October 1, 2020

Mr. Samuel Edwards
Luvata Appleton, LLC
553 Carter Street
Kimberly, WI 54136

Subject: **Groundwater and Sub-slab Vapor Sampling Results**
BRRTS#: 02-45-000015

Dear Mr. Edwards:

In accordance with the executed Agreement to Provide Access for Sampling Activities, and in accordance with Wisconsin Department of Natural Resources (WDNR) regulation NR 716.14, EnviroForensics, LLC (EnviroForensics) is providing the results of post-remedial groundwater sampling, along with the results of the high purge volume sub-slab sampling performed from June 30, 2020 through July 2, 2020. The locations of the groundwater monitoring wells are shown on **Figure 1** and the locations of sub-slab vapor samples are indicated as EP-1 and EP-2 on **Figure 2**. The contaminant of concern for this site is chromium. In addition, to satisfy eventual conditions for site closure, groundwater samples were collected from wells MW-19R, MW-20R, and MW-28R and analyzed for per- and polyfluoroalkyl substances (PFAS).

The sampling activities were conducted at the direction of the WDNR as part of the post-remedial monitoring that they require. The WDNR has assigned the following identification to the former chromium plating facility: BRRTS# 02-45-000015.

The Responsible Party is:

Albany International.
P.O. Box 1939
Appleton, WI 54913

Groundwater Chromium Remediation Sampling Results

The groundwater analytical results for chromium, iron, and manganese are summarized and compared to public health criteria in the attached **Table 1**. The laboratory report is also attached. As can be seen in **Table 1**, chromium was not detected at concentrations exceeding the laboratory detection limits in any well sampled, except for at MW-20R. The concentration of chromium in this well was 10.9 micrograms per liter, which is just above the preventative action limit (PAL) of 10 micrograms per liter. Total

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dissolved iron and manganese concentrations exceeded applicable WDNR standards; however, these elements are integral reactants of the remedial injection process to reduce chromium and are anticipated to decrease over time.

Groundwater Sampling for PFAS

Groundwater samples were collected from wells MW-19R, MW-20R, and MW-28R and analyzed for per- and polyfluoroalkyl substances (PFAS). PFAS are a category of compounds having fluorene atoms attached to short and long chained hydrocarbon molecules. There are over 4,000 of these such compounds. They are all man-made compounds and have been used in various manufactured products and manufacturing processes. They are very ubiquitous, long-lived in the environment, and bioaccumulate in living organisms. They have been utilized in the manufacture of non-stick food wrappings, stain and water repellents, cosmetics, fire-fighting foams, and non-stick cookware to name just a few applications. They have also been widely used in the electrochemical plating process. Some of these compounds are hazardous and can cause health issues such as increased cholesterol, reduced fertility in women, impacts to the immune system, and increased cancer risks.

At this time, the WDNR is working with the Wisconsin Department of Health Services (DHS) to establish health based risk level standards for some of these compounds. Currently, the WDNR has proposed regulatory standards for two (2) PFAS compounds in groundwater. The proposed standard is 20 nanograms per liter (or parts per trillion) in either individual or combined concentrations of PFOA and PFOS. Within the next two (2) years, it is anticipated that the WDNR will promulgate soil, groundwater, and drinking water regulatory standards for the PFAS compounds of greatest health and environmental concern. In the meantime, the WDNR is requiring that at risk sites be tested for 34 individual PFAS compounds. At risk sites include industries that manufacture these compounds or readily use them in their manufacturing process, fire-fighting training facilities, and commercial enterprises that may have applied products containing these compounds.

The WDNR has indicated that before granting case closure they will require sampling for these compounds at the former Albany chrome plating facility since these compounds have been widely used in electrochemical plating processes, most notably as mist and fume suppressants. Albany International has decided it is in their best interests to sample now, rather than wait for a formal request from the WDNR or to wait one to two years for final standards to be promulgated, as waiting could significantly delay case closure.

The results of PFAS sampling can be seen in **Table 2**, and the attached analytical report from the Wisconsin State Laboratory of Hygiene. As can be seen in **Table 2**, and the laboratory report, all three wells sampled have combined or individual concentrations of PFOA or PFOS above the proposed standard of 20 ng/L. Several other PFAS compounds were detected in concentrations exceeding their respective laboratory detection limits. However, many of the compounds have qualifiers or have not been

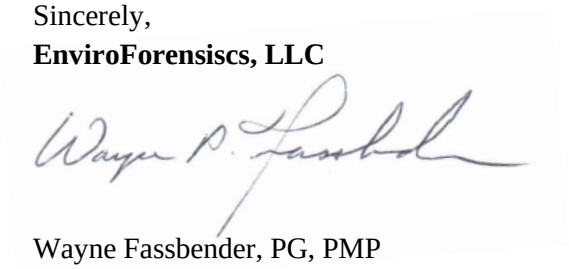
reported by the laboratory indicating that either they failed the laboratory QA/QC criteria, or there were interferences in the sample that masked clear quantification. In either case, the results for these compounds may not be accurate or valid.

Sub-slab Vapor

High purge sub-slab sampling was performed in the manufacturing area of your facility due to the presence of chlorinated volatile organic compounds (CVOCs) detected in the soil and groundwater in this area. Sub-slab vapor samples were collected from two (2) extraction points identified as HPV-1 and HPV-2 on **Figure 2**. A planned third extraction point was not needed due to a large radius of negative pressure of at least 35 feet. This allowed subsurface vapor to be collected from an area having approximate dimensions of 70 feet wide by 140 feet long. This is representative of the area that required sampling. As can be seen in the attached analytical reports, there were no CVOCs detected at concentrations exceeding the laboratory detection limits for those compounds.

If you have any questions or concerns, please contact me at 414-982-3988 or by email at wfassbender@enviroforensics.com. The WDNR project manager, Bruce Leroy, can be reached at (920) 889-0151. We greatly appreciate your help and patience with this matter.

Sincerely,
EnviroForensiscs, LLC



Wayne Fassbender, PG, PMP
Senior Project Manager

Copy: BJ Leroy, Wisconsin Department of Natural Resources

Attachments:

Table 1: Groundwater Remediation Performance Monitoring Data
Table 2: PFAS Groundwater Analytical Results
Figure 1: Post-remedial Groundwater Monitoring Well Network
Figure 2: High Purge Volume Vapor Intrusion Assessment Layout
Groundwater Chromium Remediation Laboratory Analytical Report
PFAS Laboratory Analytical Report
Sub-slab Vapor Analytical Reports

TABLE 1
GROUNDWATER REMEDIATION PERFORMANCE MONITORING DATA
Former Appleton Wire Facility
908 North Lawe Street, Appleton, Wisconsin

Monitoring Well Identification	Screen Interval	Remediaion Status	Sample Date	Dissolved Metals		
				Chromium	Manganese	Iron
Reporting Units				**µg/L**	**µg/L**	**µg/L**
MW-19/19R		Pre	4/23/18	**18,900**	<11.3	<155
		Post Pilot Test	7/16/18	**172**	**948**	**22,400**
		Post Pilot Test	8/20/18	**97.6**	**1640**	**88,200**
		Post Pilot Test	1/21/2019*	**16.1**	**608**	**12,200**
		Post Full Scale	4/10/2020	<3.9	**59.4**	**6,870**
			6/30/2020	<3.9	**111.0**	**8,880**
MW-19A/19AR	37.5 - 42.5	Pre	6/29/2017	**8.1 J**	**17.8**	**29.0 J**
			4/23/2017	<2.5	**26.2**	<15.5
		Post Full Scale	7/1/2020	<3.9	**28.9**	**130**
MW-20/20R		Pre	04/23/18	**296,000**	<11.3	<155
		Post Pilot Test	07/16/18	**161,000**	**99.1**	**929 J**
		Post Pilot Test	08/20/18	**174,000**	**73.1**	**156**
		Post Pilot Test	1/21/2019	**179,000**	**37.1**	<35.4
		Post Full Scale	4/10/2020	**7.0 J**	**114**	**9,250**
			6/30/2020	**10.9**	**166**	**2,300**
MW-20A/20AR	29.7 - 34.7	Pre	06/28/17	**6.5 J**	**78.6**	**2,060**
			04/23/18	<2.5	**24.5**	<15.5
		Post Full Scale	7/1/2020	<3.9	**51.4**	**430**
MW-25		Post Full Scale	7/1/2020	<3.9	**139**	**680**
MW-26/26R	4.0 - 14.0	Post Pilot Test	07/16/18	**21,600**	**115**	**3,550**
		Post Pilot Test	08/20/18	**17,100**	**15.6**	<15.5
		Post Pilot Test	1/21/2019	**26,700**	**1.5 J**	<35.4
		Post Full Scale	4/10/2020	<3.9	**17.9**	**220**
			7/1/2020	<3.9	**39.3**	**110**
MW-28/28R	4.0 - 14.0	Pre	06/28/17	**3,890**	**43.2**	**53.6 J**
		Pre	8/31/2017	**390**	NA	NA
		Post Full Scale	4/10/2020*	<3.9	**67.8**	**680 J**
			6/30/2020	<3.9	**206**	**20,800**
MW-30/30R		Pre	8/31/2017	**3,540**	NA	NA
		Post Full Scale	4/10/2020	<3.9	**20.1**	**900**
			7/1/2020	<3.9	<4.2	**80 J**
MW-32		Post Full Scale	7/2/2020	<3.9	**59.9**	**60 J**
MW-32A		Post Full Scale	7/2/2020	<3.9	**38**	**160**

Notes:

Bolded values are above laboratory detection limits
Bolded and blue colored values are above the groundwater preventative action limit (PAL)
Bolded and orange colored values are above the groundwater enforcement standard (ES)

J = Analyte concentration detected between the laboratory Reporting Limit and Method Detection Limit

* = Purging and sampling performed using low-flow methods. All other samples collected using a bailer.
µg/L = micrograms per liter

TABLE 2

PFAS GROUNDWATER ANALYTICAL RESULTS

Albany International - Luvata Site

908 N. Lawe St., Appleton, Wisconsin

Monitoring Well	Sample Date	PFOA	PFOS	PFHxA	PFHxS	PFHpA	PHFpS	PFBA	PFBS	PFNA	PFNS	PFDA	PFDS	PFPeA	PFPeS	HFPO-DA	PFDoA	PFDoS	PFUnA	PFTrDA	PFTeDA	4:2 FTSA	6:2 FTSA	8:2 FTSA	10:2 FTSA	9CL-PF3ONS	11CL-PF3OUd	DONA	FOSA	N-MeFOSAA	N-EtFOSAA	N-MeFOSA	N-MeFOSE	N-EtFOSA	N-EtFOSE
Proposed Groundwater Enforcement Standard		**20***	**20***	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
MW-19R	6/30/2020	**43.8**	**8.08**	**27.8**	**5.59**	**26.7**	**0.788F**	**799**	**324**	**4.36**	<0.688	**0.602F**	<0.627	**31.3**	**2.18**	<0.726	<0.529	<0.713	<0.560	<0.552	<0.488	<0.622	<0.705	<0.615	<0.597	<0.578	<0.542	<0.579	<5.60	<0.739	<0.590	<1.1	<0.557	<0.906	<0.568
MW-20R	6/30/2020	**17.1**	**4.03**	**25.1**	**1.95**	**NR**	<0.730	**98.9**	**NR**	<0.788	<0.913	<0.718	<0.832	**NR**	<0.495	**3.25**	<0.701	<0.945	<0.743	<0.732	<0.647	**3.34**	<0.935	<0.815	<0.792	<0.767	<0.720	**NR**	<7.43	<0.980	<0.783	<1.47	<0.739	<1.2	<0.754
MW-28R	6/30/2020	**30.2**	**16.2**	**15.3**	**3.23**	**13.3**	<0.854	**575FRB**	**27.1**	**6.7**	<1.07	<0.839	<0.972	**13.6**	**1.93**	<1.13	<0.820	<1.11	<0.869	<0.856	<0.757	<0.964	<1.09	<0.953	<0.926	<0.896	<0.841	<0.898	<8.69	<1.15	<0.915	<1.72	<0.865	<1.41	<0.881

