



April 18, 2018

Lori Bauman
Wisconsin Arts Lab LLC
1422 N. 4th Street
Milwaukee, WI 53212

Subject: Environmental Investigation Sampling Results
BRRTS#: 02-41-559223

Dear Ms. Bauman:

In accordance with Wisconsin Department of Natural Resources (WDNR) regulation NR 716.14, EnviroForensics LLC (EnviroForensics) is providing the results of environmental samples collected from your property located at 1422 N. 4th Street in Milwaukee, Wisconsin on April 5-6, 2018. The sampling activities are part of an environmental investigation being performed for the former Vogue Cleaners facility located at 1416 N. 4th Street in Milwaukee, Wisconsin at the direction of the WDNR. The chemicals of concern for the investigation are volatile organic compounds (VOCs) related to dry cleaning solvents.

Sampling Results

Six (6) indoor air samples were collected from your building, and four (4) sub-slab vapor samples were collected from beneath the basement floor slab. One (1) outdoor air sample was also collected for quality control purposes. The approximate sample locations are shown on the attached sketch (**Figure 1**). The analytical results of the air and vapor samples are summarized and compared to WDNR standards on the attached **Table 1**. The laboratory report that relates to the samples is also attached.

As listed on the attached table, trichloroethene (TCE) was detected in each of the indoor air samples. Both of the air samples collected from the basement, and one (1) of the air samples collected from the first floor, contained TCE at concentrations just above the vapor action level for commercial buildings of 8.8 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Several VOCs were detected in the sub-slab vapor samples; however, the concentrations of all compounds were well below the applicable vapor risk screening levels.

Sub-slab vapor testing beneath the former Vogue Cleaners building indicates TCE is not present at concentrations indicative of a source, and TCE was not previously identified as a chemical of concern at the former Vogue Cleaners. The sub-slab vapor sample results from the former Vogue Cleaners are presented in **Table 1** along with the results from your building. Overall, the

data indicate that the TCE detections in your building are not associated with the solvent release at the former Vogue Cleaners.

There are two potential sources of TCE affecting indoor air at your property. First, a significant TCE release was identified at the Milwaukee Plating facility just north of the Wisconsin Arts Lab building. Second, it is possible the TCE is associated with a material that is currently being used or stored by an artist within the building. While we did a general inventory of the materials being stored, due to the number of containers spread out throughout the building, we cannot guarantee that TCE is not being stored or used on-site.

At this time, we recommend that no further testing be conducted at your property by the former Vogue Cleaners. If you have any questions or would like us to discuss these results with you or your tenants, please contact us at 262-290-4001 or by email at bkappen@enviroforensics.com and rhoverman@enviroforensics.com. The WDNR project manager, Trevor Nobile, can be reached at 414-263-8524. We greatly appreciate your help and patience with this matter.

Sincerely,

EnviroForensics LLC

A handwritten signature in blue ink, appearing to read "Brian Kappen".

Brian Kappen, PG
Project Manager

A handwritten signature in blue ink, appearing to read "Rob Hoverman".

Rob Hoverman, LPG
Regional Director

Attachments: Vapor Intrusion Sample Locations Figure
Sample Results Summary Table
Laboratory Analytical Report
WDNR Publication RR-977

Copy: Trevor Nobile, Wisconsin Department of Natural Resources

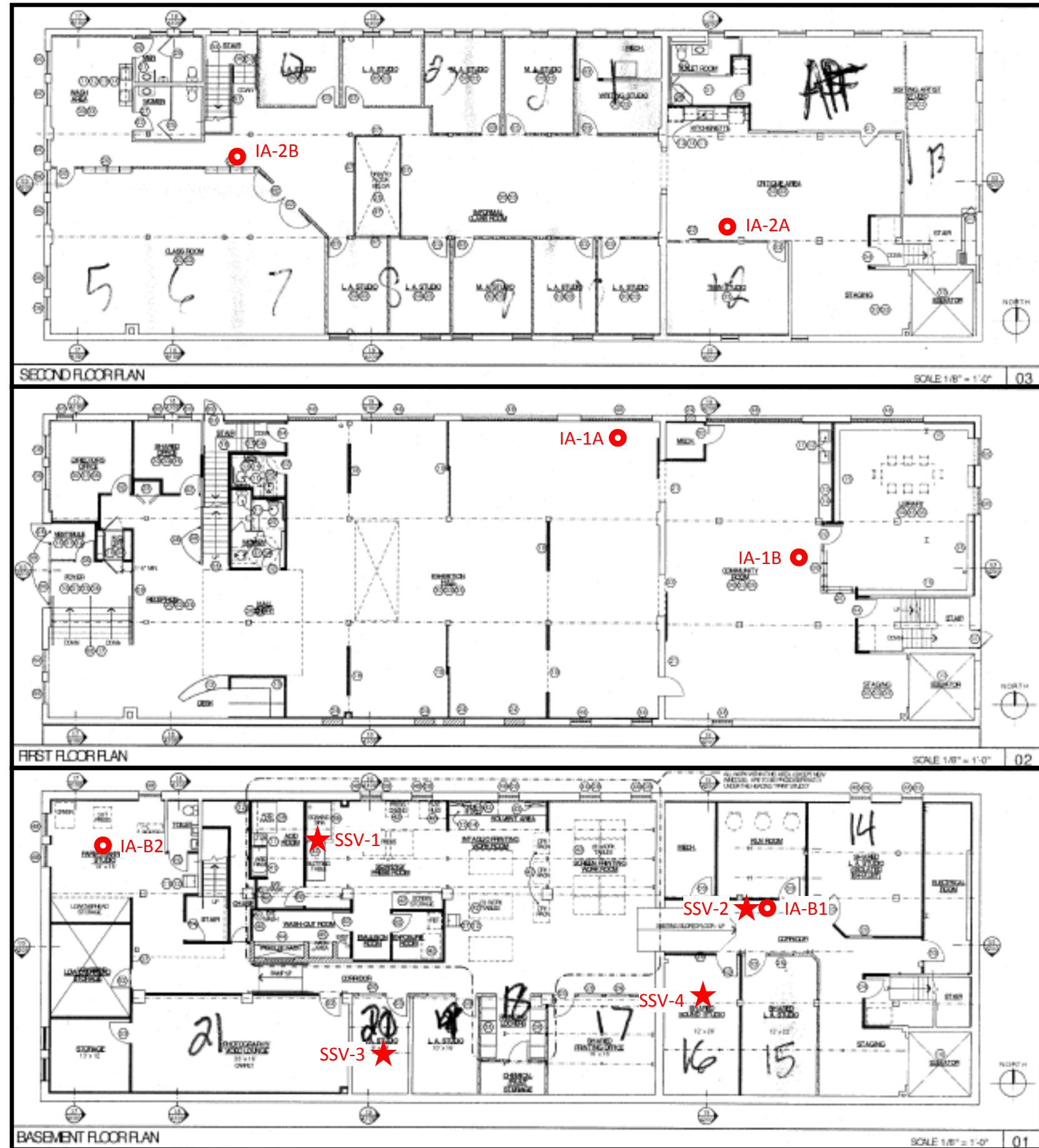


Figure 1

Vapor Intrusion Assessment Sample Locations
1422 N. 4th St, Milwaukee, Wisconsin

Legend

- = Indoor/Outdoor Air Sample
- ★ = Sub-Slab Vapor Sample Location



TABLE 1
SUMMARY OF VAPOR INTRUSION ASSESSMENT SAMPLE ANALYTICAL RESULTS

Former Vogue Cleaners
 1416 N. 4th Street, Milwaukee, Wisconsin

Sample Address	Sample Location	Sample Identification	Sample Date	Tetrachloroethene	Trichloroethene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Benzene	Chloroform	Ethylbenzene	m,p Xylene
INDOOR/OUTDOOR AIR											
Vapor Action Level ¹				180	8.8	260	260	16	5.3	49	440
1422 N. 4th St.	Outdoor	6350-OA	4/5/2018	<3.19	<1.07	<4.92	<4.92	<1.60	<0.83	<8.68	<43.4
	Basement	6350-1422 N 4th St-IA-B1	4/5/2018	<3.19	13.2	<4.92	<4.92	<1.60	<0.83	<8.68	<43.4
		6350-1422 N 4th St-IA-B2	4/5/2018	<3.19	14.6	<4.92	<4.92	<1.60	<0.83	<8.68	<43.4
	1st Floor	6350-1422 N 4th St-IA-1A	4/5/2018	<3.19	11.7	<4.92	<4.92	<1.60	<0.83	<8.68	<43.4
		6350-1422 N 4th St-IA-1B	4/6/2018	<3.19	6.50	<4.92	<4.92	<1.60	<0.83	<8.68	<43.4
	2nd Floor	6350-1422 N 4th St-IA-2A	4/5/2018	<3.19	8.60	<4.92	<4.92	<1.60	<0.83	<8.68	<43.4
6350-1422 N 4th St-IA-2B		4/5/2018	<3.19	8.01	<4.92	<4.92	<1.60	<0.83	<8.68	<43.4	
SUB-SLAB VAPOR											
Vapor Risk Screening Level ¹				6,000	290	8,700	8,700	530	180	1,600	15,000
1422 N. 4th St.	Basement	6350-1422 N 4th St-SSV-1	4/6/2018	4.61	10.6	<4.92	<4.92	<1.60	<0.83	<8.68	<43.4
		6350-1422 N 4th St-SSV-2	4/6/2018	52.0	12.0	21.9	5.90	20.1	<0.83	13.8	73.9
		6350-1422 N 4th St-SSV-3	4/6/2018	<3.19	4.68	<4.92	<4.92	<1.60	<0.83	<8.68	<43.4
		6350-1422 N 4th St-SSV-4	4/6/2018	22.1	5.27	9.09	<4.92	5.18	<0.83	<8.68	<43.4
1416 N. 4th St.	1st Floor	6350-1416 N 4th St-SSV-1	4/5/2018	30.6	1.67	<4.92	<4.92	3.04	<0.83	<8.68	<43.4
		6350-1416 N 4th St-SSV-2	4/5/2018	161	<1.07	117	72.1	5.94	2.54	<8.68	71.3

