clean aqueous matrices. LCS/LCSD samples were reported for analytical results in the laboratory report. The LCS/LCSD, and surrogate recovery data for each sample were within laboratory control limits and the results are considered accurate.

Precision

To evaluate data precision and reproducibility of our sampling techniques, we calculated the relative percent difference (RPD) of duplicate results. RPD is defined as the difference between the sample and its field duplicate divided by the mean of the two. We can only evaluate RPDs if the result of the analysis for both the sample and its duplicate are greater than the reporting limit for a given analyte.

We collected the duplicate indoor-air sample pair *Miguel's-office A* and *Miguel's-office B*. The RPDs were within QC criteria for the field-duplicate pair, where calculable.

Data Quality Summary

By working in accordance with our proposed scope of services, we consider the indoor-air and sub-slab soil-gas samples we collected to be representative of the site conditions at the locations and times they were collected. Based on our QA review, no sample results were rejected as unusable due to QC failures. For this project, the quality of the analytical data is acceptable for its intended use.

CONCLUSION AND RECOMMENDATIONS

Based on our observations and analytical-sample results, Shannon & Wilson presents the following conclusions and recommendations.

PCE was detected each of the project samples at concentrations below its indoor-air or subslab soil-gas (crawl-space-air) target level. Other analytes were not detected above their respective reporting limits.

Our March 2017 sample results are similar to results from our previous indoor-air sampling completed in February 2014. Refer to Table 2 for a summary of historical results.

CLOSURE

This report was prepared for the exclusive use of Gavora, Inc., and their representatives. We understand this report will be used to monitor indoor-air and sub-slab soil-gas at the Annex. This report should not be used for other purposes without Shannon & Wilson's review. We have prepared the document "*Important Information about Your Geotechnical/Environmental Report*" to help you and others understand the use and limitations of this report.

Our observations represent site conditions as they existed during our sampling activities on March 22 and 23, 2017. Our observations are specific to the locations and times noted herein, and may not be applicable to all areas of the site. No number of indoor-air and sub-slab soil-gas samples along with analytical testing can precisely predict the characteristics, quality, or distribution of site conditions. Potential variations include, but are not limited to:

- The conditions between sampling points may be different.
- The passage of time or intervening causes (natural and manmade) may result in changes to site conditions.

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- Contaminant concentrations may change in response to natural conditions, chemical reactions, and/or other events.
- The presence, distribution, and concentration of contaminants may vary from our sampling locations. Our tests may not represent the highest contaminant concentrations at the site.

This report should not be used without our approval if any of the following occurs:

- Conditions change due to natural forces or human activity under, at, or adjacent to the site.
- Project details change or new information becomes available such that our analyses, conclusion, and recommendations may be affected.
- If the site ownership or land use has changed.
- More than ten years has passed since the date of this summary letter report.
- Regulations, laws, or cleanup levels change.
- If the site's regulatory status has changed.

If any of these occur, we should be retained to review the applicability of our analyses, conclusions, and recommendations.

State and/or federal agencies may require reporting of the information included in this report. Shannon & Wilson does not assume the responsibility for reporting these findings and therefore has not, and will not, disclose the results of this study unless specifically requested and authorized by Gavora, Inc., or as required by law. Regulatory agencies may reach different conclusions than Shannon & Wilson.

Sincerely,

SHANNON & WILSON, INC.

Chris Darrah, C.P.G, CPESC
Vice President

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Enc: Table 1 – Summary of Indoor-Air and Crawlspace-Air Analytical-Sample Results
Table 2 – Historical Air-Sample Results, Crawlspace and Indoor-Air
Figure 1 – Sample Locations, Miguel's
Figure 2 – Sample Locations, Bamboo Panda
Figure 3 – Sample Locations, Fast Foto
Eurofins Air Toxics, Inc. Laboratory Report of Analysis (WO 1703472)
Laboratory Data Review Checklist for Air Samples
Important Information about Your Geotechnical/Environmental Report

TABLE 1
SUMMARY OF INDOOR-AIR AND CRAWLSPACE-AIR ANALYTICAL-SAMPLE RESULTS

Analyte	ADEC Indoor-Air Target Levels	Units	Miguel's-kitchen	Miguel's-office A	Miguel's-office B	Miguel's-Banquet Room	Bamboo Panda Kitchen	Fast Foto-Office
Tetrachloroethene	41	µg/m ³	32	27	22	28	18	1.8
Trichloroethene	8.4	µg/m ³	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	880	µg/m ³	<3.7 C	<3.6 C	<3.6 C	<3.7 C	<3.7 C	<3.7 C
cis-1,2-Dichloroethene	—	µg/m ³	<2.2 C	<2.2 C	<2.2 C	<2.2 C	<2.2 C	<2.2 C
trans-1,2-Dichloroethene	—	µg/m ³	<2.3 C	<2.3 C	<2.3 C	<2.3 C	<2.3 C	<2.3 C