Notes:

All concentrations reported in units of nanograms per liter (ng/L)

Bolded and orange shaded values are above proposed groundwater enforcement standards

Bolded values are above detection limits

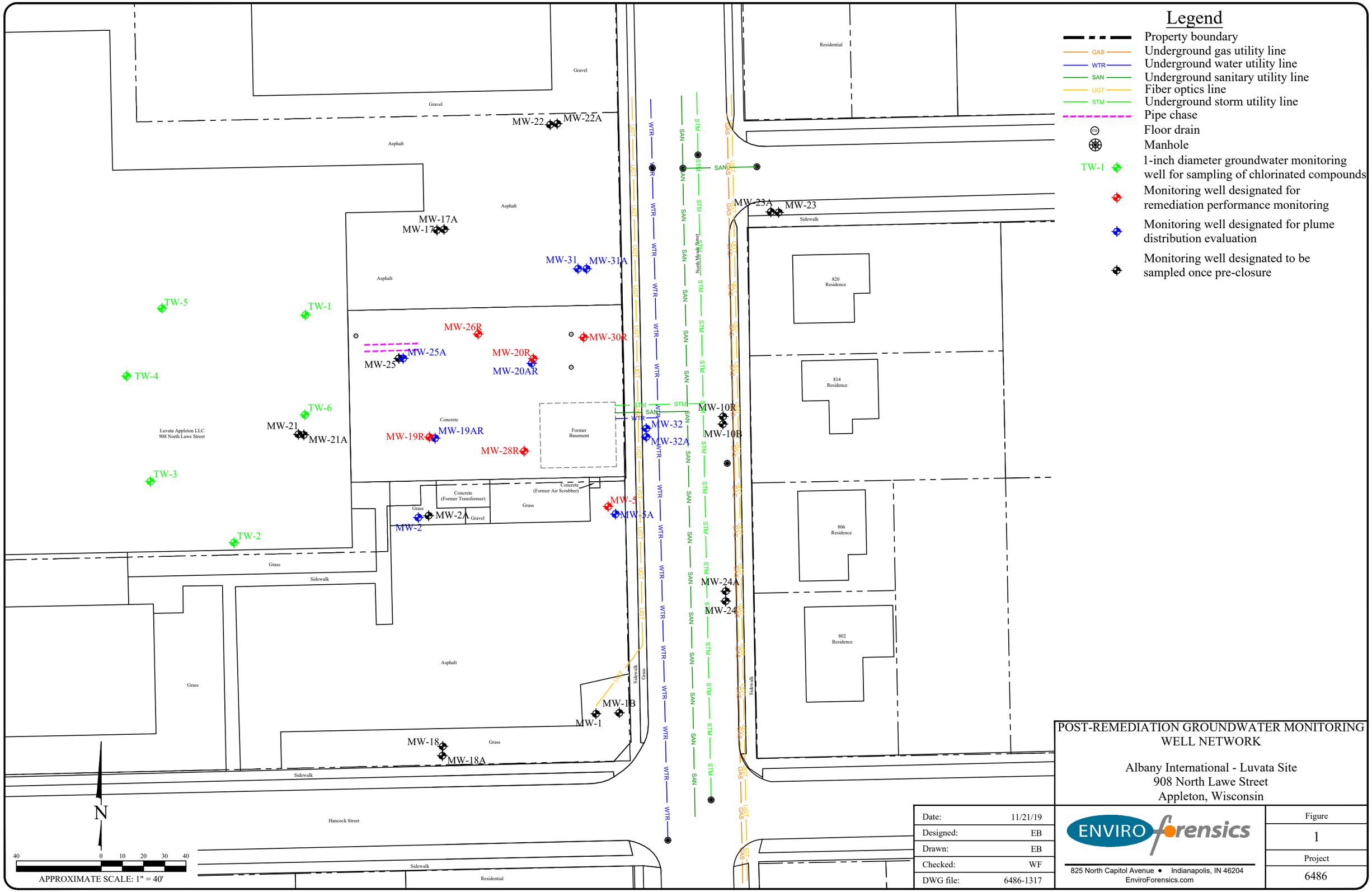
***** Proposed groundwater standard applies to individual compound or combined PFOA and PFOS.

F = Analyte concentration detected between the laborator level of detection and the level of quantification

FRB = Compound detected in field reagent blank

NR = Not reported due to failure of laboratory QC

NE = Not Established



POST-REMEDIATION GROUNDWATER MONITORING WELL NETWORK

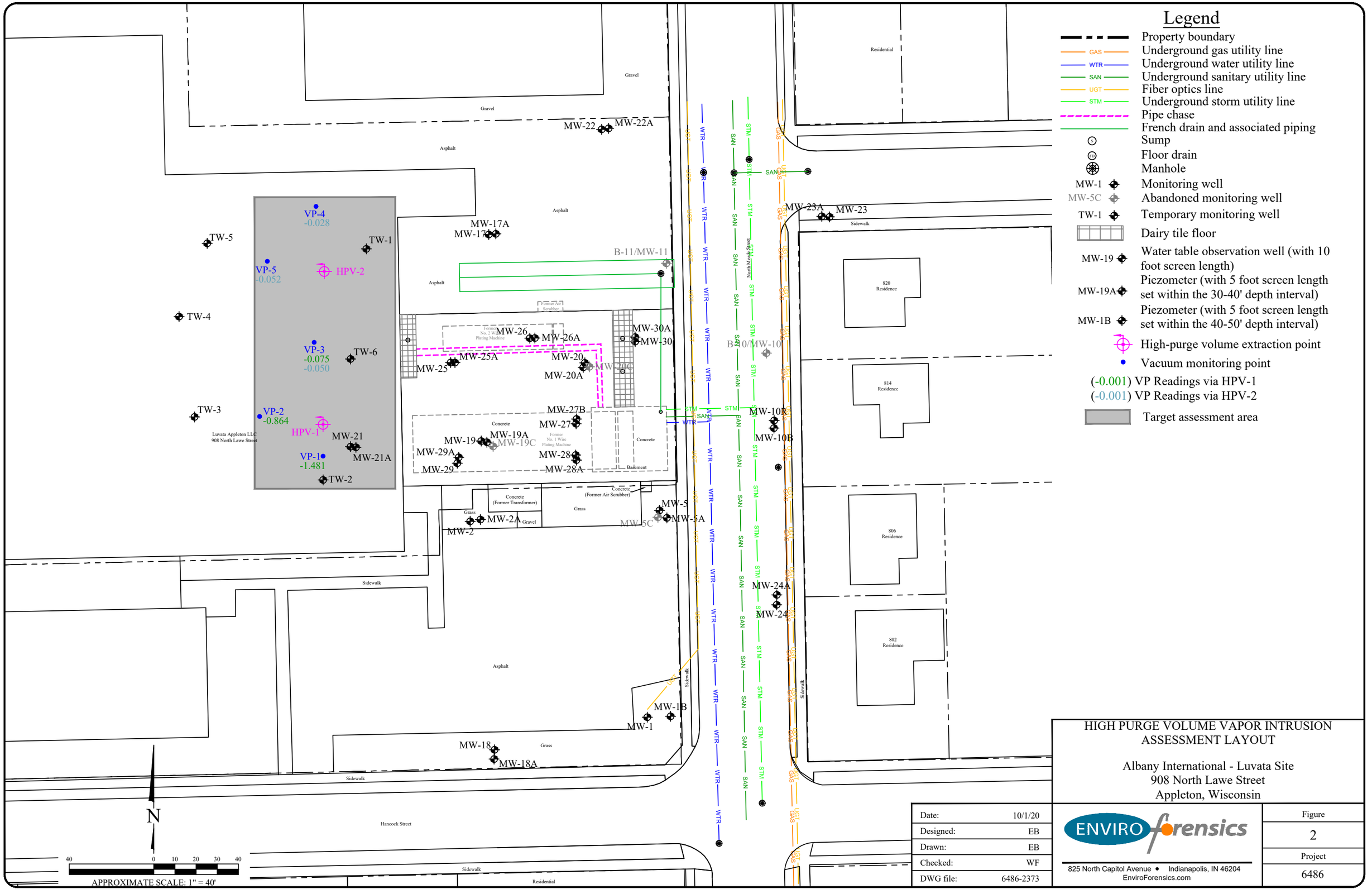
Albany International - Luvata Site
908 North Lawe Street
Appleton, Wisconsin

Date:	11/21/19
Designed:	EB
Drawn:	EB
Checked:	WF
DWG file:	6486-1317

ENVIRO forensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com

Figure 1

Project 6486


Legend
Property boundary
Underground gas utility line
Underground water utility line
Underground sanitary utility line
Fiber optics line
Underground storm utility line
Pipe chase
French drain and associated piping
Sump
Floor drain
Manhole
MW-1 Monitoring well
MW-5C Abandoned monitoring well
TW-1 Temporary monitoring well
Dairy tile floor
MW-19 Water table observation well (with 10 foot screen length)
MW-19A Piezometer (with 5 foot screen length set within the 30-40' depth interval)
MW-1B Piezometer (with 5 foot screen length set within the 40-50' depth interval)
High-purge volume extraction point
Vacuum monitoring point
(-0.001) VP Readings via HPV-1
(-0.001) VP Readings via HPV-2
Target assessment area
VP-4 -0.028
VP-5 -0.052
VP-3 -0.075 -0.050
VP-2 -0.864
VP-1 -1.481
HPV-1
HPV-2
TW-1
TW-2
TW-3
TW-4
TW-5
TW-6
MW-1
MW-2
MW-5
MW-5A
MW-5C
MW-10B
MW-10R
MW-17
MW-17A
MW-18
MW-18A
MW-19
MW-19A
MW-19C
MW-20
MW-20A
MW-21
MW-21A
MW-22
MW-22A
MW-23
MW-23A
MW-24
MW-24A
MW-25
MW-25A
MW-26
MW-26A
MW-27
MW-27B
MW-28
MW-28A
MW-29
MW-29A
MW-30
MW-30A
B-11/MW-11
B-10/MW-10
Luvata Appleton LLC
908 North Lawe Street
Gravel
Asphalt
Concrete
Grass
Sidewalk
Hancock Street
Residential
Former No. 2 Wire Plating Machine
Former No. 1 Wire Plating Machine
Former Air Scrubber
Concrete (Former Transformer)
Basement
820 Residence
814 Residence
806 Residence
802 Residence
N
40 0 10 20 30 40
APPROXIMATE SCALE: 1" = 40'
HIGH PURGE VOLUME VAPOR INTRUSION ASSESSMENT LAYOUT
Albany International - Luvata Site
908 North Lawe Street
Appleton, Wisconsin
Date: 10/1/20
Designed: EB
Drawn: EB
Checked: WF
DWG file: 6486-2373
ENVIRO forensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com
Figure 2
Project 6486