Notes:

¹ Vapor Action Levels and Vapor Risk Screening Levels are calculated in accordance with WDNR Publication RR-800

All concentrations reported in units in micrograms per cubic meter = µg/m³

Only detected compounds are listed

Bolded values are above method detection limits

Bolded and orange shaded values exceed the Vapor Action Level or Vapor Risk Screening Level for small commercial buildings



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Mr. Brian Kappen
Enviroforensics
N16 W. 23390 Stone Ridge Dr
Suite G
Waukesha, WI 53188

April 13, 2018

EnvisionAir Project Number: 2018-243
Client Project Name: 6350

Dear Mr. Kappen,

Please find the attached analytical report for the samples received April 9, 2018. All test methods performed were fully compliant with local, state, and federal EPA methods unless otherwise noted. The project was analyzed as requested on the enclosed chain of custody record. Please review the comments section for additional information about your results or Quality Control data.

Feel free to contact me if you have any questions or comments regarding your analytical report or service.

Thank you for your business. EnvisionAir looks forward to working with you on your next project.

Yours Sincerely,

A handwritten signature in black ink that reads "Stanley A. Hunnicutt".

Stanley A Hunnicutt

Project Manager
EnvisionAir, LLC



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Client Name: ENVIROFORENSICS
Project ID: 6350
Client Project Manager: BRIAN KAPPEN
EnvisionAir Project Number: 2018-243

Sample Summary

Canister Pressure / Vacuum

<u>Laboratory Sample Number:</u>	<u>Sample Description:</u>	<u>Matrix:</u>	<u>START</u>	<u>START</u>	<u>End Date</u>	<u>End Time</u>	<u>Date</u>	<u>Time</u>	<u>Canister Pressure / Vacuum</u>		<u>Lab</u>
			<u>Date</u>	<u>Time</u>					<u>Initial Field</u>	<u>Final Field</u>	
			<u>Collected:</u>	<u>Collected:</u>	<u>Collected:</u>	<u>Collected:</u>	<u>Received:</u>	<u>Received:</u>	<u>(in. Hg)</u>	<u>(in. Hg)</u>	<u>(in. Hg)</u>
18-1089	6350-OA	A	4/5/18	8:25	4/5/18	15:40	4/9/18	11:00	-29	-7	-7
18-1090	6350-1422 N 4TH ST-IA-1B	A	4/5/18	8:33	4/6/18	10:30	4/9/18	11:00	-29	-2	-2
18-1091	6350-1422 N 4TH ST-IA-1A	A	4/5/18	8:31	4/5/18	15:55	4/9/18	11:00	-29	-9	-9
18-1092	6350-1422 N 4TH ST-IA-B1	A	4/5/18	8:40	4/5/18	15:50	4/9/18	11:00	-29	-2	-2
18-1093	6350-1422 N 4TH ST-IA-B2	A	4/5/18	8:43	4/5/18	15:37	4/9/18	11:00	-29	-8	-8
18-1094	6350-1422 N 4TH ST-IA-2A	A	4/5/18	8:55	4/5/18	16:00	4/9/18	11:00	-29	-9	-9
18-1095	6350-1422 N 4TH ST-IA-2B	A	4/5/18	8:58	4/5/18	15:57	4/9/18	11:00	-29	-6	-6
18-1096	6350-1422 N 4TH ST-SSV-1	A	4/6/18	11:30	4/6/18	11:35	4/9/18	11:00	-29	-3	-3
18-1097	6350-1422 N 4TH ST-SSV-2	A	4/6/18	12:15	4/6/18	12:20	4/9/18	11:00	-29	-2	-2
18-1098	6350-1422 N 4TH ST-SSV-3	A	4/6/18	12:30	4/6/18	12:35	4/9/18	11:00	-29	-4	-4
18-1099	6350-1422 N 4TH ST-SSV-4	A	4/6/18	12:06	4/6/18	12:11	4/9/18	11:00	-29	-3	-3



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Client Name: ENVIROFORENSICS

Project ID: 6350

Client Project Manager: BRIAN KAPPEN

EnvisionAir Project Number: 2018-243

Analytical Method: TO-15
Analytical Batch: 041118AIR

Client Sample ID: 6350-OA

EnvisionAir Sample Number: 18-1089
Sample Matrix: AIR

Sample Collection START Date/Time: 4/5/18 8:25
Sample Collection END Date/Time: 4/5/18 15:40
Sample Received Date/Time: 4/9/18 11:00

<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
4-Ethyltoluene	< 492	492	
4-Methyl-2-pentanone (MIBK)	< 2050	2050	
1,1,1-Trichloroethane	< 546	546	
1,1,2,2-Tetrachloroethane	< 0.34	0.34	1
1,1,2-Trichloroethane	< 0.21	0.21	1
1,1-Dichloroethane	< 4.05	4.05	
1,1-Dichloroethene	< 198	198	
1,2,4-Trichlorobenzene	< 0.74	0.74	
1,2,4-Trimethylbenzene	< 4.92	4.92	
1,2-dibromoethane (EDB)	< 0.03	0.03	1
1,2-Dichlorobenzene	< 60.1	60.1	
1,2-Dichloroethane	< 0.40	0.40	
1,2-Dichloropropane	< 0.46	0.46	
1,3,5-Trimethylbenzene	< 4.92	4.92	
1,3-Butadiene	< 0.22	0.22	
1,3-Dichlorobenzene	< 60.1	60.1	
1,4-Dichlorobenzene	< 0.60	0.60	
1,4-Dioxane	< 1.80	1.80	
2-Butanone (MEK)	< 2950	2950	
2-Hexanone	< 20.5	20.5	
Acetone	< 2380	2380	
Benzene	< 1.60	1.60	
Benzyl Chloride	< 0.41	0.41	1
Bromodichloromethane	< 0.54	0.54	1
Bromoform	< 10.3	10.3	
Bromomethane	< 3.88	3.88	
Carbon Disulfide	< 311	311	
Carbon Tetrachloride	< 0.63	0.63	
Chlorobenzene	< 23.0	23.0	
Chloroethane	< 13.2	13.2	



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<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
Chloroform	< 0.83	0.83	
Chloromethane	< 20.6	20.6	
cis-1,2-Dichloroethene	< 19.8	19.8	
cis-1,3-Dichloropropene	< 4.54	4.54	
Cyclohexane	< 5510	5510	
Dibromochloromethane	< 0.85	0.85	
Dichlorodifluoromethane	< 49.5	49.5	
Ethyl Acetate	< 1800	1800	
Ethylbenzene	< 8.68	8.68	
Hexachloro-1,3-butadiene	< 1.07	1.07	
Isooctane	< 467	467	
m,p-Xylene	< 43.4	43.4	
Methylene Chloride	< 41.7	41.7	
Methyl-tert-butyl ether	< 36.1	36.1	
N-Heptane	< 410	410	
N-Hexane	< 176	176	
o-Xylene	< 43.4	43.4	
Propylene	< 172	172	
Styrene	< 426	426	
Tetrachloroethene	< 3.19	3.19	
Tetrahydrofuran	< 295	295	
Toluene	< 3770	3770	
trans-1,2-Dichloroethene	< 39.6	39.6	
trans-1,3-Dichloropropene	< 4.54	4.54	
Trichloroethene	< 1.07	1.07	
Trichlorofluoromethane	< 562	562	
Vinyl Acetate	< 176	176	
Vinyl Bromide	< 0.44	0.44	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	101%		
Analysis Date/Time:	04-11-18/15:02		
Analyst Initials	tjg		



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Client Name: ENVIROFORENSICS

Project ID: 6350

Client Project Manager: BRIAN KAPPEN

EnvisionAir Project Number: 2018-243

Analytical Method: TO-15
Analytical Batch: 041118AIR

Client Sample ID: 6350-1422 N 4TH ST-IA-1B

Sample Collection START Date/Time: 4/5/18 8:33
Sample Collection END Date/Time: 4/6/18 10:30
Sample Received Date/Time: 4/9/18 11:00