Analyte	ADEC Soil-Gas Target Levels	Units	Crawlspace-BP	Crawlspace-FF
Tetrachloroethene	1,800	µg/m ³	75	14
Trichloroethene	84	µg/m ³	<1.0	<1.0
1,1-Dichloroethene	8,800	µg/m ³	<3.7 C	<3.7 C
cis-1,2-Dichloroethene	—	µg/m ³	<2.2 C	<2.2 C
trans-1,2-Dichloroethene	—	µg/m ³	<2.3 C	<2.3 C

Notes: Eurofins laboratory report, work order 1703472

Sample *Miguel's-office B* is a field-duplicate of sample *Miguel's office-A*.

ADEC Indoor-Air Target Levels from *Vapor Intrusion Guidance*, Appendix D, Commercial Indoor Air.

ADEC Shallow Sub-Slab Soil-Gas Target Levels from *Vapor Intrusion Guidance*, Appendix E, Commercial Soil-Gas.

Analytical Method for analysis was a custom gas chromatograph mass spectrometry (GC/MS) modified method EPA TO-17.

ADEC Alaska Department of Environmental Conservation

BP Bamboo Panda

FF Fast Foto

— ADEC target level not established.

µg/m³ micrograms per cubic meter

< Analyte not detected; listed as less than the reporting limit (RL).

C Estimated concentration due to calculated sampling rate. Flag applied by the laboratory.