Synergy Environmental Lab, INC

1990 Prospect Ct., Appleton, WI 54914 *P 920-830-2455 * F 920-733-0631

WAYNE FASSBENDER
ENVIROFORENSICS
N16 W 23390 STONERIDGE DR
WAUKESHA WI 53188

Report Date *14-Jul-20*

Project Name ALBANY CHROME SITE **Invoice #** E38141
Project # 6486 PO#2020-1492

Lab Code 5038141A
Sample ID 6486-MW19R
Sample Matrix Water
Sample Date 6/30/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
cis-1,2-Dichloroethene	1.22	ug/l	0.39	1.2	1	8260B		7/9/2020	CJR	1
trans-1,2-Dichloroethene	< 0.37	ug/l	0.37	1.2	1	8260B		7/9/2020	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1	1	8260B		7/9/2020	CJR	1
Trichloroethene (TCE)	< 0.47	ug/l	0.47	1.5	1	8260B		7/9/2020	CJR	1
Vinyl Chloride	< 0.2	ug/l	0.2	0.65	1	8260B		7/9/2020	CJR	1
SUR - 1,2-Dichloroethane-d4	98	REC %			1	8260B		7/9/2020	CJR	1
SUR - 4-Bromofluorobenzene	122	REC %			1	8260B		7/9/2020	CJR	1
SUR - Dibromofluoromethane	116	REC %			1	8260B		7/9/2020	CJR	1
SUR - Toluene-d8	103	REC %			1	8260B		7/9/2020	CJR	1

Lab Code 5038141B
Sample ID 6486-MW20R
Sample Matrix Water
Sample Date 6/30/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Inorganic										
Metals										
Chromium, Dissolved	10.9	ug/L	3.9	12.8	1	200.7		7/8/2020	CWT	1
Iron, Dissolved	23	mg/l	0.03	0.1	1	200.7		7/8/2020	CWT	1
Manganese, Dissolved	166	ug/L	4.2	13.8	1	200.7		7/8/2020	CWT	1

Project Name ALBANY CHROME SITE **Invoice #** E38141
Project # 6486 PO#2020-1492

Lab Code 5038141C
Sample ID 6486-MW19R
Sample Matrix Water
Sample Date 6/30/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Inorganic										
Metals										
Chromium, Dissolved	< 3.9	ug/L	3.9	12.8	1	200.7		7/8/2020	CWT	1
Iron, Dissolved	8.88	mg/l	0.03	0.1	1	200.7		7/8/2020	CWT	1
Manganese, Dissolved	111	ug/L	4.2	13.8	1	200.7		7/8/2020	CWT	1

Lab Code 5038141D
Sample ID 6486-MW28R
Sample Matrix Water
Sample Date 6/30/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Inorganic										
Metals										
Chromium, Dissolved	< 3.9	ug/L	3.9	12.8	1	200.7		7/8/2020	CWT	1
Iron, Dissolved	20.8	mg/l	0.03	0.1	1	200.7		7/8/2020	CWT	1
Manganese, Dissolved	206	ug/L	4.2	13.8	1	200.7		7/8/2020	CWT	1

Lab Code 5038141E
Sample ID 6486-MW30R
Sample Matrix Water
Sample Date 7/1/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Inorganic										
Metals										
Chromium, Dissolved	< 3.9	ug/L	3.9	12.8	1	200.7		7/8/2020	CWT	1
Iron, Dissolved	0.08 "J"	mg/l	0.03	0.1	1	200.7		7/8/2020	CWT	1
Manganese, Dissolved	< 4.2	ug/L	4.2	13.8	1	200.7		7/8/2020	CWT	1

Lab Code 5038141F
Sample ID 6486-MW20AR
Sample Matrix Water
Sample Date 7/1/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Inorganic										
Metals										
Chromium, Dissolved	< 3.9	ug/L	3.9	12.8	1	200.7		7/8/2020	CWT	1
Iron, Dissolved	0.43	mg/l	0.03	0.1	1	200.7		7/8/2020	CWT	1
Manganese, Dissolved	51.4	ug/L	4.2	13.8	1	200.7		7/8/2020	CWT	1

Project Name ALBANY CHROME SITE **Invoice #** E38141
Project # 6486 PO#2020-1492

Lab Code 5038141G
Sample ID 6486-MW26R
Sample Matrix Water
Sample Date 7/1/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Inorganic										
Metals										
Chromium, Dissolved	< 3.9	ug/L	3.9	12.8	1	200.7		7/8/2020	CWT	1
Iron, Dissolved	0.11	mg/l	0.03	0.1	1	200.7		7/8/2020	CWT	1
Manganese, Dissolved	39.3	ug/L	4.2	13.8	1	200.7		7/8/2020	CWT	1

Lab Code 5038141H
Sample ID 6486-MW26R
Sample Matrix Water
Sample Date 7/1/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
cis-1,2-Dichloroethene	8.3	ug/l	0.39	1.2	1	8260B		7/9/2020	CJR	1
trans-1,2-Dichloroethene	0.82 "J"	ug/l	0.37	1.2	1	8260B		7/9/2020	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1	1	8260B		7/9/2020	CJR	1
Trichloroethene (TCE)	< 0.47	ug/l	0.47	1.5	1	8260B		7/9/2020	CJR	1
Vinyl Chloride	< 0.2	ug/l	0.2	0.65	1	8260B		7/9/2020	CJR	1
SUR - 1,2-Dichloroethane-d4	95	REC %			1	8260B		7/9/2020	CJR	1
SUR - 4-Bromofluorobenzene	116	REC %			1	8260B		7/9/2020	CJR	1
SUR - Dibromofluoromethane	116	REC %			1	8260B		7/9/2020	CJR	1
SUR - Toluene-d8	102	REC %			1	8260B		7/9/2020	CJR	1

Lab Code 5038141I
Sample ID 6486-MW25
Sample Matrix Water
Sample Date 7/1/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
cis-1,2-Dichloroethene	25.9	ug/l	0.39	1.2	1	8260B		7/9/2020	CJR	1
trans-1,2-Dichloroethene	1.58	ug/l	0.37	1.2	1	8260B		7/9/2020	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1	1	8260B		7/9/2020	CJR	1
Trichloroethene (TCE)	< 0.47	ug/l	0.47	1.5	1	8260B		7/9/2020	CJR	1
Vinyl Chloride	11.4	ug/l	0.2	0.65	1	8260B		7/9/2020	CJR	1
SUR - 1,2-Dichloroethane-d4	105	REC %			1	8260B		7/9/2020	CJR	1
SUR - 4-Bromofluorobenzene	123	REC %			1	8260B		7/9/2020	CJR	1
SUR - Dibromofluoromethane	118	REC %			1	8260B		7/9/2020	CJR	1
SUR - Toluene-d8	103	REC %			1	8260B		7/9/2020	CJR	1

Project Name ALBANY CHROME SITE **Invoice #** E38141
Project # 6486 PO#2020-1492

Lab Code 5038141J
Sample ID 6486-MW25
Sample Matrix Water
Sample Date 7/1/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Inorganic										
Metals										
Chromium, Dissolved	< 3.9	ug/L	3.9	12.8	1	200.7		7/8/2020	CWT	1
Iron, Dissolved	0.68	mg/l	0.03	0.1	1	200.7		7/8/2020	CWT	1
Manganese, Dissolved	139	ug/L	4.2	13.8	1	200.7		7/8/2020	CWT	1

Lab Code 5038141K
Sample ID 6486-MW19AR
Sample Matrix Water
Sample Date 7/1/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Inorganic										
Metals										
Chromium, Dissolved	< 3.9	ug/L	3.9	12.8	1	200.7		7/8/2020	CWT	1
Iron, Dissolved	0.13	mg/l	0.03	0.1	1	200.7		7/8/2020	CWT	1
Manganese, Dissolved	28.9	ug/L	4.2	13.8	1	200.7		7/8/2020	CWT	1

Lab Code 5038141L
Sample ID 6486-MW5
Sample Matrix Water
Sample Date 7/1/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Inorganic										
Metals										
Chromium, Dissolved	< 3.9	ug/L	3.9	12.8	1	200.7		7/8/2020	CWT	1
Iron, Dissolved	11.5	mg/l	0.03	0.1	1	200.7		7/8/2020	CWT	1
Manganese, Dissolved	408	ug/L	4.2	13.8	1	200.7		7/8/2020	CWT	1

Lab Code 5038141M
Sample ID 6486-MW5A
Sample Matrix Water
Sample Date 7/1/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Inorganic										
Metals										
Chromium, Dissolved	< 3.9	ug/L	3.9	12.8	1	200.7		7/8/2020	CWT	1
Iron, Dissolved	13.5	mg/l	0.03	0.1	1	200.7		7/8/2020	CWT	1
Manganese, Dissolved	1050	ug/L	4.2	13.8	1	200.7		7/8/2020	CWT	1

Project Name ALBANY CHROME SITE **Invoice #** E38141
Project # 6486 PO#2020-1492

Lab Code 5038141N
Sample ID 6486-MW2
Sample Matrix Water
Sample Date 7/1/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Inorganic										
Metals										
Chromium, Dissolved	< 3.9	ug/L	3.9	12.8	1	200.7		7/8/2020	CWT	1
Iron, Dissolved	0.1	mg/l	0.03	0.1	1	200.7		7/8/2020	CWT	1
Manganese, Dissolved	14.8	ug/L	4.2	13.8	1	200.7		7/8/2020	CWT	1

Lab Code 5038141O
Sample ID 6486-MW32
Sample Matrix Water
Sample Date 7/2/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Inorganic										
Metals										
Chromium, Dissolved	< 3.9	ug/L	3.9	12.8	1	200.7		7/8/2020	CWT	1
Iron, Dissolved	0.06 "J"	mg/l	0.03	0.1	1	200.7		7/8/2020	CWT	1
Manganese, Dissolved	59.9	ug/L	4.2	13.8	1	200.7		7/8/2020	CWT	1

Lab Code 5038141P
Sample ID 6486-MW32A
Sample Matrix Water
Sample Date 7/2/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Inorganic										
Metals										
Chromium, Dissolved	< 3.9	ug/L	3.9	12.8	1	200.7		7/8/2020	CWT	1
Iron, Dissolved	0.16	mg/l	0.03	0.1	1	200.7		7/8/2020	CWT	1
Manganese, Dissolved	38.3	ug/L	4.2	13.8	1	200.7		7/8/2020	CWT	1