EnvisionAir Sample Number: 18-1090
Sample Matrix: AIR

<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
4-Ethyltoluene	< 492	492	
4-Methyl-2-pentanone (MIBK)	< 2050	2050	
1,1,1-Trichloroethane	< 546	546	
1,1,2,2-Tetrachloroethane	< 0.34	0.34	1
1,1,2-Trichloroethane	< 0.21	0.21	1
1,1-Dichloroethane	< 4.05	4.05	
1,1-Dichloroethene	< 198	198	
1,2,4-Trichlorobenzene	< 0.74	0.74	
1,2,4-Trimethylbenzene	< 4.92	4.92	
1,2-dibromoethane (EDB)	< 0.03	0.03	1
1,2-Dichlorobenzene	< 60.1	60.1	
1,2-Dichloroethane	< 0.40	0.40	
1,2-Dichloropropane	< 0.46	0.46	
1,3,5-Trimethylbenzene	< 4.92	4.92	
1,3-Butadiene	< 0.22	0.22	
1,3-Dichlorobenzene	< 60.1	60.1	
1,4-Dichlorobenzene	< 0.60	0.60	
1,4-Dioxane	< 1.80	1.80	
2-Butanone (MEK)	< 2950	2950	
2-Hexanone	< 20.5	20.5	
Acetone	< 2380	2380	
Benzene	< 1.60	1.60	
Benzyl Chloride	< 0.41	0.41	1
Bromodichloromethane	< 0.54	0.54	1
Bromoform	< 10.3	10.3	
Bromomethane	< 3.88	3.88	
Carbon Disulfide	< 311	311	
Carbon Tetrachloride	< 0.63	0.63	
Chlorobenzene	< 23.0	23.0	
Chloroethane	< 13.2	13.2	



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<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
Chloroform	< 0.83	0.83	
Chloromethane	< 20.6	20.6	
cis-1,2-Dichloroethene	< 19.8	19.8	
cis-1,3-Dichloropropene	< 4.54	4.54	
Cyclohexane	< 5510	5510	
Dibromochloromethane	< 0.85	0.85	
Dichlorodifluoromethane	< 49.5	49.5	
Ethyl Acetate	< 1800	1800	
Ethylbenzene	< 8.68	8.68	
Hexachloro-1,3-butadiene	< 1.07	1.07	
Isooctane	< 467	467	
m,p-Xylene	< 43.4	43.4	
Methylene Chloride	< 41.7	41.7	
Methyl-tert-butyl ether	< 36.1	36.1	
N-Heptane	< 410	410	
N-Hexane	< 176	176	
o-Xylene	< 43.4	43.4	
Propylene	< 172	172	
Styrene	< 426	426	
Tetrachloroethene	< 3.19	3.19	
Tetrahydrofuran	< 295	295	
Toluene	< 3770	3770	
trans-1,2-Dichloroethene	< 39.6	39.6	
trans-1,3-Dichloropropene	< 4.54	4.54	
Trichloroethene	6.50	1.07	
Trichlorofluoromethane	< 562	562	
Vinyl Acetate	< 176	176	
Vinyl Bromide	< 0.44	0.44	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	106%		
Analysis Date/Time:	04-11-18/15:42		
Analyst Initials	tjg		



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Client Name: ENVIROFORENSICS

Project ID: 6350

Client Project Manager: BRIAN KAPPEN

EnvisionAir Project Number: 2018-243

Analytical Method: TO-15
Analytical Batch: 041118AIR

Client Sample ID: 6350-1422 N 4TH ST-IA-1A

Sample Collection START Date/Time: 4/5/18 8:31
Sample Collection END Date/Time: 4/5/18 15:55
Sample Received Date/Time: 4/9/18 11:00

EnvisionAir Sample Number: 18-1091
Sample Matrix: AIR

<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
4-Ethyltoluene	< 492	492	
4-Methyl-2-pentanone (MIBK)	< 2050	2050	
1,1,1-Trichloroethane	< 546	546	
1,1,2,2-Tetrachloroethane	< 0.34	0.34	1
1,1,2-Trichloroethane	< 0.21	0.21	1
1,1-Dichloroethane	< 4.05	4.05	
1,1-Dichloroethene	< 198	198	
1,2,4-Trichlorobenzene	< 0.74	0.74	
1,2,4-Trimethylbenzene	< 4.92	4.92	
1,2-dibromoethane (EDB)	< 0.03	0.03	1
1,2-Dichlorobenzene	< 60.1	60.1	
1,2-Dichloroethane	< 0.40	0.40	
1,2-Dichloropropane	< 0.46	0.46	
1,3,5-Trimethylbenzene	< 4.92	4.92	
1,3-Butadiene	< 0.22	0.22	
1,3-Dichlorobenzene	< 60.1	60.1	
1,4-Dichlorobenzene	< 0.60	0.60	
1,4-Dioxane	< 1.80	1.80	
2-Butanone (MEK)	< 2950	2950	
2-Hexanone	< 20.5	20.5	
Acetone	< 2380	2380	
Benzene	< 1.60	1.60	
Benzyl Chloride	< 0.41	0.41	1
Bromodichloromethane	< 0.54	0.54	1
Bromoform	< 10.3	10.3	
Bromomethane	< 3.88	3.88	
Carbon Disulfide	< 311	311	
Carbon Tetrachloride	< 0.63	0.63	
Chlorobenzene	< 23.0	23.0	
Chloroethane	< 13.2	13.2	



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<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
Chloroform	< 0.83	0.83	
Chloromethane	< 20.6	20.6	
cis-1,2-Dichloroethene	< 19.8	19.8	
cis-1,3-Dichloropropene	< 4.54	4.54	
Cyclohexane	< 5510	5510	
Dibromochloromethane	< 0.85	0.85	
Dichlorodifluoromethane	< 49.5	49.5	
Ethyl Acetate	< 1800	1800	
Ethylbenzene	< 8.68	8.68	
Hexachloro-1,3-butadiene	< 1.07	1.07	
Isooctane	< 467	467	
m,p-Xylene	< 43.4	43.4	
Methylene Chloride	< 41.7	41.7	
Methyl-tert-butyl ether	< 36.1	36.1	
N-Heptane	< 410	410	
N-Hexane	< 176	176	
o-Xylene	< 43.4	43.4	
Propylene	< 172	172	
Styrene	< 426	426	
Tetrachloroethene	< 3.19	3.19	
Tetrahydrofuran	< 295	295	
Toluene	< 3770	3770	
trans-1,2-Dichloroethene	< 39.6	39.6	
trans-1,3-Dichloropropene	< 4.54	4.54	
Trichloroethene	11.7	1.07	
Trichlorofluoromethane	< 562	562	
Vinyl Acetate	< 176	176	
Vinyl Bromide	< 0.44	0.44	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	106%		
Analysis Date/Time:	04-11-18/16:24		
Analyst Initials	tjg		



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Client Name: ENVIROFORENSICS

Project ID: 6350

Client Project Manager: BRIAN KAPPEN

EnvisionAir Project Number: 2018-243

Analytical Method: TO-15
Analytical Batch: 041118AIR

Client Sample ID: 6350-1422 N 4TH ST-IA-B1

Sample Collection START Date/Time: 4/5/18 8:40
Sample Collection END Date/Time: 4/5/18 15:50
Sample Received Date/Time: 4/9/18 11:00

EnvisionAir Sample Number: 18-1092
Sample Matrix: AIR

<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
4-Ethyltoluene	< 492	492	
4-Methyl-2-pentanone (MIBK)	< 2050	2050	
1,1,1-Trichloroethane	< 546	546	
1,1,2,2-Tetrachloroethane	< 0.34	0.34	1
1,1,2-Trichloroethane	< 0.21	0.21	1
1,1-Dichloroethane	< 4.05	4.05	
1,1-Dichloroethene	< 198	198	
1,2,4-Trichlorobenzene	< 0.74	0.74	
1,2,4-Trimethylbenzene	< 4.92	4.92	
1,2-dibromoethane (EDB)	< 0.03	0.03	1
1,2-Dichlorobenzene	< 60.1	60.1	
1,2-Dichloroethane	< 0.40	0.40	
1,2-Dichloropropane	< 0.46	0.46	
1,3,5-Trimethylbenzene	< 4.92	4.92	
1,3-Butadiene	< 0.22	0.22	
1,3-Dichlorobenzene	< 60.1	60.1	
1,4-Dichlorobenzene	< 0.60	0.60	
1,4-Dioxane	< 1.80	1.80	
2-Butanone (MEK)	< 2950	2950	
2-Hexanone	< 20.5	20.5	
Acetone	< 2380	2380	
Benzene	< 1.60	1.60	
Benzyl Chloride	< 0.41	0.41	1
Bromodichloromethane	< 0.54	0.54	1
Bromoform	< 10.3	10.3	
Bromomethane	< 3.88	3.88	
Carbon Disulfide	< 311	311	
Carbon Tetrachloride	< 0.63	0.63	
Chlorobenzene	< 23.0	23.0	
Chloroethane	< 13.2	13.2	



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<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
Chloroform	< 0.83	0.83	
Chloromethane	< 20.6	20.6	
cis-1,2-Dichloroethene	< 19.8	19.8	
cis-1,3-Dichloropropene	< 4.54	4.54	
Cyclohexane	< 5510	5510	
Dibromochloromethane	< 0.85	0.85	
Dichlorodifluoromethane	< 49.5	49.5	
Ethyl Acetate	< 1800	1800	
Ethylbenzene	< 8.68	8.68	
Hexachloro-1,3-butadiene	< 1.07	1.07	
Isooctane	< 467	467	
m,p-Xylene	< 43.4	43.4	
Methylene Chloride	< 41.7	41.7	
Methyl-tert-butyl ether	< 36.1	36.1	
N-Heptane	< 410	410	
N-Hexane	< 176	176	
o-Xylene	< 43.4	43.4	
Propylene	< 172	172	
Styrene	< 426	426	
Tetrachloroethene	< 3.19	3.19	
Tetrahydrofuran	< 295	295	
Toluene	< 3770	3770	
trans-1,2-Dichloroethene	< 39.6	39.6	
trans-1,3-Dichloropropene	< 4.54	4.54	
Trichloroethene	13.2	1.07	
Trichlorofluoromethane	< 562	562	
Vinyl Acetate	< 176	176	
Vinyl Bromide	< 0.44	0.44	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	102%		
Analysis Date/Time:	04-11-18/17:05		
Analyst Initials	tjg		