**TABLE 2
HISTORICAL AIR-SAMPLE RESULTS
CRAWLSPACE AND INDOOR AIR, SHOPPER'S FORM MALL ANNEX**

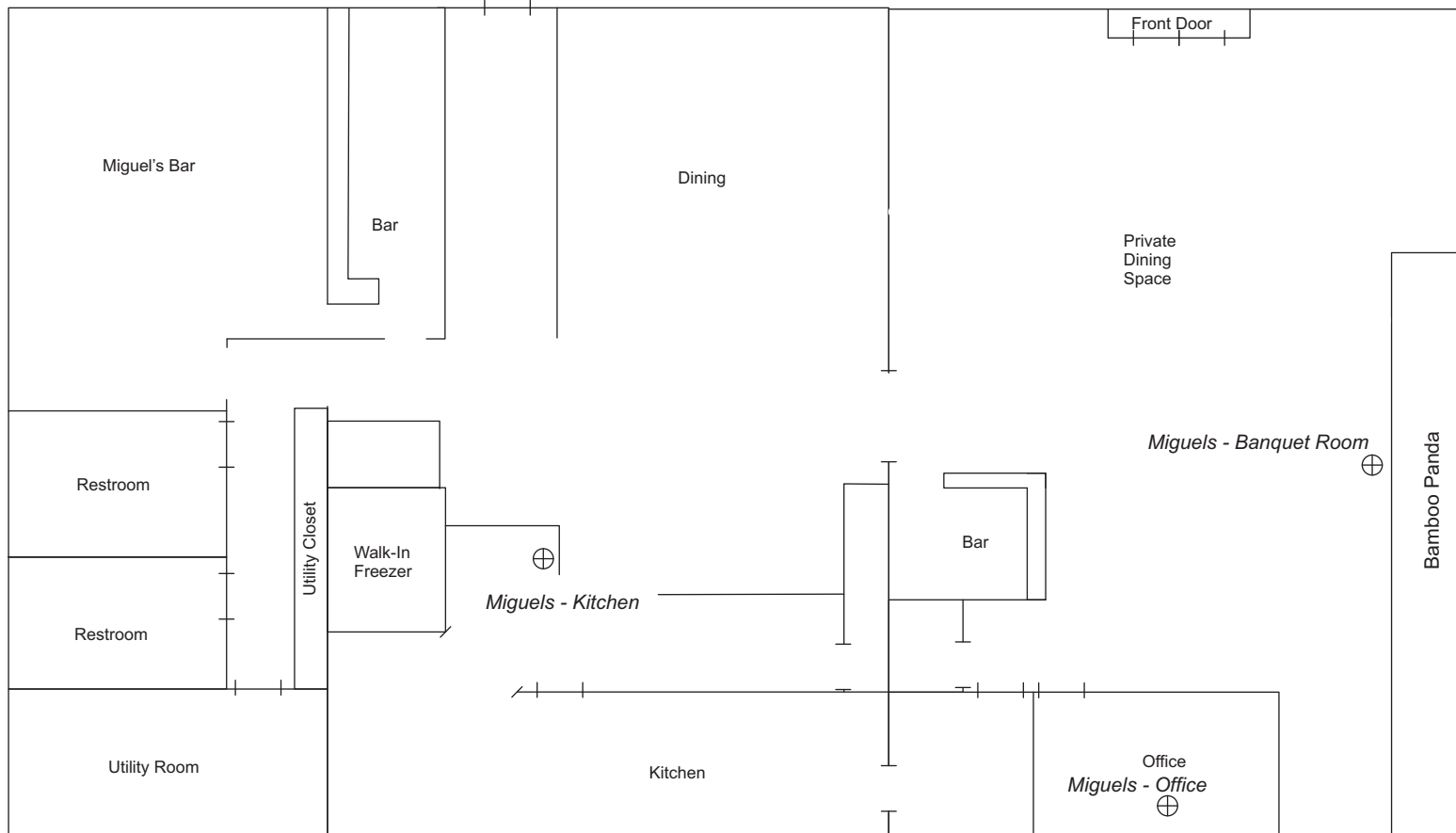
Sampling Location	Date	PCE	TCE	Active Air Quality Mitigation Systems				
		$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	Portable GAC	In-Line GAC	HRV	SSDPS	
Miguel's - Kitchen (indoor air)	April 2011	250E	1.6					
	February 2012	280J	1.7J					
	April 2013	260	1.8		x	x		
	August 2013	1,200	7.6		x	x		
	Sub-slab depressurization system startup, October 2013							
	October 2013	43	<1.0		x	x	x	
	November 2013	29	<1.0			x	x	
	February 2014	27	<1.0	x		x	x	
	February 2017	32	<0.1			x	x	
Miguel's - Office (indoor air)	February 2012	940	4.6					
	April 2013*	470	2.7	x	x	x		
	August 2013*	4,800	25	x	x	x		
	Sub-slab depressurization system startup, October 2013							
	October 2013	67	<1.0	x	x	x	x	
	November 2013*	47	<1.0	x		x	x	
	February 2014*	34JL	<1.0JL	x		x	x	
	February 2017	27	<1.0			x	x	
Miguel's - Banquet Room	April 2011	1,600 ^a	7.3			x		
	November 2013	45	<1.0			x	x	
	February 2014	25	<1.0	x		x	x	
	February 2017	28	<1.0			x	x	

**TABLE 2
HISTORICAL AIR-SAMPLE RESULTS
CRAWLSPACE AND INDOOR AIR, SHOPPER'S FORM MALL ANNEX**

Sampling Location	Date	PCE	TCE	Active Air Quality Mitigation Systems				
		$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	Portable GAC	In-Line GAC	HRV	SSDPS	
Bamboo Panda - Crawlspace	April 2011	2,000	9.8					
	February 2012	3,600	20					
	Crawlspace ventilation startup, October 2012							
	April 2013	1,400	7.1		x	x		
	August 2013	190	<0.94		x	x		
	November 2013	180	<1.0			x	x	
	February 2014	73	<1.0	x		x	x	
	February 2017	75	<1.0			x	x	
Bamboo Panda - Indoor Air	February 2012	730J	3.6J					
	Crawlspace ventilation startup, October 2012							
	April 2013	210	1.4		x	x		
	August 2013	5.3 ^b	<0.93		x	x		
	November 2013	27	<1.0			x	x	
	February 2014	12	<1.0	x		x	x	
	February 2017	18	<1.0			x	x	

**TABLE 2
HISTORICAL AIR-SAMPLE RESULTS
CRAWLSPACE AND INDOOR AIR, SHOPPER'S FORM MALL ANNEX**

Sampling Location	Date	PCE	TCE	Active Air Quality Mitigation Systems			
		$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	Portable GAC	In-Line GAC	HRV	SSDPS
Fairbanks Fast Foto - Crawlspace	April 2013	620	3.1		x	x	
	August 2013	120	<0.94		x	x	
	November 2013	90	<1.0			x	x
	February 2014	42	<1.0	x		x	x
	February 2017	14	<1.0			x	x
Fairbanks Fast Foto - Indoor Air	February 2012	25	0.41				
	Crawlspace ventilation startup, October 2012						
	April 2013	260	1.6		x	x	
	August 2013	46	<0.93		x	x	
	November 2013	47	<1.0			x	x
	February 2014	26	<1.0	x		x	x
	February 2017	1.8	<1.0			x	x
ADEC Shallow Soil Gas Target Level (for comparison to crawlspace data)		1,800	84				
ADEC Indoor-Air Target Level		41	8.4				