Lab Code 5038141Q
Sample ID 6486-MW31A
Sample Matrix Water
Sample Date 7/2/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Inorganic										
Metals										
Chromium, Total	< 3.9	ug/L	3.9	12.8	1	200.7		7/8/2020	CWT	1
Iron, Total	217	mg/l	0.03	0.1	1	200.7		7/8/2020	CWT	1
Manganese, Total	7310	ug/L	4.2	13.8	1	200.7		7/8/2020	CWT	1

Project Name ALBANY CHROME SITE **Invoice #** E38141
Project # 6486 PO#2020-1492

Lab Code 5038141R
Sample ID 6486-MW31
Sample Matrix Water
Sample Date 7/2/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Inorganic										
Metals										
Chromium, Dissolved	< 3.9	ug/L	3.9	12.8	1	200.7		7/8/2020	CWT	1
Iron, Dissolved	26.4	mg/l	0.03	0.1	1	200.7		7/8/2020	CWT	1
Manganese, Dissolved	615	ug/L	4.2	13.8	1	200.7		7/8/2020	CWT	1

Lab Code 5038141S
Sample ID 6486-MW31
Sample Matrix Water
Sample Date 7/2/2020

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
cis-1,2-Dichloroethene	2.92	ug/l	0.39	1.2	1	8260B		7/9/2020	CJR	1
trans-1,2-Dichloroethene	0.57 "J"	ug/l	0.37	1.2	1	8260B		7/9/2020	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1	1	8260B		7/9/2020	CJR	1
Trichloroethene (TCE)	< 0.47	ug/l	0.47	1.5	1	8260B		7/9/2020	CJR	1
Vinyl Chloride	< 0.2	ug/l	0.2	0.65	1	8260B		7/9/2020	CJR	1
SUR - Toluene-d8	101	REC %			1	8260B		7/9/2020	CJR	1
SUR - 1,2-Dichloroethane-d4	101	REC %			1	8260B		7/9/2020	CJR	1
SUR - 4-Bromofluorobenzene	118	REC %			1	8260B		7/9/2020	CJR	1
SUR - Dibromofluoromethane	117	REC %			1	8260B		7/9/2020	CJR	1

"J" Flag: Analyte detected between LOD and LOQ LOD Limit of Detection LOQ Limit of Quantitation

Code	*Comment*
1	Laboratory QC within limits.

CWT denotes sub contract lab - Certification #445126660

All solid sample results reported on a dry weight basis unless otherwise indicated. All LOD's and LOQ's are adjusted for dilutions but not dry weight. Subcontracted results are denoted by SUB in the analyst field.

Authorized Signature

CHAIN OF CUSTODY RECORD

Synergy Environmental Lab, Inc.

1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • FAX 920-733-0631

Chain # Nº 327[illegible]

Page 1 of 2

Sample Handling Request
____ Rush Analysis Date Required ____
(Rushes accepted only with prior authorization)
X Normal Turn Around

Lab I.D. #	
Account No. :	Quote No.:
Project #: 6486	
Sampler: (signature) W. Fassbender	
Project (Name / Location): Albany Chrome Site, Appleton, WI	
Reports To: W. Fassbender	Invoice To: Same
Company EnviroForensics	Company
Address Waukesha, WI	Address
City State Zip	City State Zip
Phone 414-982-3988	Phone
FAX	FAX

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Comp	Grab	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation
503914 A	6486-MW19R	6/30/20	16:30		X	N	3	GW	HCL
B	6486-MW20R	"	16:00		X	Y	1	"	HNO_3
C	6486-MW19R	"	16:35		X	Y	1	"	"
D	6486-MW29R	"	16:30		X	Y	1	"	"
E	6486-MW30R	7/1/20	09:10		X	Y	1	"	"
F	6486-MW20AR	"	09:40		X	Y	1	"	"
G	6486-MW26R	"	10:30		X	Y	1	"	"
H	"	"	"		X	N	3	"	HCL
I	6486-MW25	"	11:10		X	N	3	"	"
J	6486-MW25	7/1/20	"		X	Y	1	"	HNO_3

Analysis Requested

DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	LEAD	NITRATE/NITRITE	OIL & GREASE	PAH (EPA 8270)	PCB	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	TOTAL SUSPENDED SOLIDS	VOC DW (EPA 524.2)	VOC (EPA 8260) aVOC	8-RCRA METALS
												X	
													X
													X
													X
													X
													X
													X
													X
											X		
											X		
													X

Other Analysis

Dissolved Chromium	Dissolved Iron	Dissolved Manganese	PID/FID
X	X	X	
X	X	X	
X	X	X	
X	X	X	
X	X	X	
X	X	X	
X	X	X	
X	X	X	

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge etc.)

Use P.O.# 2020-1492

Sample Integrity - To be completed by receiving lab.
Method of Shipment: client
Temp. of Temp. Blank ____ °C On Ice: X
Cooler seal intact upon receipt: X Yes ____ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
Wayne Fassbender	07:30	7/2/20			

Received in Laboratory By: [signature] Time: 9:30 Date: 7/2/20

CHAIN OF 'STODY RECORD

Synergy Environmental Lab, Inc.

1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • FAX 920-733-0631

Chain # Nº 350 7

Page 2 of 2

Sample Handling Request
Rush Analysis Date Required
(Rushes accepted only with prior authorization)
X Normal Turn Around

Lab I.D. #

Account No. : | Quote No.:

Project #: 6486

Sampler: (signature) W. Fassbender

Project (Name / Location): Albany Chem Site

Reports To: W. Fassbender	Invoice To: Same
Company Enviroforensics	Company
Address Waukesha, WI	Address
City State Zip	City State Zip
Phone 414-982-3988	Phone
FAX	FAX

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Comp	Grab	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation
503814 K	6486-MW19AR	7/1/20	11:35		X	Y	1	GW	HNO_3
L	6486-MW5	11	17:20		X	Y	1	11	11
M	6486-MW5A	11	17:28		X	Y	1	11	11
N	6486-MW2	11	17:40		X	Y	1	11	11
O	6486-MW3	7/2/20	07:25		X	Y	1	11	11
P	6486-MW3A	11	07:35		X	Y	1	11	11
Q	6486-MW31A	11	08:30		X	~~Y~~N	6	11	11
R	6486-MW31	11	08:45		X	Y	1	11	11
S	6486-MW31	11	08:45		X	N	3	11	HCL

Analysis Requested | **Other Analysis**

DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	LEAD	NITRATE/NITRITE	OIL & GREASE	PAH (EPA 8270)	PCB	PVOC (EPA 8021)	PVOC – NAPHTHALENE	SULFATE	TOTAL SUSPENDED SOLIDS	VOC DW (EPA 524.2)	VOC (EPA 8260) CVOC	8-RCRA METALS	Dissolved Chromium	Dissolved Iron	Dissolved Manganese	PID/FID
												X					

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge etc.)

Sample 6486 MW-31A was very turbid and clogged the filter immediately, so this sample will be total unfiltered metals

Sample Integrity - To be completed by receiving lab.
Method of Shipment: Client
Temp. of Temp. Blank ___ °C On Ice: X
Cooler seal intact upon receipt: X Yes ___ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
Wayne Fassbender	09:30	7/2/20			

Received in Laboratory By: Nicki Time: 9:30 Date: 7/2/20

Wisconsin State Laboratory of Hygiene
UNIVERSITY OF WISCONSIN-MADISON

Wisconsin State Laboratory of Hygiene
2601 Agriculture Drive, PO Box 7996
Madison, WI 53707-7996
(800)442-4618 - FAX (608)224-6213
http://www.slh.wisc.edu

Laboratory Report

Environmental Health Division

D.F. Kurtycz, M.D., Medical Director - Prof. James J. Schauer, Ph.D., Director

WSLH Sample: 512553001

Report To:

WAYNE FASSENBENDER
ENVIROFORENSICS LLC
N16 W23390 STONERIDGE DR STE
WAUKESHA, WI 53188

Invoice To:

WAYNE FASSENBENDER
ENVIROFORENSICS LLC
N16 W23390 STONERIDGE DR STE
WAUKESHA, WI 53188

Customer ID: 355417

Field #: 6486-MW20R
Project No:
Collection End: 6/30/2020 5:30:00 PM

Collection Start:
Collected By: W. FASSBENDER
Date Received: 7/2/2020
Date Reported: 9/18/2020
Sample Reason:

ID#: NA
Sample Location: ALBANY CHROME SITE
Sample Description: GROUNDWATER - DISPOSABLE BOILER + POLYMETHANE ROPE
Sample Type: MW-MONITORING WELL
Waterbody:
Point or Outfall:
Sample Depth:
Program Code:
Region Code:
County:

PFAS in Water

Analyte	Analysis Method	Result	Units	LOD	LOQ
Prep Date: 07/21/20 09:00	Analysis Date: 08/11/20 08:59				
Comments:					
Due to high sample turbidity, approximately half of sample volume extracted. Results adjusted accordingly. PFBS, PFHpA, DONA, and PFPeA not reported due to IS peak not meeting minimum 10:1 signal-to-noise ratio requirement.					
4:2 FTSA (757124-72-4)	Modified ISO 21675	3.34	ng/L	0.824	1.81
Interference					
PFHxA (307-24-4)	Modified ISO 21675	25.1	ng/L	0.765	1.81
Interference					
The internal standard QC limit is exceeded.					
PFPeS (2706-91-4)	Modified ISO 21675	<0.495	ng/L	0.495	0.723
Interference					
HFPO-DA (13252-13-6)	Modified ISO 21675	3.25	ng/L	0.964	1.81
The internal standard QC limit is exceeded.					
PFHxS (355-46-4)	Modified ISO 21675	1.95	ng/L	0.748	1.81
Interference					
Transition ion ratio failure.					
6:2 FTSA (27619-97-2)	Modified ISO 21675	<0.935	ng/L	0.935	1.81

Wisconsin State Laboratory of Hygiene
2601 Agriculture Drive, PO Box 7996
Madison, WI 53707-7996
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http://www.slh.wisc.edu