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Client Name: ENVIROFORENSICS

Project ID: 6350

Client Project Manager: BRIAN KAPPEN

EnvisionAir Project Number: 2018-243

Analytical Method: TO-15
Analytical Batch: 041118AIR

Client Sample ID: 6350-1422 N 4TH ST-IA-B2

Sample Collection START Date/Time: 4/5/18 8:43
Sample Collection END Date/Time: 4/5/18 15:37
Sample Received Date/Time: 4/9/18 11:00

EnvisionAir Sample Number: 18-1093
Sample Matrix: AIR

<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
4-Ethyltoluene	< 492	492	
4-Methyl-2-pentanone (MIBK)	< 2050	2050	
1,1,1-Trichloroethane	< 546	546	
1,1,2,2-Tetrachloroethane	< 0.34	0.34	1
1,1,2-Trichloroethane	< 0.21	0.21	1
1,1-Dichloroethane	< 4.05	4.05	
1,1-Dichloroethene	< 198	198	
1,2,4-Trichlorobenzene	< 0.74	0.74	
1,2,4-Trimethylbenzene	< 4.92	4.92	
1,2-dibromoethane (EDB)	< 0.03	0.03	1
1,2-Dichlorobenzene	< 60.1	60.1	
1,2-Dichloroethane	< 0.40	0.40	
1,2-Dichloropropane	< 0.46	0.46	
1,3,5-Trimethylbenzene	< 4.92	4.92	
1,3-Butadiene	< 0.22	0.22	
1,3-Dichlorobenzene	< 60.1	60.1	
1,4-Dichlorobenzene	< 0.60	0.60	
1,4-Dioxane	< 1.80	1.80	
2-Butanone (MEK)	< 2950	2950	
2-Hexanone	< 20.5	20.5	
Acetone	< 2380	2380	
Benzene	< 1.60	1.60	
Benzyl Chloride	< 0.41	0.41	1
Bromodichloromethane	< 0.54	0.54	1
Bromoform	< 10.3	10.3	
Bromomethane	< 3.88	3.88	
Carbon Disulfide	< 311	311	
Carbon Tetrachloride	< 0.63	0.63	
Chlorobenzene	< 23.0	23.0	
Chloroethane	< 13.2	13.2	



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<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
Chloroform	< 0.83	0.83	
Chloromethane	< 20.6	20.6	
cis-1,2-Dichloroethene	< 19.8	19.8	
cis-1,3-Dichloropropene	< 4.54	4.54	
Cyclohexane	< 5510	5510	
Dibromochloromethane	< 0.85	0.85	
Dichlorodifluoromethane	< 49.5	49.5	
Ethyl Acetate	< 1800	1800	
Ethylbenzene	< 8.68	8.68	
Hexachloro-1,3-butadiene	< 1.07	1.07	
Isooctane	< 467	467	
m,p-Xylene	< 43.4	43.4	
Methylene Chloride	< 41.7	41.7	
Methyl-tert-butyl ether	< 36.1	36.1	
N-Heptane	< 410	410	
N-Hexane	< 176	176	
o-Xylene	< 43.4	43.4	
Propylene	< 172	172	
Styrene	< 426	426	
Tetrachloroethene	< 3.19	3.19	
Tetrahydrofuran	< 295	295	
Toluene	< 3770	3770	
trans-1,2-Dichloroethene	< 39.6	39.6	
trans-1,3-Dichloropropene	< 4.54	4.54	
Trichloroethene	14.6	1.07	
Trichlorofluoromethane	< 562	562	
Vinyl Acetate	< 176	176	
Vinyl Bromide	< 0.44	0.44	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	108%		
Analysis Date/Time:	04-11-18/17:45		
Analyst Initials	tjg		



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Client Name: ENVIROFORENSICS

Project ID: 6350

Client Project Manager: BRIAN KAPPEN

EnvisionAir Project Number: 2018-243

Analytical Method: TO-15
Analytical Batch: 041118AIR

Client Sample ID: 6350-1422 N 4TH ST-IA-2A

Sample Collection START Date/Time: 4/5/18 8:55
Sample Collection END Date/Time: 4/5/18 16:00
Sample Received Date/Time: 4/9/18 11:00

EnvisionAir Sample Number: 18-1094
Sample Matrix: AIR

<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
4-Ethyltoluene	< 492	492	
4-Methyl-2-pentanone (MIBK)	< 2050	2050	
1,1,1-Trichloroethane	< 546	546	
1,1,2,2-Tetrachloroethane	< 0.34	0.34	1
1,1,2-Trichloroethane	< 0.21	0.21	1
1,1-Dichloroethane	< 4.05	4.05	
1,1-Dichloroethene	< 198	198	
1,2,4-Trichlorobenzene	< 0.74	0.74	
1,2,4-Trimethylbenzene	< 4.92	4.92	
1,2-dibromoethane (EDB)	< 0.03	0.03	1
1,2-Dichlorobenzene	< 60.1	60.1	
1,2-Dichloroethane	< 0.40	0.40	
1,2-Dichloropropane	< 0.46	0.46	
1,3,5-Trimethylbenzene	< 4.92	4.92	
1,3-Butadiene	< 0.22	0.22	
1,3-Dichlorobenzene	< 60.1	60.1	
1,4-Dichlorobenzene	< 0.60	0.60	
1,4-Dioxane	< 1.80	1.80	
2-Butanone (MEK)	< 2950	2950	
2-Hexanone	< 20.5	20.5	
Acetone	< 2380	2380	
Benzene	< 1.60	1.60	
Benzyl Chloride	< 0.41	0.41	1
Bromodichloromethane	< 0.54	0.54	1
Bromoform	< 10.3	10.3	
Bromomethane	< 3.88	3.88	
Carbon Disulfide	< 311	311	
Carbon Tetrachloride	< 0.63	0.63	
Chlorobenzene	< 23.0	23.0	
Chloroethane	< 13.2	13.2	



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<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
Chloroform	< 0.83	0.83	
Chloromethane	< 20.6	20.6	
cis-1,2-Dichloroethene	< 19.8	19.8	
cis-1,3-Dichloropropene	< 4.54	4.54	
Cyclohexane	< 5510	5510	
Dibromochloromethane	< 0.85	0.85	
Dichlorodifluoromethane	< 49.5	49.5	
Ethyl Acetate	< 1800	1800	
Ethylbenzene	< 8.68	8.68	
Hexachloro-1,3-butadiene	< 1.07	1.07	
Isooctane	< 467	467	
m,p-Xylene	< 43.4	43.4	
Methylene Chloride	< 41.7	41.7	
Methyl-tert-butyl ether	< 36.1	36.1	
N-Heptane	< 410	410	
N-Hexane	< 176	176	
o-Xylene	< 43.4	43.4	
Propylene	< 172	172	
Styrene	< 426	426	
Tetrachloroethene	< 3.19	3.19	
Tetrahydrofuran	< 295	295	
Toluene	< 3770	3770	
trans-1,2-Dichloroethene	< 39.6	39.6	
trans-1,3-Dichloropropene	< 4.54	4.54	
Trichloroethene	8.60	1.07	
Trichlorofluoromethane	< 562	562	
Vinyl Acetate	< 176	176	
Vinyl Bromide	< 0.44	0.44	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	97%		
Analysis Date/Time:	04-11-18/18:28		
Analyst Initials	tjg		



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Client Name: ENVIROFORENSICS

Project ID: 6350

Client Project Manager: BRIAN KAPPEN

EnvisionAir Project Number: 2018-243

Analytical Method: TO-15
Analytical Batch: 041118AIR

Client Sample ID: 6350-1422 N 4TH ST-IA-2B

Sample Collection START Date/Time: 4/5/18 8:58
Sample Collection END Date/Time: 4/5/18 15:57
Sample Received Date/Time: 4/9/18 11:00

EnvisionAir Sample Number: 18-1095
Sample Matrix: AIR

<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
4-Ethyltoluene	< 492	492	
4-Methyl-2-pentanone (MIBK)	< 2050	2050	
1,1,1-Trichloroethane	< 546	546	
1,1,2,2-Tetrachloroethane	< 0.34	0.34	1
1,1,2-Trichloroethane	< 0.21	0.21	1
1,1-Dichloroethane	< 4.05	4.05	
1,1-Dichloroethene	< 198	198	
1,2,4-Trichlorobenzene	< 0.74	0.74	
1,2,4-Trimethylbenzene	< 4.92	4.92	
1,2-dibromoethane (EDB)	< 0.03	0.03	1
1,2-Dichlorobenzene	< 60.1	60.1	
1,2-Dichloroethane	< 0.40	0.40	
1,2-Dichloropropane	< 0.46	0.46	
1,3,5-Trimethylbenzene	< 4.92	4.92	
1,3-Butadiene	< 0.22	0.22	
1,3-Dichlorobenzene	< 60.1	60.1	
1,4-Dichlorobenzene	< 0.60	0.60	
1,4-Dioxane	< 1.80	1.80	
2-Butanone (MEK)	< 2950	2950	
2-Hexanone	< 20.5	20.5	
Acetone	< 2380	2380	
Benzene	< 1.60	1.60	
Benzyl Chloride	< 0.41	0.41	1
Bromodichloromethane	< 0.54	0.54	1
Bromoform	< 10.3	10.3	
Bromomethane	< 3.88	3.88	
Carbon Disulfide	< 311	311	
Carbon Tetrachloride	< 0.63	0.63	
Chlorobenzene	< 23.0	23.0	
Chloroethane	< 13.2	13.2	