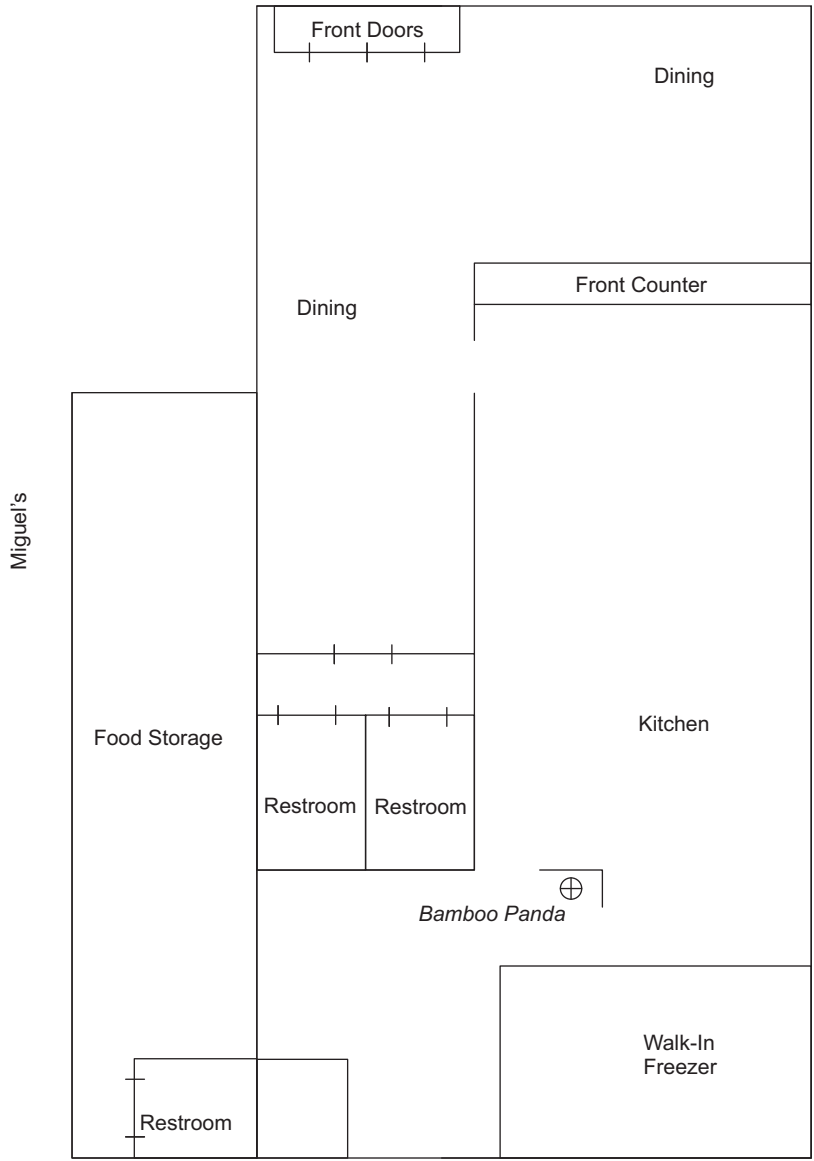
Not to Scale

Legend

⊕ Approximate indoor-air sampling location



Shopper's Forum Annex Fairbanks, Alaska	
SAMPLE LOCATIONS, MIGUEL'S	
May 2017	31-1-11850-001
 SHANNON & WILSON, INC. <small>GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS</small>	Figure 1