Laboratory Report

Environmental Health Division

D.F. Kurtycz, M.D., Medical Director - Prof. James J. Schauer, Ph.D., Director

WSLH Sample: 512553001

PFAS in Water

Analyte	Analysis Method	Result	Units	LOD	LOQ
Prep Date: 07/21/20 09:00	Analysis Date: 08/11/20 08:59				
PFOA (335-67-1)	Modified ISO 21675	17.1	ng/L	0.839	1.81
Interference					
PFHpS (375-92-8)	Modified ISO 21675	<0.730	ng/L	0.730	1.81
PFOS (1763-23-1)	Modified ISO 21675	4.03	ng/L	0.620	0.723
PFNA (375-95-1)	Modified ISO 21675	<0.788	ng/L	0.788	1.81
Interference					
9Cl-PF3ONS (756426-58-1)	Modified ISO 21675	<0.767	ng/L	0.767	1.81
8:2 FTSA (39108-34-4)	Modified ISO 21675	<0.815	ng/L	0.815	1.81
PFDA (335-76-2)	Modified ISO 21675	<0.718	ng/L	0.718	1.81
PFNS (68259-12-1)	Modified ISO 21675	<0.913	ng/L	0.913	1.81
N-MeFOSAA (2355-31-9)	Modified ISO 21675	<0.980	ng/L	0.980	1.81
N-EtFOSAA (2991-50-6)	Modified ISO 21675	<0.783	ng/L	0.783	1.81
FOSA (754-91-6)	Modified ISO 21675	<7.43	ng/L	7.43	9.04
PFUnA (2058-94-8)	Modified ISO 21675	<0.743	ng/L	0.743	1.81
PFDS (335-77-3)	Modified ISO 21675	<0.832	ng/L	0.832	1.81
11Cl-PF3OUdS (763051-92-9)	Modified ISO 21675	<0.720	ng/L	0.720	1.81
PFDoA (307-55-1)	Modified ISO 21675	<0.701	ng/L	0.701	1.81
10:2 FTSA (120226-60-0)	Modified ISO 21675	<0.792	ng/L	0.792	1.81
PFDoS (79780-39-5)	Modified ISO 21675	<0.945	ng/L	0.945	1.81
PFTrDA (72629-94-8)	Modified ISO 21675	<0.732	ng/L	0.732	1.81
N-MeFOSA (31506-32-8)	Modified ISO 21675	<1.47	ng/L	1.47	1.81
N-MeFOSE (24448-09-7)	Modified ISO 21675	<0.739	ng/L	0.739	1.81
The internal standard QC limit is exceeded.					
The Laboratory Control Spike (LCS) does not meet the upper QC limit.					
N-EtFOSA (4151-50-2)	Modified ISO 21675	<1.20	ng/L	1.20	1.81
N-EtFOSE (1691-99-2)	Modified ISO 21675	<0.754	ng/L	0.754	1.81
The internal standard QC limit is exceeded.					
The Laboratory Control Spike (LCS) does not meet the upper QC limit.					
PFTeDA (376-06-7)	Modified ISO 21675	<0.647	ng/L	0.647	0.723

Wisconsin State Laboratory of Hygiene
2601 Agriculture Drive, PO Box 7996
Madison, WI 53707-7996
(800)442-4618 - FAX (608)224-6213
http://www.slh.wisc.edu

Laboratory Report

Environmental Health Division

D.F. Kurtycz, M.D., Medical Director - Prof. James J. Schauer, Ph.D., Director

WSLH Sample: 512553001

PFAS in Water

Analyte	Analysis Method	Result	Units	LOD	LOQ
Prep Date: 07/21/20 09:00	Analysis Date: 08/11/20 08:59				
The internal standard QC limit is exceeded.					
Prep Date: 07/21/20 09:00	Analysis Date: 09/11/20 11:33				
Comments: PFPeA, PFBS, PFHpA, and DONA not reported due to IS peak not meeting minimum 10:1 signal-to-noise ratio requirement.					
PFBA (375-22-4)	Modified ISO 21675	98.9	ng/L	36.2	72.3
Interference					
Sample diluted by a factor of 10 due to internal standard interference. Results are approximate.					

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Madison, WI 53707-7996
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Laboratory Report

Environmental Health Division

D.F. Kurtycz, M.D., Medical Director - Prof. James J. Schauer, Ph.D., Director

WSLH Sample: 512553001

WDNR LAB ID:113133790 NELAP LAB ID:2091 EPA LAB ID:WI00007, WI00008 WI DATCP ID:105-415

List of Abbreviations:

LOD = Level of detection
LOQ = Level of quantification
ND = None detected. Results are less than the LOD
F next to result = Result is between LOD and LOQ
Z next to result = Result is between 0 (zero) and LOD
if LOD=LOQ, Limits were not statistically derived

Test results for NELAP accredited tests are certified to meet the requirements of the NELAC standards. For a list of accredited analytes
see http://www.slh.wisc.edu/about/compliance/nelac-laboratory-accreditation
Results, LOD and LOQ values have been adjusted for analytical dilutions and percent moisture where applicable.
Results relate only to the items tested.

The water microbiology unit analyzes samples as received and not all samples are tested for preservation before analysis is performed.

Responsible Party

Inorganic Chemistry: Graham Anderson, Supervisor 608-224-6281
Metals: Graham Anderson, Supervisor 608-224-6281
Organics: Erin Mani, Supervisor 608-224-6269
Environmental Toxicology: Dawn Perkins, Supervisor 608-224-6230
Water Microbiology: Martin Collins, Supervisor 608-224-6239
Radiochemistry: David Webb, Division Director 608-224-6227

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Madison, WI 53707-7996
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http://www.slh.wisc.edu

Laboratory Report

Environmental Health Division

D.F. Kurtycz, M.D., Medical Director - Prof. James J. Schauer, Ph.D., Director

WSLH Sample: 512553002

Report To:

WAYNE FASSENBENDER
ENVIROFORENSICS LLC
N16 W23390 STONERIDGE DR STE
WAUKESHA, WI 53188

Invoice To:

WAYNE FASSENBENDER
ENVIROFORENSICS LLC
N16 W23390 STONERIDGE DR STE
WAUKESHA, WI 53188

Customer ID: 355417

Field #: 6486-MW19R
Project No:
Collection End: 6/30/2020

Collection Start:
Collected By: W. FASSBENDER
Date Received: 7/2/2020
Date Reported: 9/18/2020
Sample Reason:

ID#:
Sample Location:
Sample Description: GROUNDWATER - DISPOSABLE BOILER + POLYMETHANE ROPE
Sample Type: MW-MONITORING WELL
Waterbody:
Point or Outfall:
Sample Depth:
Program Code:
Region Code:
County:

PFAS in Water

Analyte	Analysis Method	Result	Units	LOD	LOQ
Prep Date: 07/21/20 09:00	Analysis Date: 08/11/20 09:42				
Comments:					
Due to high turbidity, approximately half of sample volume extracted. Results adjusted accordingly.					
PFPeA (2706-90-3)	Modified ISO 21675	31.3	ng/L	0.488	0.545
Interference					
4:2 FTSA (757124-72-4)	Modified ISO 21675	<0.622	ng/L	0.622	1.36
PFHxA (307-24-4)	Modified ISO 21675	27.8	ng/L	0.577	1.36
PFPeS (2706-91-4)	Modified ISO 21675	2.18	ng/L	0.373	0.545
Interference					
Transition ion ratio failure.					
HFPO-DA (13252-13-6)	Modified ISO 21675	<0.726	ng/L	0.726	1.36
PFHpA (375-85-9)	Modified ISO 21675	26.7	ng/L	0.649	1.36
PFHxS (355-46-4)	Modified ISO 21675	5.59	ng/L	0.564	1.36
DONA (919005-14-4)	Modified ISO 21675	<0.579	ng/L	0.579	1.36
6:2 FTSA (27619-97-2)	Modified ISO 21675	<0.705	ng/L	0.705	1.36
PFOA (335-67-1)	Modified ISO 21675	43.8	ng/L	0.632	1.36
PFHpS (375-92-8)	Modified ISO 21675	0.788F	ng/L	0.551	1.36

Wisconsin State Laboratory of Hygiene
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Madison, WI 53707-7996
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Laboratory Report

Environmental Health Division

D.F. Kurtycz, M.D., Medical Director - Prof. James J. Schauer, Ph.D., Director

WSLH Sample: 512553002

PFAS in Water

Analyte	Analysis Method	Result	Units	LOD	LOQ
Prep Date: 07/21/20 09:00	Analysis Date: 08/11/20 09:42				
PFOS (1763-23-1)	Modified ISO 21675	8.08	ng/L	0.468	0.545
PFNA (375-95-1)	Modified ISO 21675	4.36	ng/L	0.594	1.36
9Cl-PF3ONS (756426-58-1)	Modified ISO 21675	<0.578	ng/L	0.578	1.36
8:2 FTSA (39108-34-4)	Modified ISO 21675	<0.615	ng/L	0.615	1.36
PFDA (335-76-2)	Modified ISO 21675	0.602F	ng/L	0.541	1.36
PFNS (68259-12-1)	Modified ISO 21675	<0.688	ng/L	0.688	1.36
N-MeFOSAA (2355-31-9)	Modified ISO 21675	<0.739	ng/L	0.739	1.36
N-EtFOSAA (2991-50-6)	Modified ISO 21675	<0.590	ng/L	0.590	1.36
FOSA (754-91-6)	Modified ISO 21675	<5.60	ng/L	5.60	6.81
PFUnA (2058-94-8)	Modified ISO 21675	<0.560	ng/L	0.560	1.36
PFDS (335-77-3)	Modified ISO 21675	<0.627	ng/L	0.627	1.36
11Cl-PF3OUdS (763051-92-9)	Modified ISO 21675	<0.542	ng/L	0.542	1.36
PFDoA (307-55-1)	Modified ISO 21675	<0.529	ng/L	0.529	1.36
10:2 FTSA (120226-60-0)	Modified ISO 21675	<0.597	ng/L	0.597	1.36
PFDoS (79780-39-5)	Modified ISO 21675	<0.713	ng/L	0.713	1.36
PFTrDA (72629-94-8)	Modified ISO 21675	<0.552	ng/L	0.552	1.36
N-MeFOSA (31506-32-8)	Modified ISO 21675	<1.11	ng/L	1.11	1.36
N-MeFOSE (24448-09-7)	Modified ISO 21675	<0.557	ng/L	0.557	1.36
The internal standard QC limit is exceeded.					
The Laboratory Control Spike (LCS) does not meet the upper QC limit.					
N-EtFOSA (4151-50-2)	Modified ISO 21675	<0.906	ng/L	0.906	1.36
N-EtFOSE (1691-99-2)	Modified ISO 21675	<0.568	ng/L	0.568	1.36
The internal standard QC limit is exceeded.					
The Laboratory Control Spike (LCS) does not meet the upper QC limit.					
PFTeDA (376-06-7)	Modified ISO 21675	<0.488	ng/L	0.488	0.545
Prep Date: 07/21/20 09:00	Analysis Date: 09/11/20 11:33				
PFBA (375-22-4)	Modified ISO 21675	799	ng/L	27.3	54.5
PFBS (375-73-5)	Modified ISO 21675	324	ng/L	6.04	13.6

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Laboratory Report

Environmental Health Division

D.F. Kurtycz, M.D., Medical Director - Prof. James J. Schauer, Ph.D., Director

WSLH Sample: 512553002

WDNR LAB ID:113133790 NELAP LAB ID:2091 EPA LAB ID:WI00007, WI00008 WI DATCP ID:105-415

List of Abbreviations:

LOD = Level of detection
LOQ = Level of quantification
ND = None detected. Results are less than the LOD
F next to result = Result is between LOD and LOQ
Z next to result = Result is between 0 (zero) and LOD
if LOD=LOQ, Limits were not statistically derived

Test results for NELAP accredited tests are certified to meet the requirements of the NELAC standards. For a list of accredited analytes
see http://www.slh.wisc.edu/about/compliance/nelac-laboratory-accreditation
Results, LOD and LOQ values have been adjusted for analytical dilutions and percent moisture where applicable.
Results relate only to the items tested.