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<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
Chloroform	< 0.83	0.83	
Chloromethane	< 20.6	20.6	
cis-1,2-Dichloroethene	< 19.8	19.8	
cis-1,3-Dichloropropene	< 4.54	4.54	
Cyclohexane	< 5510	5510	
Dibromochloromethane	< 0.85	0.85	
Dichlorodifluoromethane	< 49.5	49.5	
Ethyl Acetate	< 1800	1800	
Ethylbenzene	< 8.68	8.68	
Hexachloro-1,3-butadiene	< 1.07	1.07	
Isooctane	< 467	467	
m,p-Xylene	< 43.4	43.4	
Methylene Chloride	< 41.7	41.7	
Methyl-tert-butyl ether	< 36.1	36.1	
N-Heptane	< 410	410	
N-Hexane	< 176	176	
o-Xylene	< 43.4	43.4	
Propylene	< 172	172	
Styrene	< 426	426	
Tetrachloroethene	< 3.19	3.19	
Tetrahydrofuran	< 295	295	
Toluene	< 3770	3770	
trans-1,2-Dichloroethene	< 39.6	39.6	
trans-1,3-Dichloropropene	< 4.54	4.54	
Trichloroethene	8.01	1.07	
Trichlorofluoromethane	< 562	562	
Vinyl Acetate	< 176	176	
Vinyl Bromide	< 0.44	0.44	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	91%		
Analysis Date/Time:	04-11-18/19:11		
Analyst Initials	tjg		



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Client Name: ENVIROFORENSICS

Project ID: 6350

Client Project Manager: BRIAN KAPPEN

EnvisionAir Project Number: 2018-243

Analytical Method: TO-15
Analytical Batch: 041118AIR

Client Sample ID: 6350-1422 N 4TH ST-SSV-1

Sample Collection START Date/Time: 4/6/18 11:30
Sample Collection END Date/Time: 4/6/18 11:35
Sample Received Date/Time: 4/9/18 11:00

EnvisionAir Sample Number: 18-1096
Sample Matrix: AIR

<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
4-Ethyltoluene	< 492	492	
4-Methyl-2-pentanone (MIBK)	< 2050	2050	
1,1,1-Trichloroethane	< 546	546	
1,1,1,2-Tetrachloroethane	< 0.34	0.34	1
1,1,2-Trichloroethane	< 0.21	0.21	1
1,1-Dichloroethane	< 4.05	4.05	
1,1-Dichloroethene	< 198	198	
1,2,4-Trichlorobenzene	< 0.74	0.74	
1,2,4-Trimethylbenzene	< 4.92	4.92	
1,2-dibromoethane (EDB)	< 0.03	0.03	1
1,2-Dichlorobenzene	< 60.1	60.1	
1,2-Dichloroethane	< 0.40	0.40	
1,2-Dichloropropane	< 0.46	0.46	
1,3,5-Trimethylbenzene	< 4.92	4.92	
1,3-Butadiene	< 0.22	0.22	
1,3-Dichlorobenzene	< 60.1	60.1	
1,4-Dichlorobenzene	< 0.60	0.60	
1,4-Dioxane	< 1.80	1.80	
2-Butanone (MEK)	< 2950	2950	
2-Hexanone	< 20.5	20.5	
Acetone	< 2380	2380	
Benzene	< 1.60	1.60	
Benzyl Chloride	< 0.41	0.41	1
Bromodichloromethane	< 0.54	0.54	1
Bromoform	< 10.3	10.3	
Bromomethane	< 3.88	3.88	
Carbon Disulfide	< 311	311	
Carbon Tetrachloride	< 0.63	0.63	
Chlorobenzene	< 23.0	23.0	
Chloroethane	< 13.2	13.2	

<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
Chloroform	< 0.83	0.83	
Chloromethane	< 20.6	20.6	
cis-1,2-Dichloroethene	< 19.8	19.8	
cis-1,3-Dichloropropene	< 4.54	4.54	
Cyclohexane	< 5510	5510	
Dibromochloromethane	< 0.85	0.85	
Dichlorodifluoromethane	< 49.5	49.5	
Ethyl Acetate	< 1800	1800	
Ethylbenzene	< 8.68	8.68	
Hexachloro-1,3-butadiene	< 1.07	1.07	
Isooctane	< 467	467	
m,p-Xylene	< 43.4	43.4	
Methylene Chloride	< 41.7	41.7	
Methyl-tert-butyl ether	< 36.1	36.1	
N-Heptane	< 410	410	
N-Hexane	< 176	176	
o-Xylene	< 43.4	43.4	
Propylene	< 172	172	
Styrene	< 426	426	
Tetrachloroethene	4.61	3.19	
Tetrahydrofuran	< 295	295	
Toluene	< 3770	3770	
trans-1,2-Dichloroethene	< 39.6	39.6	
trans-1,3-Dichloropropene	< 4.54	4.54	
Trichloroethene	10.6	1.07	
Trichlorofluoromethane	< 562	562	
Vinyl Acetate	< 176	176	
Vinyl Bromide	< 0.44	0.44	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	99%		
Analysis Date/Time:	04-12-18/02:24		
Analyst Initials	tjg		



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Client Name: ENVIROFORENSICS

Project ID: 6350

Client Project Manager: BRIAN KAPPEN

EnvisionAir Project Number: 2018-243

Analytical Method: TO-15
Analytical Batch: 041118AIR

Client Sample ID: 6350-1422 N 4TH ST-SSV-2

EnvisionAir Sample Number: 18-1097
Sample Matrix: AIR

Sample Collection START Date/Time: 4/6/18 12:15
Sample Collection END Date/Time: 4/6/18 12:20
Sample Received Date/Time: 4/9/18 11:00

<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
4-Ethyltoluene	< 492	492	
4-Methyl-2-pentanone (MIBK)	< 2050	2050	
1,1,1-Trichloroethane	< 546	546	
1,1,2,2-Tetrachloroethane	< 0.34	0.34	1
1,1,2-Trichloroethane	< 0.21	0.21	1
1,1-Dichloroethane	< 4.05	4.05	
1,1-Dichloroethene	< 198	198	
1,2,4-Trichlorobenzene	< 0.74	0.74	
1,2,4-Trimethylbenzene	21.9	4.92	
1,2-dibromoethane (EDB)	< 0.03	0.03	1
1,2-Dichlorobenzene	< 60.1	60.1	
1,2-Dichloroethane	< 0.40	0.40	
1,2-Dichloropropane	< 0.46	0.46	
1,3,5-Trimethylbenzene	5.90	4.92	
1,3-Butadiene	< 0.22	0.22	
1,3-Dichlorobenzene	< 60.1	60.1	
1,4-Dichlorobenzene	< 0.60	0.60	
1,4-Dioxane	< 1.80	1.80	
2-Butanone (MEK)	< 2950	2950	
2-Hexanone	< 20.5	20.5	
Acetone	< 2380	2380	
Benzene	20.1	1.60	
Benzyl Chloride	< 0.41	0.41	1
Bromodichloromethane	< 0.54	0.54	1
Bromoform	< 10.3	10.3	
Bromomethane	< 3.88	3.88	
Carbon Disulfide	< 311	311	
Carbon Tetrachloride	< 0.63	0.63	
Chlorobenzene	< 23.0	23.0	
Chloroethane	< 13.2	13.2	

<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
Chloroform	< 0.83	0.83	
Chloromethane	< 20.6	20.6	
cis-1,2-Dichloroethene	< 19.8	19.8	
cis-1,3-Dichloropropene	< 4.54	4.54	
Cyclohexane	< 5510	5510	
Dibromochloromethane	< 0.85	0.85	
Dichlorodifluoromethane	< 49.5	49.5	
Ethyl Acetate	< 1800	1800	
Ethylbenzene	13.8	8.68	
Hexachloro-1,3-butadiene	< 1.07	1.07	
Isooctane	< 467	467	
m,p-Xylene	73.9	43.4	
Methylene Chloride	< 41.7	41.7	
Methyl-tert-butyl ether	< 36.1	36.1	
N-Heptane	< 410	410	
N-Hexane	< 176	176	
o-Xylene	< 43.4	43.4	
Propylene	< 172	172	
Styrene	< 426	426	
Tetrachloroethene	52.0	3.19	
Tetrahydrofuran	< 295	295	
Toluene	< 3770	3770	
trans-1,2-Dichloroethene	< 39.6	39.6	
trans-1,3-Dichloropropene	< 4.54	4.54	
Trichloroethene	12.0	1.07	
Trichlorofluoromethane	< 562	562	
Vinyl Acetate	< 176	176	
Vinyl Bromide	< 0.44	0.44	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	92%		
Analysis Date/Time:	04-12-18/03:39		
Analyst Initials	tjg		



EnvisionAir
 1441 Sadler Circle West Drive
 Indianapolis, IN 46239
 Ph: 317-351-0885
 Fax: 317-351-0882
 www.envision-air.com

Client Name: ENVIROFORENSICS

Project ID: 6350

Client Project Manager: BRIAN KAPPEN

EnvisionAir Project Number: 2018-243

Analytical Method: TO-15
Analytical Batch: 041118AIR

Client Sample ID: 6350-1422 N 4TH ST-SSV-3

EnvisionAir Sample Number: 18-1098
Sample Matrix: AIR

Sample Collection START Date/Time: 4/6/18 12:30
Sample Collection END Date/Time: 4/6/18 12:35
Sample Received Date/Time: 4/9/18 11:00