Legend

⊕ Approximate indoor-air sampling location

Not to Scale

Shopper's Forum Annex
Fairbanks, Alaska

SAMPLE LOCATIONS, BAMBOO PANDA

May 2017

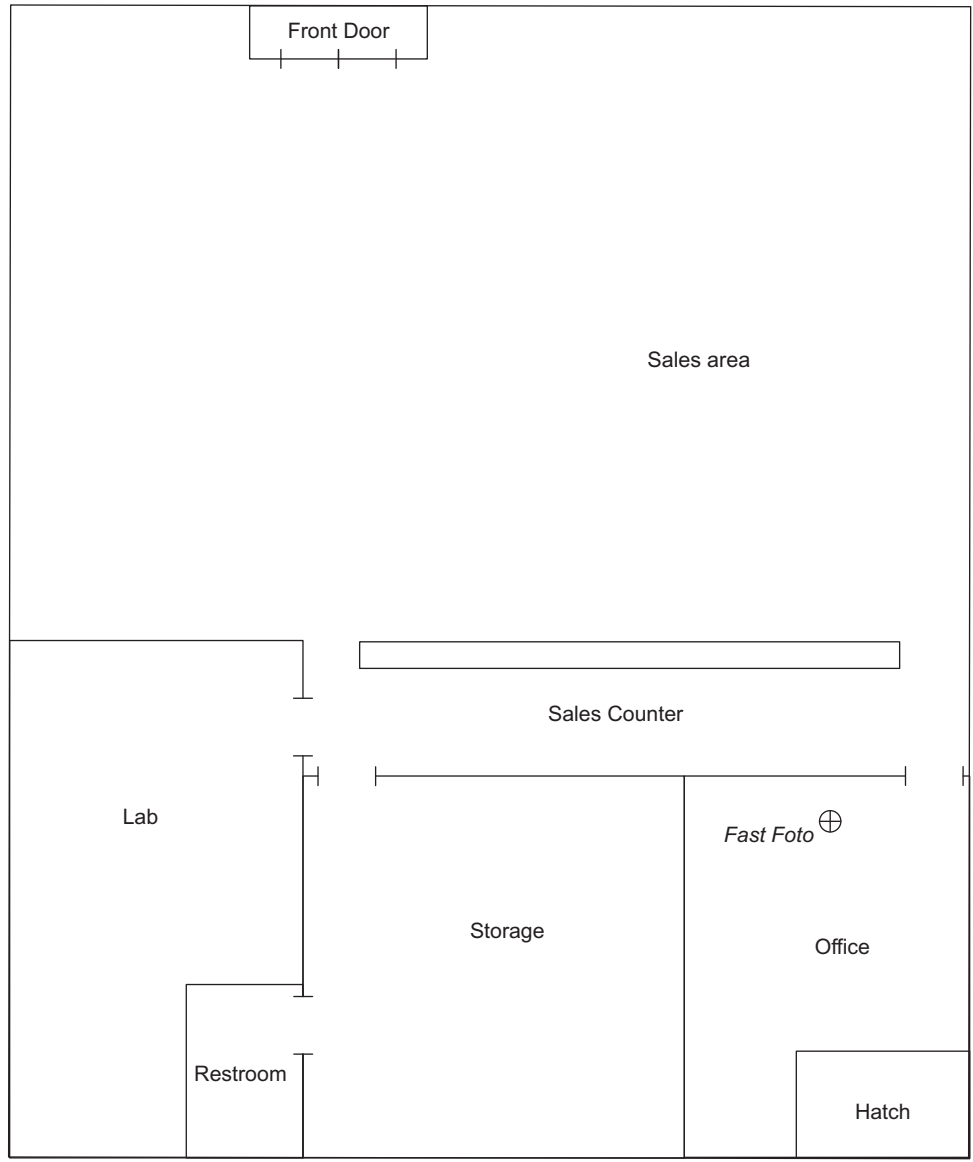
31-1-11850-001

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Figure 2



Bamboo Panda



Legend

⊕ Approximate indoor-air sampling location

Not to Scale

Shopper's Forum Annex
Fairbanks, Alaska

SAMPLE LOCATIONS, FAIRBANKS FAST FOTO

May 2017

31-1-11850-001

 **SHANNON & WILSON, INC.**
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Figure 3



4/7/2017

Mr. Seth Robinson
Shannon & Wilson, Inc.
2355 Hill Road

Fairbanks AK 99709

Project Name: Shopper's Forum
Project #: 31-1-11850-001
Workorder #: 1703472

Dear Mr. Seth Robinson

The following report includes the data for the above referenced project for sample(s) received on 3/27/2017 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 #: 1703472