The water microbiology unit analyzes samples as received and not all samples are tested for preservation before analysis is performed.

Responsible Party

Inorganic Chemistry: Graham Anderson, Supervisor 608-224-6281
Metals: Graham Anderson, Supervisor 608-224-6281
Organics: Erin Mani, Supervisor 608-224-6269
Environmental Toxicology: Dawn Perkins, Supervisor 608-224-6230
Water Microbiology: Martin Collins, Supervisor 608-224-6239
Radiochemistry: David Webb, Division Director 608-224-6227

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Laboratory Report

Environmental Health Division

D.F. Kurtycz, M.D., Medical Director - Prof. James J. Schauer, Ph.D., Director

WSLH Sample: 512553003

Report To:

WAYNE FASSENBENDER
ENVIROFORENSICS LLC
N16 W23390 STONERIDGE DR STE
WAUKESHA, WI 53188

Invoice To:

WAYNE FASSENBENDER
ENVIROFORENSICS LLC
N16 W23390 STONERIDGE DR STE
WAUKESHA, WI 53188

Customer ID: 355417

Field #: 6486-MW28R
Project No:
Collection End: 6/30/2020 4:48:00 PM

Collection Start:
Collected By: W. FASSBENDER
Date Received: 7/2/2020
Date Reported: 9/18/2020
Sample Reason:

ID#: NA
Sample Location: NA
Sample Description: GROUNDWATER - DISPOSABLE BOILER + POLYMETHANE ROPE
Sample Type: MW-MONITORING WELL
Waterbody:
Point or Outfall:
Sample Depth:
Program Code:
Region Code:
County:

PFAS in Water

Analyte	Analysis Method	Result	Units	LOD	LOQ
Prep Date: 07/21/20 09:00	Analysis Date: 08/11/20 10:10				
Comments:					
Due to high turbidity, approximately half of sample volume extracted. Results adjusted accordingly.					
PFBA (375-22-4)	Modified ISO 21675	575	ng/L	4.23	8.46
Compound detected in field reagent blank (FRB).					
Interference					
PFPeA (2706-90-3)	Modified ISO 21675	13.6	ng/L	0.757	0.846
Interference					
PFBS (375-73-5)	Modified ISO 21675	27.1	ng/L	0.936	2.11
4:2 FTSA (757124-72-4)	Modified ISO 21675	<0.964	ng/L	0.964	2.11
Interference					
PFHxA (307-24-4)	Modified ISO 21675	15.3	ng/L	0.894	2.11
PFPeS (2706-91-4)	Modified ISO 21675	1.93	ng/L	0.579	0.846
Interference					
HFPO-DA (13252-13-6)	Modified ISO 21675	<1.13	ng/L	1.13	2.11
PFHpA (375-85-9)	Modified ISO 21675	13.3	ng/L	1.01	2.11
PFHxS (355-46-4)	Modified ISO 21675	3.23	ng/L	0.875	2.11

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Laboratory Report

Environmental Health Division

D.F. Kurtycz, M.D., Medical Director - Prof. James J. Schauer, Ph.D., Director

WSLH Sample: 512553003

PFAS in Water

Analyte	Analysis Method	Result	Units	LOD	LOQ
Prep Date: 07/21/20 09:00	Analysis Date: 08/11/20 10:10				
Interference					
DONA (919005-14-4)	Modified ISO 21675	<0.898	ng/L	0.898	2.11
6:2 FTSA (27619-97-2)	Modified ISO 21675	<1.09	ng/L	1.09	2.11
Interference					
PFOA (335-67-1)	Modified ISO 21675	30.2	ng/L	0.981	2.11
PFHpS (375-92-8)	Modified ISO 21675	<0.854	ng/L	0.854	2.11
PFOS (1763-23-1)	Modified ISO 21675	16.2	ng/L	0.725	0.846
PFNA (375-95-1)	Modified ISO 21675	6.70	ng/L	0.922	2.11
9Cl-PF3ONS (756426-58-1)	Modified ISO 21675	<0.896	ng/L	0.896	2.11
8:2 FTSA (39108-34-4)	Modified ISO 21675	<0.953	ng/L	0.953	2.11
PFDA (335-76-2)	Modified ISO 21675	<0.839	ng/L	0.839	2.11
PFNS (68259-12-1)	Modified ISO 21675	<1.07	ng/L	1.07	2.11
N-MeFOSAA (2355-31-9)	Modified ISO 21675	<1.15	ng/L	1.15	2.11
N-EtFOSAA (2991-50-6)	Modified ISO 21675	<0.915	ng/L	0.915	2.11
FOSA (754-91-6)	Modified ISO 21675	<8.69	ng/L	8.69	10.6
PFUnA (2058-94-8)	Modified ISO 21675	<0.869	ng/L	0.869	2.11
PFDS (335-77-3)	Modified ISO 21675	<0.972	ng/L	0.972	2.11
11Cl-PF3OUdS (763051-92-9)	Modified ISO 21675	<0.841	ng/L	0.841	2.11
PFDoA (307-55-1)	Modified ISO 21675	<0.820	ng/L	0.820	2.11
10:2 FTSA (120226-60-0)	Modified ISO 21675	<0.926	ng/L	0.926	2.11
PFDoS (79780-39-5)	Modified ISO 21675	<1.11	ng/L	1.11	2.11
PFTrDA (72629-94-8)	Modified ISO 21675	<0.856	ng/L	0.856	2.11
N-MeFOSA (31506-32-8)	Modified ISO 21675	<1.72	ng/L	1.72	2.11
N-MeFOSE (24448-09-7)	Modified ISO 21675	<0.865	ng/L	0.865	2.11
The internal standard QC limit is exceeded.					
The Laboratory Control Spike (LCS) does not meet the upper QC limit.					
N-EtFOSA (4151-50-2)	Modified ISO 21675	<1.41	ng/L	1.41	2.11
N-EtFOSE (1691-99-2)	Modified ISO 21675	<0.881	ng/L	0.881	2.11
The internal standard QC limit is exceeded.					

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Laboratory Report

Environmental Health Division

D.F. Kurtycz, M.D., Medical Director - Prof. James J. Schauer, Ph.D., Director

WSLH Sample: 512553003

PFAS in Water

Analyte	Analysis Method	Result	Units	LOD	LOQ
Prep Date: 07/21/20 09:00	Analysis Date: 08/11/20 10:10				
The Laboratory Control Spike (LCS) does not meet the upper QC limit.					
PFTeDA (376-06-7)	Modified ISO 21675	<0.757	ng/L	0.757	0.846

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Laboratory Report

Environmental Health Division

D.F. Kurtycz, M.D., Medical Director - Prof. James J. Schauer, Ph.D., Director

WSLH Sample: 512553003

WDNR LAB ID:113133790 NELAP LAB ID:2091 EPA LAB ID:WI00007, WI00008 WI DATCP ID:105-415

List of Abbreviations:

LOD = Level of detection
LOQ = Level of quantification
ND = None detected. Results are less than the LOD
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if LOD=LOQ, Limits were not statistically derived

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Water Microbiology: Martin Collins, Supervisor 608-224-6239
Radiochemistry: David Webb, Division Director 608-224-6227

Quality Control Review

Batch	LCMS/1603	**HBN**	194737
Rule	PFAS-W	**Status**	WP
Create Date	9/11/2020	**Analyst**	ARS1

2 247140-MB for HBN 190193 [LCMS/1551]

Type	MB	**Matrix**	Water	**Collected**		**% Moisture**	
Client	QC ACCOUNT	**WO**		**Work ID**		**Original HSN**	

Analytical Information

Procedure	PFAS-W	**Instru**	LC E	**Run Date**	8/11/2020 08:45	**Dilution**	1
Method	Modified ISO 21675	**Col ID**		**Hold Date**		**Analyst**	ARS1
Schedule	7784482	**File**	\LCMS1603.csv.working			**CC**	OK

Prep Information

Procedure	PFAS-W-P	**Batch**	LCMS/1551	**Prep Date**	7/21/2020 09:00	**Dilution**	1
Method	Modified ISO 21675	**HBN**	190193	**Hold Date**	8/19/2020 23:59	**Analyst**	ARS1
Schedule	7784481	**Instru**	OCVac2			**CC**	OK

Initial Volume	250 mL	Default	250 mL
Final Volume	1 mL	Default	1 mL

Analyte	Posted Result		Result	MDL	RDL	
PFAS in Water		n/a				n/a
PFBA (375-22-4)	1.93	ng/L	ND	2.00	2.00	ng/L
PFPeA (2706-90-3)	.123	ng/L	ND	0.358	0.358	ng/L
PFBS (375-73-5)	0	ng/L	ND	0.443	0.443	ng/L
4:2 FTSA (757124-72-4)	0	ng/L	ND	0.456	0.456	ng/L
PFHxA (307-24-4)	.0569	ng/L	ND	0.423	0.423	ng/L
PFPeS (2706-91-4)	0	ng/L	ND	0.274	0.274	ng/L
HFPO-DA (13252-13-6)	0	ng/L	ND	0.533	0.533	ng/L
PFHpA (375-85-9)	0	ng/L	ND	0.476	0.476	ng/L
PFHxS (355-46-4)	0	ng/L	ND	0.414	0.414	ng/L
DONA (919005-14-4)	0	ng/L	ND	0.425	0.425	ng/L
6:2 FTSA (27619-97-2)	0	ng/L	ND	0.517	0.517	ng/L
PFOA (335-67-1)	0	ng/L	ND	0.464	0.464	ng/L
PFHpS (375-92-8)	0	ng/L	ND	0.404	0.404	ng/L
PFOS (1763-23-1)	.0417	ng/L	ND	0.343	0.343	ng/L
PFNA (375-95-1)	0	ng/L	ND	0.436	0.436	ng/L
9Cl-PF3ONS (756426-58-1)	0	ng/L	ND	0.424	0.424	ng/L
8:2 FTSA (39108-34-4)	0	ng/L	ND	0.451	0.451	ng/L
PFDA (335-76-2)	0	ng/L	ND	0.397	0.397	ng/L
PFNS (68259-12-1)	0	ng/L	ND	0.505	0.505	ng/L
N-MeFOSAA (2355-31-9)	0	ng/L	ND	0.542	0.542	ng/L
N-EtFOSAA (2991-50-6)	0	ng/L	ND	0.433	0.433	ng/L
FOSA (754-91-6)	1.46	ng/L	ND	4.11	4.11	ng/L
PFUnA (2058-94-8)	0	ng/L	ND	0.411	0.411	ng/L
PFDS (335-77-3)	0	ng/L	ND	0.460	0.460	ng/L

Quality Control Review

Batch	LCMS/1603	**HBN**	194737
Rule	PFAS-W	**Status**	WP
Create Date	9/11/2020	**Analyst**	ARS1

Wisconsin State Laboratory of Hygiene
UNIVERSITY OF WISCONSIN–MADISON

2 247140-MB for HBN 190193 [LCMS/1551]