<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
4-Ethyltoluene	< 492	492	
4-Methyl-2-pentanone (MIBK)	< 2050	2050	
1,1,1-Trichloroethane	< 546	546	
1,1,1,2-Tetrachloroethane	< 0.34	0.34	1
1,1,2-Trichloroethane	< 0.21	0.21	1
1,1-Dichloroethane	< 4.05	4.05	
1,1-Dichloroethene	< 198	198	
1,2,4-Trichlorobenzene	< 0.74	0.74	
1,2,4-Trimethylbenzene	< 4.92	4.92	
1,2-dibromoethane (EDB)	< 0.03	0.03	1
1,2-Dichlorobenzene	< 60.1	60.1	
1,2-Dichloroethane	< 0.40	0.40	
1,2-Dichloropropane	< 0.46	0.46	
1,3,5-Trimethylbenzene	< 4.92	4.92	
1,3-Butadiene	< 0.22	0.22	
1,3-Dichlorobenzene	< 60.1	60.1	
1,4-Dichlorobenzene	< 0.60	0.60	
1,4-Dioxane	< 1.80	1.80	
2-Butanone (MEK)	< 2950	2950	
2-Hexanone	< 20.5	20.5	
Acetone	< 2380	2380	
Benzene	< 1.60	1.60	
Benzyl Chloride	< 0.41	0.41	1
Bromodichloromethane	< 0.54	0.54	1
Bromoform	< 10.3	10.3	
Bromomethane	< 3.88	3.88	
Carbon Disulfide	< 311	311	
Carbon Tetrachloride	< 0.63	0.63	
Chlorobenzene	< 23.0	23.0	
Chloroethane	< 13.2	13.2	



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<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
Chloroform	< 0.83	0.83	
Chloromethane	< 20.6	20.6	
cis-1,2-Dichloroethene	< 19.8	19.8	
cis-1,3-Dichloropropene	< 4.54	4.54	
Cyclohexane	< 5510	5510	
Dibromochloromethane	< 0.85	0.85	
Dichlorodifluoromethane	< 49.5	49.5	
Ethyl Acetate	< 1800	1800	
Ethylbenzene	< 8.68	8.68	
Hexachloro-1,3-butadiene	< 1.07	1.07	
Isooctane	< 467	467	
m,p-Xylene	< 43.4	43.4	
Methylene Chloride	< 41.7	41.7	
Methyl-tert-butyl ether	< 36.1	36.1	
N-Heptane	< 410	410	
N-Hexane	< 176	176	
o-Xylene	< 43.4	43.4	
Propylene	< 172	172	
Styrene	< 426	426	
Tetrachloroethene	< 3.19	3.19	
Tetrahydrofuran	< 295	295	
Toluene	< 3770	3770	
trans-1,2-Dichloroethene	< 39.6	39.6	
trans-1,3-Dichloropropene	< 4.54	4.54	
Trichloroethene	4.68	1.07	
Trichlorofluoromethane	< 562	562	
Vinyl Acetate	< 176	176	
Vinyl Bromide	< 0.44	0.44	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	104%		
Analysis Date/Time:	04-12-18/04:54		
Analyst Initials	tjg		



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Client Name: ENVIROFORENSICS

Project ID: 6350

Client Project Manager: BRIAN KAPPEN

EnvisionAir Project Number: 2018-243

Analytical Method: TO-15
Analytical Batch: 041118AIR

Client Sample ID: 6350-1422 N 4TH ST-SSV-4

Sample Collection START Date/Time: 4/6/18 12:06
Sample Collection END Date/Time: 4/6/18 12:11
Sample Received Date/Time: 4/9/18 11:00

EnvisionAir Sample Number: 18-1099
Sample Matrix: AIR

<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
4-Ethyltoluene	< 492	492	
4-Methyl-2-pentanone (MIBK)	< 2050	2050	
1,1,1-Trichloroethane	< 546	546	
1,1,2,2-Tetrachloroethane	< 0.34	0.34	1
1,1,2-Trichloroethane	< 0.21	0.21	1
1,1-Dichloroethane	< 4.05	4.05	
1,1-Dichloroethene	< 198	198	
1,2,4-Trichlorobenzene	< 0.74	0.74	
1,2,4-Trimethylbenzene	9.09	4.92	
1,2-dibromoethane (EDB)	< 0.03	0.03	1
1,2-Dichlorobenzene	< 60.1	60.1	
1,2-Dichloroethane	< 0.40	0.40	
1,2-Dichloropropane	< 0.46	0.46	
1,3,5-Trimethylbenzene	< 4.92	4.92	
1,3-Butadiene	< 0.22	0.22	
1,3-Dichlorobenzene	< 60.1	60.1	
1,4-Dichlorobenzene	< 0.60	0.60	
1,4-Dioxane	< 1.80	1.80	
2-Butanone (MEK)	< 2950	2950	
2-Hexanone	< 20.5	20.5	
Acetone	< 2380	2380	
Benzene	5.18	1.60	
Benzyl Chloride	< 0.41	0.41	1
Bromodichloromethane	< 0.54	0.54	1
Bromoform	< 10.3	10.3	
Bromomethane	< 3.88	3.88	
Carbon Disulfide	< 311	311	
Carbon Tetrachloride	< 0.63	0.63	
Chlorobenzene	< 23.0	23.0	
Chloroethane	< 13.2	13.2	



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<u>Compounds</u>	<u>Sample Results ug/m³</u>	<u>Reporting Limit ug/m³</u>	<u>Flag</u>
Chloroform	< 0.83	0.83	
Chloromethane	< 20.6	20.6	
cis-1,2-Dichloroethene	< 19.8	19.8	
cis-1,3-Dichloropropene	< 4.54	4.54	
Cyclohexane	< 5510	5510	
Dibromochloromethane	< 0.85	0.85	
Dichlorodifluoromethane	< 49.5	49.5	
Ethyl Acetate	< 1800	1800	
Ethylbenzene	< 8.68	8.68	
Hexachloro-1,3-butadiene	< 1.07	1.07	
Isooctane	< 467	467	
m,p-Xylene	< 43.4	43.4	
Methylene Chloride	< 41.7	41.7	
Methyl-tert-butyl ether	< 36.1	36.1	
N-Heptane	< 410	410	
N-Hexane	< 176	176	
o-Xylene	< 43.4	43.4	
Propylene	< 172	172	
Styrene	< 426	426	
Tetrachloroethene	22.1	3.19	
Tetrahydrofuran	< 295	295	
Toluene	< 3770	3770	
trans-1,2-Dichloroethene	< 39.6	39.6	
trans-1,3-Dichloropropene	< 4.54	4.54	
Trichloroethene	5.27	1.07	
Trichlorofluoromethane	< 562	562	
Vinyl Acetate	< 176	176	
Vinyl Bromide	< 0.44	0.44	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	99%		
Analysis Date/Time:	04-12-18/06:09		
Analyst Initials	tjg		

TO-15 Quality Control Data

EnvisionAir Batch Number: 041118AIR

<u>Method Blank (MB):</u>	<u>MB Results (ppbv)</u>	<u>Reporting Limit (ppbv)</u>	<u>Flags</u>
4-Ethyltoluene	< 100	100	
4-Methyl-2-pentanone (MIBK)	< 500	500	
1,1,1-Trichloroethane	< 100	100	
1,1,2,2-Tetrachloroethane	< 0.049	0.049	1
1,1,2-Trichloroethane	< 0.038	0.038	1
1,1-Dichloroethane	< 1	1	
1,1-Dichloroethene	< 50	50	
1,2,4-Trichlorobenzene	< 0.1	0.1	
1,2,4-Trimethylbenzene	< 1	1	
1,2-dibromoethane (EDB)	< 0.0041	0.0041	1
1,2-Dichlorobenzene	< 10	10	
1,2-Dichloroethane	< 0.1	0.1	
1,2-Dichloropropane	< 0.1	0.1	
1,3,5-Trimethylbenzene	< 1	1	
1,3-Butadiene	< 0.1	0.1	
1,3-Dichlorobenzene	< 10	10	
1,4-Dichlorobenzene	< 0.1	0.1	
1,4-Dioxane	< 0.5	0.5	
2-Butanone (MEK)	< 1000	1000	
2-Hexanone	< 5	5	
Acetone	< 1000	1000	
Benzene	< 0.5	0.5	
Benzyl Chloride	< 0.08	0.08	1
Bromodichloromethane	< 0.08	0.08	1
Bromoform	< 1	1	
Bromomethane	< 1	1	
Carbon Disulfide	< 100	100	
Carbon Tetrachloride	< 0.1	0.1	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
Chloroform	< 0.17	0.17	
Chloromethane	< 10	10	
cis-1,2-Dichloroethene	< 5	5	
cis-1,3-Dichloropropene	< 1	1	
Cyclohexane	< 1600	1600	
Dibromochloromethane	< 0.1	0.1	
Dichlorodifluoromethane	< 10	10	
Ethyl Acetate	< 500	500	
Ethylbenzene	< 2	2	
Hexachloro-1,3-butadiene	< 0.1	0.1	
Isooctane	< 100	100	
m,p-Xylene	< 10	10	
Methylene Chloride	< 12	12	
Methyl-tert-butyl ether	< 10	10	
N-Heptane	< 100	100	
N-Hexane	< 50	50	
o-Xylene	< 10	10	
Propylene	< 100	100	
Styrene	< 100	100	
Tetrachloroethene	< 0.47	0.47	
Tetrahydrofuran	< 100	100	