Work Order Summary

CLIENT:	Mr. Seth Robinson Shannon & Wilson, Inc. 2355 Hill Road Fairbanks, AK 99709	BILL TO:	Mr. Seth Robinson Shannon & Wilson, Inc. 2355 Hill Road Fairbanks, AK 99709
PHONE:	907-479-0600	P.O. #	
FAX:	907-479-5691	PROJECT #	31-1-11850-001 Shopper's Forum
DATE RECEIVED:	03/27/2017	CONTACT:	Kelly Buettner
DATE COMPLETED:	04/07/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
01A	Miguel's-Kitchen	Passive S.E. RAD130/SKC
02A	Miguel's-Office A	Passive S.E. RAD130/SKC
03A	Miguel's-Office B	Passive S.E. RAD130/SKC
04A	Miguel's-Banquet Room	Passive S.E. RAD130/SKC
05A	Bamboo Panda-Kitchen	Passive S.E. RAD130/SKC
06A	Fast Foto-Office	Passive S.E. RAD130/SKC
07A	Crawlspace-FF	Passive S.E. RAD130/SKC
08A	Crawlspace-BP	Passive S.E. RAD130/SKC
09A	Lab Blank	Passive S.E. RAD130/SKC
10A	LCS	Passive S.E. RAD130/SKC
10AA	LCSD	Passive S.E. RAD130/SKC

CERTIFIED BY: 
 Technical Director

DATE: 04/07/17

**LABORATORY NARRATIVE
RAD130 Passive SE by Mod EPA TO-17
Shannon & Wilson, Inc.
Workorder# 1703472**

Eight Radiello 130 (Solvent) samples were received on March 27, 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

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.

If validated uptake rates were not available, rates were estimated using the chemical's diffusion coefficient in air and the geometric constant of the sampler. Chemicals that are poorly retained by the sorbent over the sampling duration may exhibit a low bias. All concentrations calculated using estimated rates are qualified with a "C" flag.

To calculate ug/m3 concentrations in the Lab Blank, a sampling duration of 1463 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: Miguel's-Kitchen

Lab ID#: 1703472-01A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Tetrachloroethene	0.10	1.2	2.8	32

Client Sample ID: Miguel's-Office A

Lab ID#: 1703472-02A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Tetrachloroethene	0.10	1.2	2.3	27

Client Sample ID: Miguel's-Office B

Lab ID#: 1703472-03A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Tetrachloroethene	0.10	1.2	1.9	22

Client Sample ID: Miguel's-Banquet Room

Lab ID#: 1703472-04A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Tetrachloroethene	0.10	1.2	2.4	28

Client Sample ID: Bamboo Panda-Kitchen

Lab ID#: 1703472-05A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Tetrachloroethene	0.10	1.2	1.5	18

Client Sample ID: Fast Foto-Office

Lab ID#: 1703472-06A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Tetrachloroethene	0.10	1.2	0.15	1.8

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

Client Sample ID: Crawlspace-FF

Lab ID#: 1703472-07A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Tetrachloroethene	0.10	1.2	1.2	14

Client Sample ID: Crawlspace-BP

Lab ID#: 1703472-08A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Tetrachloroethene	0.10	1.2	6.3	75



Client Sample ID: Miguel's-Kitchen

Lab ID#: 1703472-01A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	c033119sim	Date of Collection:	3/23/17 11:20:00 AM
Dil. Factor:	1.00	Date of Analysis:	3/31/17 04:36 PM
		Date of Extraction:	3/31/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	1.0	Not Detected	Not Detected
Tetrachloroethene	0.10	1.2	2.8	32
cis-1,2-Dichloroethene	0.20	2.2	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	2.3	Not Detected C	Not Detected C
1,1-Dichloroethene	0.40	3.7	Not Detected C	Not Detected C

C = Estimated concentration due to calculated sampling rate.

Temperature = 73.4F , duration time = 1446 minutes.

Container Type: Radiello 130 (Solvent)

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



Air Toxics

Client Sample ID: Miguel's-Office A

Lab ID#: 1703472-02A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	c033120sim	Date of Collection:	3/23/17 11:23:00 AM
Dil. Factor:	1.00	Date of Analysis:	3/31/17 05:00 PM
		Date of Extraction:	3/31/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	1.0	Not Detected	Not Detected
Tetrachloroethene	0.10	1.2	2.3	27
cis-1,2-Dichloroethene	0.20	2.2	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	2.3	Not Detected C	Not Detected C
1,1-Dichloroethene	0.40	3.6	Not Detected C	Not Detected C

C = Estimated concentration due to calculated sampling rate.

Temperature = 73.4F , duration time = 1463 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130



Air Toxics

Client Sample ID: Miguel's-Office B

Lab ID#: 1703472-03A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	c033121sim	Date of Collection:	3/23/17 11:13:00 AM
Dil. Factor:	1.00	Date of Analysis:	3/31/17 05:24 PM
		Date of Extraction:	3/31/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	1.0	Not Detected	Not Detected
Tetrachloroethene	0.10	1.2	1.9	22
cis-1,2-Dichloroethene	0.20	2.2	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	2.3	Not Detected C	Not Detected C
1,1-Dichloroethene	0.40	3.6	Not Detected C	Not Detected C

C = Estimated concentration due to calculated sampling rate.