Analyte	Posted Result		Result	MDL	RDL	
11Cl-PF3OUdS (763051-92-9)	0	ng/L	ND	0.398	0.398	ng/L
PFDoA (307-55-1)	0	ng/L	ND	0.388	0.388	ng/L
10:2 FTSA (120226-60-0)	0	ng/L	ND	0.438	0.438	ng/L
PFDoS (79780-39-5)	0	ng/L	ND	0.523	0.523	ng/L
PFTrDA (72629-94-8)	0	ng/L	ND	0.405	0.405	ng/L
N-MeFOSA (31506-32-8)	0	ng/L	ND	0.812	0.812	ng/L
N-MeFOSE (24448-09-7)	0	ng/L	ND	0.409	0.409	ng/L
N-EtFOSA (4151-50-2)	0	ng/L	ND	0.665	0.665	ng/L
N-EtFOSE (1691-99-2)	0	ng/L	ND	0.417	0.417	ng/L
PFTeDA (376-06-7)	0	ng/L	ND	0.358	0.358	ng/L
PFHxDA (67905-19-5)	0	ng/L				
PFODA (16517-11-6)	0	ng/L				

Quality Control Review

Wisconsin State Laboratory of Hygiene
UNIVERSITY OF WISCONSIN-MADISON

Batch	LCMS/1603	**HBN**	194737
Rule	PFAS-W	**Status**	WP
Create Date	9/11/2020	**Analyst**	ARS1

5 247142-FRB for HBN 190193 [LCMS/1551]

Type	FRB	**Matrix**	Water	**Collected**		**% Moisture**	
Client	QC ACCOUNT	**WO**		**Work ID**		**Original HSN**	

Analytical Information

Procedure	PFAS-W	**Instru**	LC E	**Run Date**	8/11/2020 09:27	**Dilution**	1
Method	Modified ISO 21675	**Col ID**		**Hold Date**		**Analyst**	ARS1
Schedule	7784486	**File**	\LCMS1603.csv.working			**CC**	OK

Prep Information

Procedure	PFAS-W-P	**Batch**	LCMS/1551	**Prep Date**	7/21/2020 09:00	**Dilution**	1
Method	Modified ISO 21675	**HBN**	190193	**Hold Date**	8/19/2020 23:59	**Analyst**	ARS1
Schedule	7784485	**Instru**	OCVac2			**CC**	OK

Initial Volume	242.54 mL	Default	250 mL	
Final Volume	1 mL	Default	1 mL	

Analyte	Posted Result		Result	MDL	RDL	
PFAS in Water		n/a				n/a
PFBA (375-22-4)	0	ng/L	ND	2.06	2.06	ng/L
PFPeA (2706-90-3)	.116	ng/L	ND	0.369	0.369	ng/L
PFBS (375-73-5)	0	ng/L	ND	0.457	0.457	ng/L
4:2 FTSA (757124-72-4)	0	ng/L	ND	0.470	0.470	ng/L
PFHxA (307-24-4)	.0615	ng/L	ND	0.436	0.436	ng/L
PFPeS (2706-91-4)	0	ng/L	ND	0.282	0.282	ng/L
HFPO-DA (13252-13-6)	0	ng/L	ND	0.549	0.549	ng/L
PFHpA (375-85-9)	0	ng/L	ND	0.491	0.491	ng/L
PFHxS (355-46-4)	0	ng/L	ND	0.427	0.427	ng/L
DONA (919005-14-4)	0	ng/L	ND	0.438	0.438	ng/L
6:2 FTSA (27619-97-2)	0	ng/L	ND	0.533	0.533	ng/L
PFOA (335-67-1)	0	ng/L	ND	0.478	0.478	ng/L
PFHpS (375-92-8)	0	ng/L	ND	0.416	0.416	ng/L
PFOS (1763-23-1)	.0429	ng/L	ND	0.354	0.354	ng/L
PFNA (375-95-1)	0	ng/L	ND	0.449	0.449	ng/L
9Cl-PF3ONS (756426-58-1)	0	ng/L	ND	0.437	0.437	ng/L
8:2 FTSA (39108-34-4)	0	ng/L	ND	0.465	0.465	ng/L
PFDA (335-76-2)	0	ng/L	ND	0.409	0.409	ng/L
PFNS (68259-12-1)	0	ng/L	ND	0.521	0.521	ng/L
N-MeFOSAA (2355-31-9)	0	ng/L	ND	0.559	0.559	ng/L
N-EtFOSAA (2991-50-6)	0	ng/L	ND	0.446	0.446	ng/L
FOSA (754-91-6)	1.38	ng/L	ND	4.24	4.24	ng/L
PFUnA (2058-94-8)	0	ng/L	ND	0.424	0.424	ng/L
PFDS (335-77-3)	0	ng/L	ND	0.474	0.474	ng/L

Quality Control Review

Batch	LCMS/1603	**HBN**	194737
Rule	PFAS-W	**Status**	WP
Create Date	9/11/2020	**Analyst**	ARS1

5 247142-FRB for HBN 190193 [LCMS/1551]

Analyte	Posted Result		Result	MDL	RDL	
11Cl-PF3OUdS (763051-92-9)	0	ng/L	ND	0.410	0.410	ng/L
PFDoA (307-55-1)	0	ng/L	ND	0.400	0.400	ng/L
10:2 FTSA (120226-60-0)	0	ng/L	ND	0.451	0.451	ng/L
PFDoS (79780-39-5)	0	ng/L	ND	0.539	0.539	ng/L
PFTrDA (72629-94-8)	0	ng/L	ND	0.417	0.417	ng/L
N-MeFOSA (31506-32-8)	0	ng/L	ND	0.837	0.837	ng/L
N-MeFOSE (24448-09-7)	0	ng/L	ND	0.422	0.422	ng/L
N-EtFOSA (4151-50-2)	0	ng/L	ND	0.685	0.685	ng/L
N-EtFOSE (1691-99-2)	0	ng/L	ND	0.430	0.430	ng/L
PFTeDA (376-06-7)	0	ng/L	ND	0.369	0.369	ng/L
PFHxDA (67905-19-5)	0	ng/L				
PFODA (16517-11-6)	0	ng/L				

Quality Control Review

Batch	LCMS/1603	**HBN**	194737
Rule	PFAS-W	**Status**	WP
Create Date	9/11/2020	**Analyst**	ARS1

7 247143-FRB for HBN 190193 [LCMS/1551]

Type	FRB	**Matrix**	Water	**Collected**		**% Moisture**	
Client	QC ACCOUNT	**WO**		**Work ID**		**Original HSN**	

Analytical Information

Procedure	PFAS-W	**Instru**	LC E	**Run Date**	8/11/2020 09:56	**Dilution**	1
Method	Modified ISO 21675	**Col ID**		**Hold Date**		**Analyst**	ARS1
Schedule	7784488	**File**	\LCMS1603.csv.working			**CC**	OK

Prep Information

Procedure	PFAS-W-P	**Batch**	LCMS/1551	**Prep Date**	7/21/2020 09:00	**Dilution**	1
Method	Modified ISO 21675	**HBN**	190193	**Hold Date**	8/19/2020 23:59	**Analyst**	ARS1
Schedule	7784487	**Instru**	OCVac2			**CC**	OK

Initial Volume	243.2 mL	Default	250 mL	
Final Volume	1 mL	Default	1 mL	

Analyte	Posted Result		Result	MDL	RDL	
PFAS in Water		n/a				n/a
PFBA (375-22-4)	.762	ng/L	ND	2.06	2.06	ng/L
PFPeA (2706-90-3)	.22	ng/L	ND	0.368	0.368	ng/L
PFBS (375-73-5)	.104	ng/L	ND	0.455	0.455	ng/L
4:2 FTSA (757124-72-4)	0	ng/L	ND	0.469	0.469	ng/L
PFHxA (307-24-4)	.039	ng/L	ND	0.435	0.435	ng/L
PFPeS (2706-91-4)	0	ng/L	ND	0.282	0.282	ng/L
HFPO-DA (13252-13-6)	0	ng/L	ND	0.548	0.548	ng/L
PFHpA (375-85-9)	0	ng/L	ND	0.489	0.489	ng/L
PFHxS (355-46-4)	0	ng/L	ND	0.426	0.426	ng/L
DONA (919005-14-4)	0	ng/L	ND	0.437	0.437	ng/L
6:2 FTSA (27619-97-2)	0	ng/L	ND	0.531	0.531	ng/L
PFOA (335-67-1)	.0457	ng/L	ND	0.477	0.477	ng/L
PFHpS (375-92-8)	0	ng/L	ND	0.415	0.415	ng/L
PFOS (1763-23-1)	.0847	ng/L	ND	0.353	0.353	ng/L
PFNA (375-95-1)	.0265	ng/L	ND	0.448	0.448	ng/L
9Cl-PF3ONS (756426-58-1)	0	ng/L	ND	0.436	0.436	ng/L
8:2 FTSA (39108-34-4)	0	ng/L	ND	0.464	0.464	ng/L
PFDA (335-76-2)	0	ng/L	ND	0.408	0.408	ng/L
PFNS (68259-12-1)	0	ng/L	ND	0.519	0.519	ng/L
N-MeFOSAA (2355-31-9)	0	ng/L	ND	0.557	0.557	ng/L
N-EtFOSAA (2991-50-6)	0	ng/L	ND	0.445	0.445	ng/L
FOSA (754-91-6)	1.98	ng/L	ND	4.22	4.22	ng/L
PFUnA (2058-94-8)	0	ng/L	ND	0.422	0.422	ng/L
PFDS (335-77-3)	0	ng/L	ND	0.473	0.473	ng/L

Quality Control Review

Batch	LCMS/1603	**HBN**	194737
Rule	PFAS-W	**Status**	WP
Create Date	9/11/2020	**Analyst**	ARS1

7 247143-FRB for HBN 190193 [LCMS/1551]

Analyte	Posted Result		Result	MDL	RDL	
11Cl-PF3OUdS (763051-92-9)	0	ng/L	ND	0.409	0.409	ng/L
PFDoA (307-55-1)	0	ng/L	ND	0.399	0.399	ng/L
10:2 FTSA (120226-60-0)	0	ng/L	ND	0.450	0.450	ng/L
PFDoS (79780-39-5)	0	ng/L	ND	0.538	0.538	ng/L
PFTrDA (72629-94-8)	0	ng/L	ND	0.416	0.416	ng/L
N-MeFOSA (31506-32-8)	0	ng/L	ND	0.835	0.835	ng/L
N-MeFOSE (24448-09-7)	0	ng/L	ND	0.420	0.420	ng/L
N-EtFOSA (4151-50-2)	0	ng/L	ND	0.684	0.684	ng/L
N-EtFOSE (1691-99-2)	0	ng/L	ND	0.429	0.429	ng/L
PFTeDA (376-06-7)	0	ng/L	ND	0.368	0.368	ng/L
PFHxDA (67905-19-5)	0	ng/L				
PFODA (16517-11-6)	0	ng/L				

Quality Control Review

Batch	LCMS/1603	**HBN**	194737
Rule	PFAS-W	**Status**	WP
Create Date	9/11/2020	**Analyst**	ARS1