Analytical Report

<u>Method Blank (MB):</u>	<u>MB Results (ppbv)</u>	<u>Reporting Limit (ppbv)</u>	<u>Flags</u>
Toluene	< 1000	1000	
trans-1,2-Dichloroethene	< 10	10	
trans-1,3-Dichloropropene	< 1	1	
Trichloroethene	< 0.2	0.2	
Trichlorofluoromethane	< 100	100	
Vinyl Acetate	< 50	50	
Vinyl Bromide	< 0.1	0.1	
Vinyl Chloride	< 0.5	0.5	
4-bromofluorobenzene (surrogate)	95%		
Analysis Date/Time:	04-11-18/13:43		
Analyst Initials	tjg		

<u>LCS/LCSD</u>	<u>LCS Results (ppbv)</u>	<u>LCSD Results (ppbv)</u>	<u>LCS/D Conc(ppbv)</u>	<u>LCS Rec.</u>	<u>LCSD Rec.</u>	<u>RPD</u>	<u>Flag</u>
Propylene	9.88	9.27	10	99%	93%	6.4%	
Dichlorodifluoromethane	11	9.73	10	110%	97%	12.3%	
Chloromethane	10.3	9.34	10	103%	93%	9.8%	
Vinyl Chloride	8.57	8.55	10	86%	86%	0.2%	
1,3-Butadiene	9.95	9.01	10	100%	90%	9.9%	
Bromomethane	8.42	8.02	10	84%	80%	4.9%	
Chloroethane	9.91	9.17	10	99%	92%	7.8%	
Vinyl Bromide	8.87	9.2	10	89%	92%	3.7%	
Trichlorofluoromethane	8.92	8.43	10	89%	84%	5.6%	
Acetone	9.44	9.49	10	94%	95%	0.5%	
1,1-Dichloroethene	11	9.32	10	110%	93%	16.5%	
Methylene Chloride	10.8	10.2	10	108%	102%	5.7%	
Carbon Disulfide	11.1	10	10	111%	100%	10.4%	
trans-1,2-Dichloroethene	10.6	10.1	10	106%	101%	4.8%	
Methyl-tert-butyl ether	9.97	10.1	10	100%	101%	1.3%	
1,1-Dichloroethane	10.4	9.45	10	104%	95%	9.6%	
Vinyl Acetate	9.77	9.94	10	98%	99%	1.7%	
N-Hexane	10.3	9.29	10	103%	93%	10.3%	
2-Butanone (MEK)	9.42	9.21	10	94%	92%	2.3%	
cis-1,2-Dichloroethene	10.2	9.69	10	102%	97%	5.1%	
Ethyl Acetate	8.86	8.45	10	89%	85%	4.7%	
Chloroform	10.4	10.2	10	104%	102%	1.9%	
Tetrahydrofuran	8.28	8.1	10	83%	81%	2.2%	
1,2-Dichloroethane	9.8	9.61	10	98%	96%	2.0%	
1,1,1-Trichloroethane	9.63	9.57	10	96%	96%	0.6%	
Carbon Tetrachloride	9.35	9.58	10	94%	96%	2.4%	
Benzene	10.2	10.1	10	102%	101%	1.0%	
Cyclohexane	10.4	9.97	10	104%	100%	4.2%	
1,2-Dichloropropane	9.63	9.91	10	96%	99%	2.9%	
Trichloroethene	9.9	10.1	10	99%	101%	2.0%	
Bromodichloromethane	9.78	9.95	10	98%	100%	1.7%	
1,4-Dioxane	9.14	9	10	91%	90%	1.5%	
Isooctane	10	10.2	10	100%	102%	2.0%	
N-Heptane	8.88	9.01	10	89%	90%	1.5%	
cis-1,3-Dichloropropene	10.4	10.7	10	104%	107%	2.8%	
4-Methyl-2-pentanone (MIBK)	8.53	8.74	10	85%	87%	2.4%	
trans-1,3-Dichloropropene	10.4	10.7	10	104%	107%	2.8%	
1,1,2-Trichloroethane	10.7	11	10	107%	110%	2.8%	
Toluene	10.7	11	10	107%	110%	2.8%	
2-Hexanone	9.31	9.53	10	93%	95%	2.3%	
Dibromochloromethane	8.9	9.14	10	89%	91%	2.7%	
1,2-dibromoethane (EDB)	8.57	8.78	10	86%	88%	2.4%	
Tetrachloroethene	8.99	8.95	10	90%	90%	0.4%	
Chlorobenzene	9.5	9.63	10	95%	96%	1.4%	
Ethylbenzene	9.5	9.84	10	95%	98%	3.5%	
m,p-Xylene	19.7	20.1	20	99%	101%	2.0%	
Bromoform	8.75	8.84	10	88%	88%	1.0%	

Analytical Report

<u>LCS/LCSD</u>	<u>LCS Results (ppbv)</u>	<u>LCSD Results (ppbv)</u>	<u>LCS/D</u> <u>Conc(ppbv)</u>	<u>LCS</u> <u>Rec.</u>	<u>LCSD</u> <u>Rec.</u>	<u>RPD</u>	<u>Flag</u>
Styrene	10.1	10.4	10	101%	104%	2.9%	
1,1,2,2-Tetrachloroethane	9.3	9.66	10	93%	97%	3.8%	
o-Xylene	10.4	10.9	10	104%	109%	4.7%	
4-Ethyltoluene	11.1	11.5	10	111%	115%	3.5%	
1,3,5-Trimethylbenzene	10.4	10.9	10	104%	109%	4.7%	
1,2,4-Trimethylbenzene	11.1	11.7	10	111%	117%	5.3%	
1,3-Dichlorobenzene	9.38	9.81	10	94%	98%	4.5%	
Benzyl Chloride	10.2	10.6	10	102%	106%	3.8%	
1,4-Dichlorobenzene	10.8	11.4	10	108%	114%	5.4%	
1,2-Dichlorobenzene	11.3	11.7	10	113%	117%	3.5%	
1,2,4-Trichlorobenzene	11.4	11.2	10	114%	112%	1.8%	
Hexachloro-1,3-butadiene	9.72	11.9	10	97%	119%	20%	
4-bromofluorobenzene (surrogate)	102%	107%					
Analysis Date/Time:	04-11-18/12:25	04-11-18/14:24					
Analyst Initials	tjg	tjg					



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Flag Number

1

Comments

Reporting limit is supported by MDL. TJG

CHAIN OF CUSTODY RECORD

EnvisionAir | 1441 Sadlier Circle West Drive | Indianapolis, IN 46239 | Phone: (317) 351-0885 | Fax: (317) 351-0882

Client: <u>Enviroforensics</u>	P.O. Number: <u>2018-0499</u>
Report Address: <u>N16w 23390 Stoneridge Dr. Waukesha, WI</u>	Project Name or Number: <u>6350</u>
Report To: <u>Brian Kappen</u>	Sampled by: <u>Wade Duda</u>
Phone: <u>414-326-4412</u>	QA/QC Required: (circle if applicable) Level III (Level IV)
Invoice Address: <u>same</u>	Reporting Units needed: (circle) ug/m³ mg/m ³ PPBV PPMV
Desired TAT: (Please Circle One) 1 day 2 days 3 days 5 bus. days	Media type: 1LC = 1 Liter Canister 6LC = 6 Liter Canister TB = Tedlar Bag TD = Thermal Desorption Tube

REQUESTED PARAMETERS

TO-15 Full List

TO-15 Short List (Specify in notes)



Sampling Type:
 Soil-Gas:
 Sub-Slab:
 Indoor-Air:

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Canister Pressure / Vacuum

Air Sample ID	Media Type <small>(see code above)</small>	Coll. Date <small>(Grab/Comp Start)</small>	Coll. Time <small>(Grab/Comp Start)</small>	Coll. Date <small>(Comp. End)</small>	Coll. Time <small>(Comp. End)</small>					Canister Serial #	Flow Controller Serial #	Initial Field (in. Hg)	Final Field (in. Hg)	Lab Received (in. Hg)	EnvisionAir Sample Number
6350-0A	6LC	4-5-18	825	4-5-18	1540	X				11089	07434	-29	-7	-7	18-1089
6350-1422N4thSt-IA-1B	6LC	4-5-18	833	4-6-18	1030	X				15566	02218	-29	-2	-2	18-1090
6350-1422N4thSt-IA-1A	6LC	4-5-18	831	4-5-18	1555	X				14937	07459	-29	-9	-9	18-1091
6350-1422N4thSt-IA-B1	6LC	4-5-18	840	4-5-18	1550	X				4654	07435	-28	-2	-2	18-1092
6350-1422N4thSt-IA-B2	6LC	4-5-18	843	4-5-18	1537	X				17902	05717	-29	-8	-8	18-1093
6350-1422N4thSt-IA-2A	6LC	4-5-18	855	4-5-18	1600	X				4683	07691	-29	-9	-9	18-1094
6350-1422N4thSt-IA-2B	6LC	4-5-18	858	4-5-18	1557	X				4693	07752	-29	-6	-6	18-1095
6350-1422N4thSt-SSV-1	1LC	4-6-18	1130	4-6-18	1135	X				521	0010	-28	-3	-3	18-1096
6350-1422N4thSt-SSV-2	1LC	4-6-18	1215	4-6-18	1220	X				83923	0026	-28	-2	-2	18-1097
6350-1422N4thSt-SSV-3	1LC	4-6-18	1230	4-6-18	1235	X				518	0091	-29	-4	-4	18-1098

Comments: 02218 Flow controller → 24hr Level IV QA/QC on 6LC only.

Relinquished by:	Date	Time	Received by:	Date	Time
<u>[Signature]</u>	<u>4-6-18</u>		<u>Fed Ex</u>		
			<u>[Signature]</u>	<u>4/9/18</u>	<u>1100</u>



Understanding Chemical Vapor Intrusion Testing Results

From the Lab to You

Chemical vapor samples were taken from underneath your house or building and possibly indoors as well. These samples have been tested by a certified laboratory and a report was issued. The Wisconsin Department of Natural Resources (DNR) uses these test results to determine if people in the building are being exposed to chemical vapors coming from nearby contaminated soil or groundwater, and to decide what, if any, action is needed to prevent this exposure.

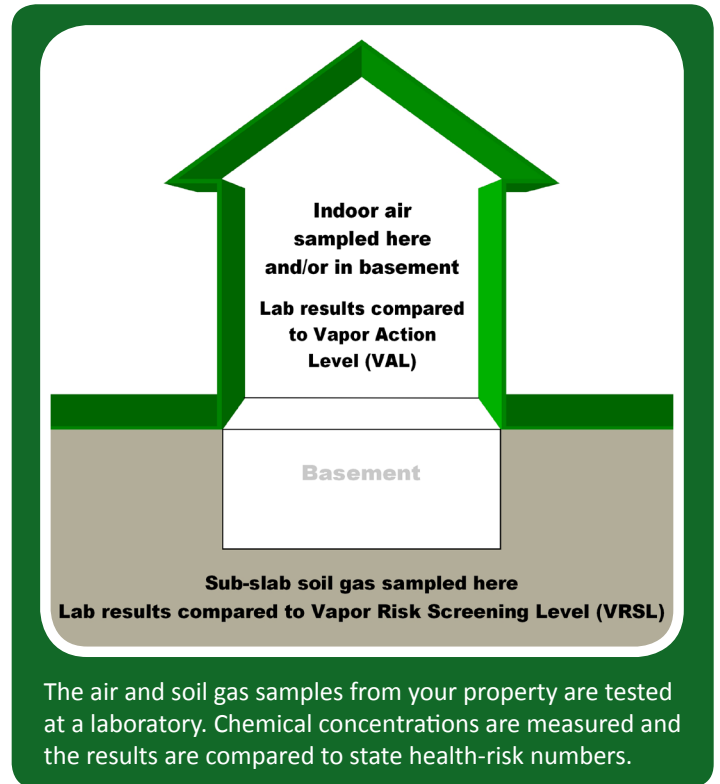
Indoor Air Testing Results

If indoor air samples were collected in your house or building, test results from the lab will be compared to the state Vapor Action Level (VAL) for chemicals of concern. The VAL is a chemical compound's numerical value that represents a health hazard risk to no more than 1 in 100,000 people during a lifetime of exposure. If test results show chemical concentrations in your air below the VAL then adverse health effects are extremely rare, even if you were to breathe the chemical at this concentration for your entire life.

Test results showing chemical concentrations in the air at or above the VAL prompt DNR to recommend that exposure to these chemical vapors be reduced. If test results show concentrations significantly above the VAL, or more than one type of chemical vapor is identified in your indoor air, the risk from exposure increases. If the concentration of any indoor chemical vapor greatly exceeds the VAL, DNR is concerned about even short-term exposure and will typically require immediate action to address the problem.

The VAL for each chemical is set by scientific research. It is protective of all people, including those who are most susceptible to adverse health effects.

If test results identify chemicals in your air that are not present in nearby soil or groundwater contamination, it is likely that these vapors are coming from some product or activity in or near your house or building. Many everyday consumer products (e.g., cleaners, solvents, polish, adhesives, lubricants, aerosols, insect repellants, etc.); combustion processes (e.g., smoking, home heating); fuels in attached garages; dry cleaned clothing or draperies; and occupant activities (e.g., craft hobbies), also release chemical vapors into the air.



Sub-slab Soil Gas Testing Results

Soil gas samples were collected from the ground beneath the concrete slab of your building foundation or basement. The lab measured the concentrations of various chemicals in these samples. DNR compares these measurements to the state Vapor Risk Screening Level (VRSL), which identifies the concentration of a chemical in soil gas that scientific research suggests can be a health risk if vapor enters a building. If soil gas measurements exceed the VRSL for a chemical of concern, action to reduce exposure is strongly recommended.

The VRSL is a higher number (higher chemical concentration) than the VAL because it is presumed that concrete building foundations and basement walls will prevent most soil gas from entering a building. Further, any soil gas that does enter a building through cracks, holes, sump pumps, drains, etc., will be diluted to some extent by the indoor air. So, people inside will not be breathing air that includes the full concentration of chemical vapors that exist in the ground.



DNR generally relies on the test results of the sub-slab soil gas samples when determining what, if any, action should be taken related to chemical vapors coming from nearby soil or groundwater contamination. Indoor air quality is highly variable, and it is difficult to make a definitive decision about vapor intrusion based on indoor air sampling alone.

Follow-Up Actions

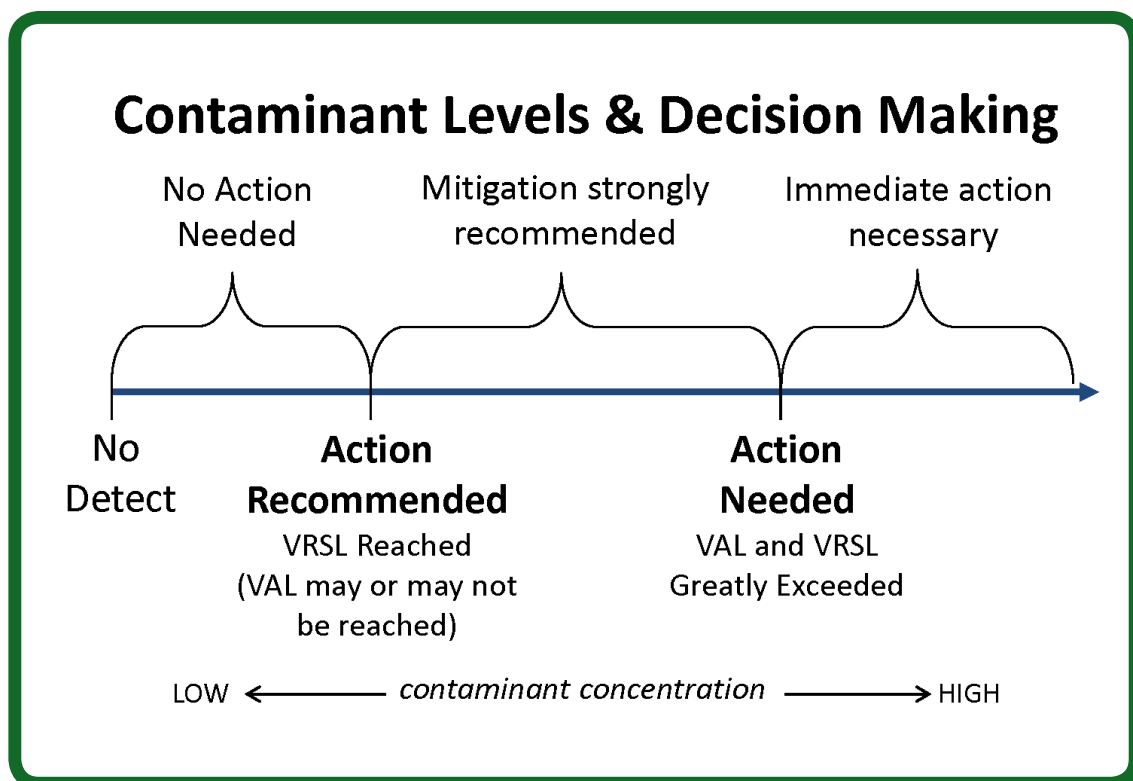
If your test results are less than a VAL for indoor air, or a VRSL for sub-slab soil gas, then the air in the house or building should not present a health concern. Follow-up sampling and testing may be necessary to confirm the results, but no other action is typically suggested.

When test results show soil gas chemical concentrations above a VRSL, both DNR and the Wisconsin Department of

Health Services recommend that owners take action to reduce potential exposure. This typically involves installing a vapor mitigation system that vents chemical vapors from beneath your home or building to the outdoors, similar to a radon mitigation system.

If indoor air concentrations exceed a VAL, but sub-slab concentrations are less than a VRSL, then the chemical vapors are most likely coming from indoor sources. Steps should be taken by the house or building owner to identify the products and practices causing the problem and implement appropriate remedies.

If soil gas mitigation is recommended, a representative of the party who is responsible for the soil or groundwater contamination will contact you to discuss your options.



A Note about Measurement Units: The lab report may include some unfamiliar technical language. The most important point to note is whether or not the test result for a specific chemical exceeds a VAL or VRSL, which are also sometimes referred to, generically, as "screening levels."

The concentration of gaseous pollutants in air is typically described in two different ways: 1) as units of mass per volume, where $\mu\text{g}/\text{m}^3$ represents micrograms of gaseous pollutant per cubic meter of ambient air; and 2) as parts per billion by volume (ppbv), where the volume of a gaseous pollutant is compared to a set volume of ambient air. These are the numbers that are compared to the VAL and VRSL.

For more information, visit dnr.wi.gov/topic/Brownfields/Vapor.html