Temperature = 73.4F , duration time = 1463 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130

Client Sample ID: Miguel's-Banquet Room

Lab ID#: 1703472-04A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	c033122sim	Date of Collection:	3/23/17 11:10:00 AM
Dil. Factor:	1.00	Date of Analysis:	3/31/17 05:48 PM
		Date of Extraction:	3/31/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	1.0	Not Detected	Not Detected
Tetrachloroethene	0.10	1.2	2.4	28
cis-1,2-Dichloroethene	0.20	2.2	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	2.3	Not Detected C	Not Detected C
1,1-Dichloroethene	0.40	3.7	Not Detected C	Not Detected C

C = Estimated concentration due to calculated sampling rate.

Temperature = 73.4F , duration time = 1442 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130



Client Sample ID: Bamboo Panda-Kitchen

Lab ID#: 1703472-05A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	c033123sim	Date of Collection:	3/23/17 11:28:00 AM
Dil. Factor:	1.00	Date of Analysis:	3/31/17 06:12 PM
		Date of Extraction:	3/31/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	1.0	Not Detected	Not Detected
Tetrachloroethene	0.10	1.2	1.5	18
cis-1,2-Dichloroethene	0.20	2.2	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	2.3	Not Detected C	Not Detected C
1,1-Dichloroethene	0.40	3.7	Not Detected C	Not Detected C

C = Estimated concentration due to calculated sampling rate.

Temperature = 73.4F , duration time = 1443 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130



Air Toxics

Client Sample ID: Fast Foto-Office

Lab ID#: 1703472-06A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	c033124sim	Date of Collection:	3/23/17 11:31:00 AM
Dil. Factor:	1.00	Date of Analysis:	3/31/17 06:36 PM
		Date of Extraction:	3/31/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	1.0	Not Detected	Not Detected
Tetrachloroethene	0.10	1.2	0.15	1.8
cis-1,2-Dichloroethene	0.20	2.2	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	2.3	Not Detected C	Not Detected C
1,1-Dichloroethene	0.40	3.7	Not Detected C	Not Detected C

C = Estimated concentration due to calculated sampling rate.

Temperature = 73.4F , duration time = 1441 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130



Air Toxics

Client Sample ID: Crawlspace-FF

Lab ID#: 1703472-07A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	c033125sim	Date of Collection:	3/23/17 11:36:00 AM
Dil. Factor:	1.00	Date of Analysis:	3/31/17 07:00 PM
		Date of Extraction:	3/31/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	1.0	Not Detected	Not Detected
Tetrachloroethene	0.10	1.2	1.2	14
cis-1,2-Dichloroethene	0.20	2.2	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	2.3	Not Detected C	Not Detected C
1,1-Dichloroethene	0.40	3.7	Not Detected C	Not Detected C

C = Estimated concentration due to calculated sampling rate.

Temperature = 73.4F , duration time = 1441 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130



Air Toxics

Client Sample ID: Crawlspace-BP

Lab ID#: 1703472-08A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	c033126sim	Date of Collection:	3/23/17 11:41:00 AM
Dil. Factor:	1.00	Date of Analysis:	3/31/17 07:24 PM
		Date of Extraction:	3/31/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	1.0	Not Detected	Not Detected
Tetrachloroethene	0.10	1.2	6.3	75
cis-1,2-Dichloroethene	0.20	2.2	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	2.3	Not Detected C	Not Detected C
1,1-Dichloroethene	0.40	3.7	Not Detected C	Not Detected C

C = Estimated concentration due to calculated sampling rate.

Temperature = 73.4F , duration time = 1441 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130



Client Sample ID: Lab Blank

Lab ID#: 1703472-09A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	c033106sim	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	3/31/17 11:06 AM
		Date of Extraction:	3/31/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	1.0	Not Detected	Not Detected
Tetrachloroethene	0.10	1.2	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.20	2.2	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	2.3	Not Detected C	Not Detected C
1,1-Dichloroethene	0.40	3.6	Not Detected C	Not Detected C

C = Estimated concentration due to calculated sampling rate.