9 247144-FRB for HBN 190193 [LCMS/1551]

Type	FRB	**Matrix**	Water	**Collected**		**% Moisture**	
Client	QC ACCOUNT	**WO**		**Work ID**		**Original HSN**	

Analytical Information

Procedure	PFAS-W	**Instru**	LC E	**Run Date**	8/11/2020 10:24	**Dilution**	1
Method	Modified ISO 21675	**Col ID**		**Hold Date**		**Analyst**	ARS1
Schedule	7784490	**File**	\LCMS1603.csv.working			**CC**	OK

Prep Information

Procedure	PFAS-W-P	**Batch**	LCMS/1551	**Prep Date**	7/21/2020 09:00	**Dilution**	1
Method	Modified ISO 21675	**HBN**	190193	**Hold Date**	8/19/2020 23:59	**Analyst**	ARS1
Schedule	7784489	**Instru**	OCVac2			**CC**	OK

Initial Volume	252.44 mL	Default	250 mL	
Final Volume	1 mL	Default	1 mL	

Analyte	Posted Result		Result	MDL	RDL	
PFAS in Water		n/a				n/a
PFBA (375-22-4)	2.34	ng/L	2.32	1.98	1.98	ng/L**
PFPeA (2706-90-3)	.0889	ng/L	ND	0.355	0.355	ng/L
PFBS (375-73-5)	.054	ng/L	ND	0.439	0.439	ng/L
4:2 FTSA (757124-72-4)	0	ng/L	ND	0.452	0.452	ng/L
PFHxA (307-24-4)	.0253	ng/L	ND	0.419	0.419	ng/L
PFPeS (2706-91-4)	0	ng/L	ND	0.271	0.271	ng/L
HFPO-DA (13252-13-6)	0	ng/L	ND	0.528	0.528	ng/L
PFHpA (375-85-9)	0	ng/L	ND	0.471	0.471	ng/L
PFHxS (355-46-4)	0	ng/L	ND	0.410	0.410	ng/L
DONA (919005-14-4)	0	ng/L	ND	0.421	0.421	ng/L
6:2 FTSA (27619-97-2)	0	ng/L	ND	0.512	0.512	ng/L
PFOA (335-67-1)	0	ng/L	ND	0.460	0.460	ng/L
PFHpS (375-92-8)	0	ng/L	ND	0.400	0.400	ng/L
PFOS (1763-23-1)	.0363	ng/L	ND	0.340	0.340	ng/L
PFNA (375-95-1)	0	ng/L	ND	0.432	0.432	ng/L
9Cl-PF3ONS (756426-58-1)	0	ng/L	ND	0.420	0.420	ng/L
8:2 FTSA (39108-34-4)	0	ng/L	ND	0.447	0.447	ng/L
PFDA (335-76-2)	0	ng/L	ND	0.393	0.393	ng/L
PFNS (68259-12-1)	0	ng/L	ND	0.500	0.500	ng/L
N-MeFOSAA (2355-31-9)	0	ng/L	ND	0.537	0.537	ng/L
N-EtFOSAA (2991-50-6)	0	ng/L	ND	0.429	0.429	ng/L
FOSA (754-91-6)	1.39	ng/L	ND	4.07	4.07	ng/L
PFUnA (2058-94-8)	0	ng/L	ND	0.407	0.407	ng/L
PFDS (335-77-3)	0	ng/L	ND	0.456	0.456	ng/L

Quality Control Review

Batch	LCMS/1603	**HBN**	194737
Rule	PFAS-W	**Status**	WP
Create Date	9/11/2020	**Analyst**	ARS1

9 247144-FRB for HBN 190193 [LCMS/1551]

Analyte	Posted Result		Result	MDL	RDL	
11Cl-PF3OUdS (763051-92-9)	0	ng/L	ND	0.394	0.394	ng/L
PFDoA (307-55-1)	0	ng/L	ND	0.384	0.384	ng/L
10:2 FTSA (120226-60-0)	0	ng/L	ND	0.434	0.434	ng/L
PFDoS (79780-39-5)	0	ng/L	ND	0.518	0.518	ng/L
PFTrDA (72629-94-8)	0	ng/L	ND	0.401	0.401	ng/L
N-MeFOSA (31506-32-8)	0	ng/L	ND	0.804	0.804	ng/L
N-MeFOSE (24448-09-7)	0	ng/L	ND	0.405	0.405	ng/L
N-EtFOSA (4151-50-2)	0	ng/L	ND	0.659	0.659	ng/L
N-EtFOSE (1691-99-2)	0	ng/L	ND	0.413	0.413	ng/L
PFTeDA (376-06-7)	0	ng/L	ND	0.355	0.355	ng/L
PFHxDA (67905-19-5)	0	ng/L				
PFODA (16517-11-6)	0	ng/L				

** Indicates QC failure. For example, blank contamination or recoveries out of range.

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Mr. Wayne Fassbender
Enviroforensics
N16 W. 23390 Stone Ridge Dr
Suite G
Waukesha, WI 53188

July 14, 2020

EnvisionAir Project Number: 2020-359
Client Project Name: 6486

Dear Mr. Fassbender,

Please find the attached analytical report for the samples received July 7, 2020. 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,

Stanley A Hunnicutt

Project Manager
EnvisionAir, LLC

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Indianapolis, IN 46239
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Client Name: ENVIROFORENSICS

Project ID: 6486

Client Project Manager: WAYNE FASSBENDER

EnvisionAir Project Number: 2020-359

Sample Summary

Canister Pressure / Vacuum

Laboratory Sample Number:	Sample Description:	Matrix:	START Date Collected:	START Time Collected:	End Date Collected:	End Time Collected:	Date Received:	Time Received	Initial Field (in. Hg)	Final Field (in. Hg)	Lab Received (in. Hg)
20-1637	6486-HPV-1	A	7/1/20	13:35	7/1/20	14:05	7/7/20	14:40	-28	-4	-4
20-1638	6486-HPV-2	A	7/1/20	14:55	7/1/20	15:25	7/7/20	14:40	-30	-5	-5

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Client Name: ENVIROFORENSICS

Project ID: 6486

Client Project Manager: WAYBE FASSBENDER

EnvisionAir Project Number: 2020-359

Analytical Method: TO-15
Analytical Batch: 070820AIR

Client Sample ID: 6486-HPV-1
EnvisionAir Sample Number: 20-1637
Sample Matrix: AIR

Sample Collection START Date/Time: 7/1/20 13:35
Sample Collection END Date/Time: 7/1/20 14:05
Sample Received Date/Time: 7/7/20 14:40

Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
1,1-Dichloroethane	< 4.05	4.05	
cis-1,2-Dichloroethene	< 19.8	19.8	
Tetrachloroethene	< 3.19	3.19	
trans-1,2-Dichloroethene	< 39.6	39.6	
Trichloroethene	< 1.07	1.07	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	96%		
Analysis Date/Time:	7-10-20/09:59		
Analyst Initials	tjg		

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Client Name: ENVIROFORENSICS

Project ID: 6486

Client Project Manager: WAYBE FASSBENDER

EnvisionAir Project Number: 2020-359

Analytical Method: TO-15
Analytical Batch: 070820AIR

Client Sample ID: 6486-HPV-2
EnvisionAir Sample Number: 20-1638
Sample Matrix: AIR

Sample Collection START Date/Time: 7/1/20 14:55
Sample Collection END Date/Time: 7/1/20 15:25
Sample Received Date/Time: 7/7/20 14:40

Compounds	Sample Results ug/m³	Reporting Limit ug/m³	Flag
1,1-Dichloroethane	< 4.05	4.05	
cis-1,2-Dichloroethene	< 19.8	19.8	
Tetrachloroethene	< 3.19	3.19	
trans-1,2-Dichloroethene	< 39.6	39.6	
Trichloroethene	< 1.07	1.07	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	97%		
Analysis Date/Time:	7-10-20/11:19		
Analyst Initials	tjg		

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Analytical Report

TO-15 Quality Control Data

EnvisionAir Batch Number: 070820AIR

Method Blank (MB):	MB Results (ppbv)	Reporting Limit (ppbv)	Flags
1,1-Dichloroethane	< 1	1	
cis-1,2-Dichloroethene	< 5	5	
Tetrachloroethene	< 0.47	0.47	
trans-1,2-Dichloroethene	< 10	10	
Trichloroethene	< 0.2	0.2	
Vinyl Chloride	< 0.5	0.5	
4-bromofluorobenzene (surrogate)	108%		
Analysis Date/Time:	7-9-20/14:52		
Analyst Initials	tjg		

LCS/LCSD	LCS Results (ppbv)	LCSD Results (ppbv)	LCS/D Conc(ppbv)	LCS Rec.	LCSD Rec.	RPD	Flag
Vinyl Chloride	9.08	9.49	10	91%	95%	4.4%	
trans-1,2-Dichloroethene	9.11	9.76	10	91%	98%	6.9%	
1,1-Dichloroethane	9.88	9.63	10	99%	96%	2.6%	
cis-1,2-Dichloroethene	10.6	10.8	10	106%	108%	1.9%	
Trichloroethene	10.5	10.5	10	105%	105%	0.0%	
Tetrachloroethene	8.23	8.42	10	82%	84%	2.3%	
4-bromofluorobenzene (surrogate)	103%	97%					
Analysis Date/Time:	7-9-20/13:33	7-9-20/14:17					
Analyst Initials	tjg	tjg					

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Flag Number	Comments

EnvisionAir Proj#: 2020-359 Page 1 of 1

CHAIN OF CUSTODY RECORD

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

Client: EnviroForensics	P.O. Number: 2020-1490
Report Address: wfassbender@enviroforensics.com	Project Name or Number: 6486
Report To: W. Fassbender	Sampled by: B. Kappen
Phone: 262-290-4001	QA/QC Required: (circle if applicable) Level III Level IV
Invoice Address: accountspayable@enviroforensics.com	Reporting Units needed: (circle) ug/m³ mg/m³ PPBV PPMV
Desired TAT: (Please Circle One) 1 day 2 days 3 days Std (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)

ENVISIONAIR

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

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Canister Pressure / Vacuum

Air Sample ID	Media Type (see code above)	Coll. Date (Grab/Comp Start)	Coll. Time (Grab/Comp Start)	Coll. Date (Comp. End)	Coll. Time (Comp. End)					Canister Serial #	Flow Controller Serial #	Initial Field (in. Hg)	Final Field (in. Hg)	Lab Received (in. Hg)	EnvisionAir Sample Number
6486-HPV-1	6LC	7/1/20	1335	7/1/20	1405		X			4683	0025	-28	-4	-4	20-1637
6486-HPV-2	6LC	7/1/20	1455	7/1/20	1525		X			11074	0104	-30	-5	-5	20-1638

Comments: PCE; TCE; cis-1,2-DCE; trans-1,2-DCE; 1,1-DCA; vinyl chloride

Relinquished by:	Date	Time	Received by:	Date	Time
B. Kappen	7/6/20	1630	FedEx	7/6/20	1630
			Sean Munnicutt	7/7/20	1440