Temperature = 73.4F , duration time = 1463 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1703472-10A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	c033104sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/31/17 09:54 AM
		Date of Extraction: 3/31/17

Compound	%Recovery	Method Limits
Trichloroethene	93	70-130
Tetrachloroethene	93	70-130
cis-1,2-Dichloroethene	92	70-130
trans-1,2-Dichloroethene	90	70-130
1,1-Dichloroethene	99	70-130

Container Type: NA - Not Applicable

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



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1703472-10AA

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	c033105sim	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	3/31/17 10:18 AM
		Date of Extraction:	3/31/17

Compound	%Recovery	Method Limits
Trichloroethene	95	70-130
Tetrachloroethene	97	70-130
cis-1,2-Dichloroethene	92	70-130
trans-1,2-Dichloroethene	79	70-130
1,1-Dichloroethene	94	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130

Laboratory Data Review Checklist For Air Samples

Completed by:

Title:

Date:

CS Report Name:

Report Date:

Consultant Firm:

Laboratory Name:

Laboratory Report Number:

ADEC File Number:

ADEC Hazard ID:

1. Laboratory

- a. Did a NELAP certified laboratory receive and perform all of the submitted sample analyses?

Yes No

Comments:

- b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses NELAP approved?

Yes No

Comments:

2. Chain of Custody (COC)

- a. COC information completed, signed, and dated (including released/received by)?

Yes No

Comments:

b. Correct analyses requested?

Yes No

Comments:

3. Laboratory Sample Receipt Documentation

a. Sample condition documented—Samples collected in gas tight, opaque/dark Summa canisters or other ADEC approved container? Canister vacuum/pressure checked, recorded upon receipt and contained no open valves?

Yes No

Comments:

The sample condition was noted on the Work Order Summary and on the COC.

b. If there were any discrepancies, were they documented? For example, incorrect sample containers, sample holding times outside of acceptable range, insufficient or missing samples, canister not holding a vacuum etc.?

Yes No

Comments:

The laboratory noted that there were no receiving discrepancies.

c. Data quality or usability affected? Explain.

Comments:

The data quality and usability were not affected; see above.

4. Case Narrative

a. Present and understandable?

Yes No

Comments:

b. Discrepancies, errors or QC failures identified by the lab?

Yes No

Comments:

The laboratory did not note any discrepancies, errors, or QC failures.

c. Were all corrective actions documented?

Yes No

Comments:

Corrective actions were not required.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

The case narrative does not specify any effect on the data quality and usability.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No

Comments:

b. Samples analyzed within 30 days of collection or within the time required by the method?

Yes No

Comments:

c. Is the data reported in micrograms per meter cubed ($\mu\text{g}/\text{m}^3$) volume?

Yes No

Comments:

d. Are the reported PQLs less than the Target Screening Level or the minimum required detection level for the project?

Yes No

Comments:

Reporting limits were below commercial target levels for all analytes.

e. Data quality or usability affected? Explain.

Comments:

The data quality and usability were not affected; see above.

6. QC Samples

a. Method Blank

i. One method blank reported per analysis and 20 samples?

Yes No

Comments:

ii. All method blank results less than PQL?

Yes No

Comments:

iii. If above PQL, what samples are affected?

Comments:

None; the project analytes were not detected in the method blank.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No

Comments:

The project analytes were not detected in the method blank.

v. Data quality or usability affected? Please Explain.

Comments:

The data quality and usability were not affected; see above.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD or one LCS and a sample/sample duplicate pair reported per analysis and 20 samples?

Yes No

Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

Yes No

Comments:

iii. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable.

Yes No

Comments:

iv. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

None; see above.

v. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No

Comments:

RPDs were reported as within method or laboratory limits.

vi. Data quality or usability affected? Explain.

Comments:

No; see above.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – QC and laboratory samples?

Yes No

Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

Yes No

Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

Yes No

Comments:

Surrogate recoveries were within acceptance criteria.

iv. Data quality or usability affected? Explain.

Comments:

The data quality and usability were not affected; see above.

d. Field Duplicate

i. One field duplicate submitted per analysis and 10 soil gas or indoor air samples?

Yes No

Comments:

The field-duplicate pair *Miguel's-office A/Miguel's-office B* was submitted with this work order.

ii. Submitted blind to lab?

Yes No

Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs?
(Recommended: 25 %)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No Comments:

The field-duplicate RPDs were within the recommended DQO of 25%, where calculable.

iv. Data quality or usability affected? Explain.

Comments:

The data quality and usability were not affected; see above.

7. Other Data Flags/Qualifiers

a. Defined and appropriate?

Yes No Comments:

There were no data flags or qualifiers.

Date: May 9, 2017

To: Gavora, Inc.
Attn: Rudy Gavora

Re: Indoor-Air Sampling, Shopper's Forum Mall

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used: (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors which were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports, and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland