Moraine Environmental, Inc.
Design • Engineer • Construct

September 30, 2020

Proj. Ref. #5323

Colleen Landisch-Hansen
Village Administrator
Village of Thiensville
250 Elm Street
Thiensville, Wisconsin 53092

Andy Lafond
Director of Public Works
Village of Thiensville

RE: Data Evaluation Review Summary
Thiensville Highway Department Site
120 W Freistadt Road, Thiensville, WI
WDNR Open ERP Site #02-46-000366

Dear Colleen and Andy,

Moraine Environmental, Inc. (Moraine) has completed the activities discussed in our September 19, 2019 site data evaluation and proposed scope of work. The intent of additional investigative work was to primarily define the extent of polycyclic aromatic hydrocarbon (PAH) contamination in the direct contact soil (upper 4' of soil column) and to determine if previously identified soil contaminants were a source of groundwater PAH contamination.

Moraine supervised installation of seven (7) soil probes (SP-1 to SP-7) to four (4) feet below ground surface (bgs) in areas which required definition of PAH soil extents. Seven (7) small diameter wells were installed at previous boring locations (B1, B2, B3, B6, B14, B16, B28) where historic soil sample lab results indicated potential groundwater contamination may be present. The soil probing and small diameter well installations were completed on December 16, 2019, by our sub-contractor, Horizon Construction & Exploration. Moraine returned to the site on December 19, 2019 to collect groundwater samples from the new small diameter wells.

SOIL RESULTS

Soil probes SP-1 to SP-7 were each advanced to four (4) feet bgs with a sample from 2-4 feet from each soil probe submitted to Pace Analytical Laboratories in Green Bay, WI for PAH analysis. Sample locations are shown on the attached soil contamination figure.

PAH lab results from soil probes SP-1, SP-2, SP-3, and SP-5 define the extent of PAH contamination to the north of around B6 (SP-1), on the western perimeter north of B28 (SP-2 and SP-3) and also on the west near B16 (SP-5). Results from each of these four (4) samples were below DNR soil standards. Results from samples collected at SP-4, SP-6, and SP-7 indicated PAH's at levels yet above DNR direct contact standards. We assessed the cancer-causing PAH levels at SP-4, SP-6, and SP-7, and found each location and lab data failed the cPAH calculator, an indication that a cap will be required at these locations. The attached figure also shows the PAH extents which will require a cap at the time of case closure. Laboratory results are provided in the attached table.

SOIL SUMMARY & RECOMMENDATIONS

Review of both the table and attached figure indicates there are just a few areas where the extent of soil PAH direct contact contamination remains undefined, as indicated by the dashed blue line as shown on Figure B.2.a. Although these locations are outside the designated area which require a cap (except SP-7), there are still PAH analytes above standards which yet need to be defined. As such, Moraine recommends installation of 4-5 four-foot-deep probes with PAH soil analysis north of B18 and south of B15, B25, and SP-7.

GROUNDWATER RESULTS

Small diameter wells were constructed in seven (7) locations which had historic (samples collected from 2011 to 2013) soil sample results indicative of potential groundwater contamination. Five (5) of the seven (7) well samples were analyzed for PAHs. One well sample was analyzed for arsenic only and one well sample was analyzed for petroleum volatile organic compounds (PVOC).

Small diameter well SD/B1 was installed to assess arsenic groundwater contamination. Arsenic was detected at 1.4 µg/L in SD/B1, a preventive action limit (PAL) exceedance. SD/B3 groundwater was analyzed for PVOC resulting in no detections or detections below respective PALs.

SD/B2, SD/B6, SD/B14, SD/B16, and SD/B28 groundwater samples were each analyzed for PAHs, and each historic boring generally had soil results representative of the most highly contaminated PAH soil identified on the property from 2011-2013. PAH groundwater lab analysis (table attached), resulted in no detections or detections below standards in four (4) of the five (5) wells tested for PAH. Groundwater sample results from samples collected at SD/B28, the location of the most highly contaminated soil PAHs on the property, resulted in groundwater PAL exceedances only of benzo(a)pyrene (0.065 µg/L), benzo(b)fluoranthene (0.077 µg/L) , and chrysene (0.13 µg/L).

GROUNDWATER SUMMARY & RECOMMENDATIONS

Groundwater PAH results indicate the elevated levels of PAH in soil are not adversely affecting the shallow groundwater table as PAH levels exceed only PALs in SD/B28. This means the groundwater pathway is protected but one more round of PAH groundwater analysis with similar results would provide a solid case to the WDNR. We recommend one additional round of groundwater analysis for PAH and arsenic.

PROJECT SUMMARY

Installation of a few more probes with soil PAH sampling with one round of groundwater monitoring and we should have the PAH issue wrapped up as much as we can for now. The case we would be justifying to the WDNR would be to show that the existing cover material (mostly compacted gravel) in the yard is sufficient to protect the groundwater pathway, and hopefully also eliminate the need for some form of asphalt cap in the areas which failed the cPAH (carcinogenic PAH) calculator. Additionally, with respect to PAH soil RCLs, the WDNR has promulgated a plan to revise PAH RCLs which could become effective in 2021 which may also reduce or eliminate some of the current extents/cap requirements even further.

Firefighting foams containing per and polyfluoroalkyl substances (PFAS) were most likely used in the DPW yard. WDNR will require some testing and analysis to determine if PFAS are present. At this time, Moraine recommends two rounds of groundwater monitoring with PFAS analysis at four (4) sampling locations in close proximity to the firefighting training area at the north end of the yard. PFAS analysis requires submittal and analysis of a field blank and this is important due to the high cost of PFAS analysis. If the first round of groundwater PFAS sampling and analysis results in no detections (or detections below currently proposed standards), then a second round will not be completed.

Based on the above, Moraine recommends the following revised work scope with associated costs on the attached Estimates #2074 and #2075.

If you have any questions, please contact me. I have also enclosed a short form Professional Services Contract for your approval and signature.

Sincerely,

Dave Lennon

David M. Lennon, P.E.
Senior Project Manager
Moraine Environmental, Inc.

Enclosures: Tables, Figures, Lab Reports, Boring Logs
Cost Estimates #2074 & #2075
Professional Services Agreements

N

W. Freistadt Rd.

Business

Equipment Shed For Business

Residence

Village of Theinsville DPW Service Center

Garage

Theinsville Post Office

Turned Over Spill Area

Note: Drums and containers used for MATC Fire Fighting School no longer present. Only concrete pad remains.

1/2 UST Empty (former)

Concrete Pad

B4 B5 B7 B8 B9 B10 B11 B12 B13 B15 B17 B18 B19 B20 B21 B22 B23 B24 B25 B26 B27 B29

SD/B1 SD/B2 SD/B3 SD/B6 SD/B14 SD/B16 SD/B28

SP-1 SP-2 SP-3 SP-4 SP-5 SP-6 SP-7

Village of Thiensville
Highway Department Property
132 W. Freistadt Road
Thiensville, WI 53092

Legend

- SD/B3 - Soil Boring Locations
- B7 - Soil Boring/Temporary Well Locations
- SP-1 - Soil Probe Locations
- 55-gallon drums

LT = Leaking Top

LB = Leaking Bottom

*Borings B-1 through B-3 advanced on 12/28/11

*Borings B-4 through B-9 advanced on 5/2/12 are 40 feet in each direction of the original referenced boring.

*Borings B-14 through B-21 advanced on 1/23/13

Moraine Environmental, Inc.
Environmental Management Services
766 Tower Drive, Fredonia, WI 53021
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FIGURE B.1.b
DETAILED SITE MAP

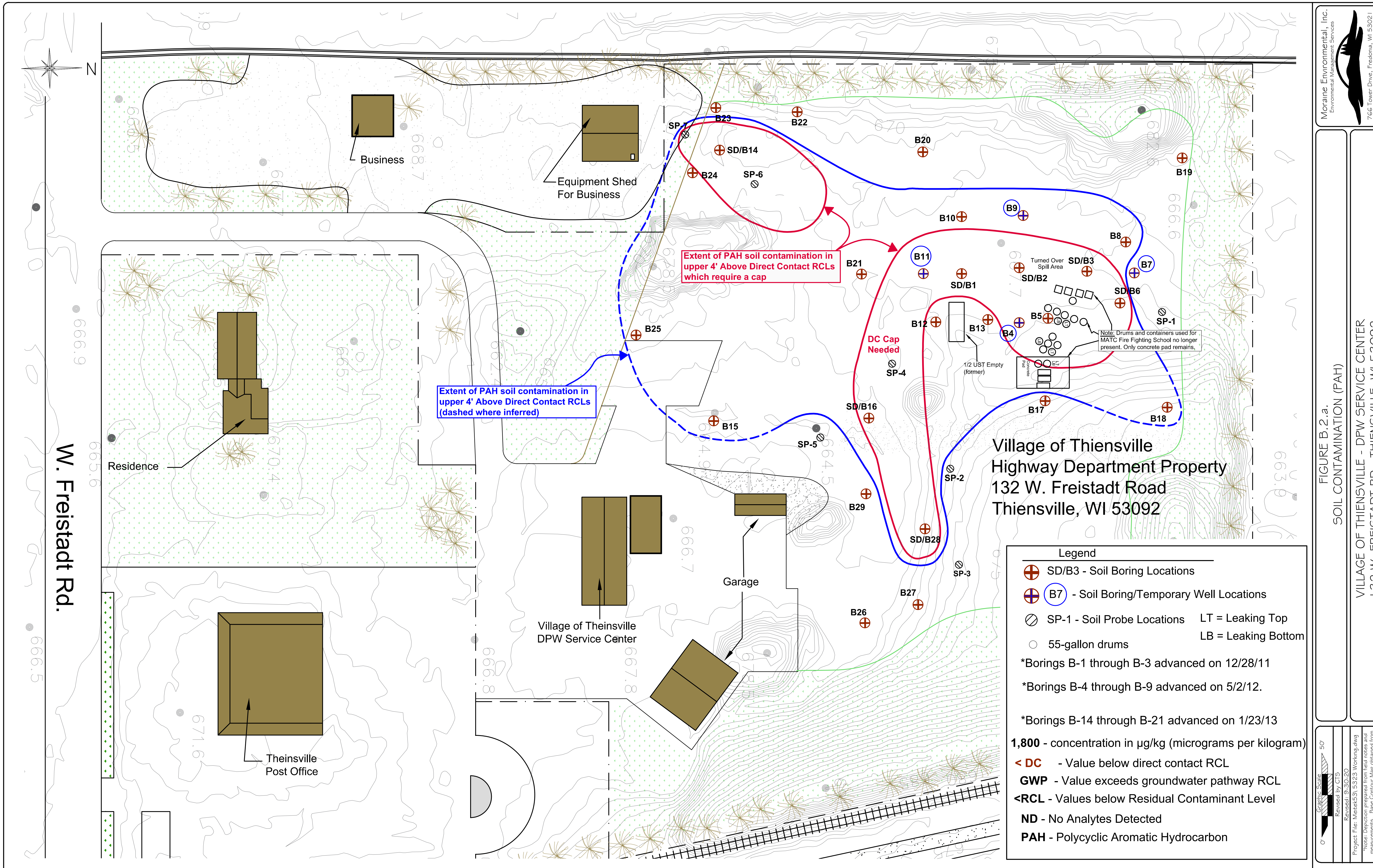
VILLAGE OF THIENSVILLE - DPW SERVICE CENTER
132 W. FREISTADT RD., THIENSVILLE, WI 53092

Graphic Scale 0 50'

Revised by: CTS
Revised: 9.25.20

Project File: Mettet\53\5323 Working.dwg

*Note: Depiction prepared from field notes and measurements. Base Contour Map obtained from the City of Mequon Public Works Department.



N
W. Freistadt Rd.
Business
Equipment Shed For Business
Residence
Theinsville Post Office
Village of Theinsville DPW Service Center
Garage
Extent of PAH soil contamination in upper 4' Above Direct Contact RCLs which require a cap
Extent of PAH soil contamination in upper 4' Above Direct Contact RCLs (dashed where inferred)
DC Cap Needed
Turned Over Spill Area
Note: Drums and containers used for MATC Fire Fighting School no longer present. Only concrete pad remains.
1/2 UST Empty (former)
SP-1
SP-2
SP-3
SP-4
SP-5
SP-6
SP-7
SD/B1
SD/B2
SD/B3
B4
B5
SD/B6
B7
B8
B9
B10
B11
B12
B13
SD/B14
B15
SD/B16
B17
B18
B19
B20
B21
B22
B23
B24
B25
B26
B27
SD/B28
B29
Village of Thiensville
Highway Department Property
132 W. Freistadt Road
Thiensville, WI 53092
Legend
SD/B3 - Soil Boring Locations
B7 - Soil Boring/Temporary Well Locations
SP-1 - Soil Probe Locations
LT = Leaking Top
LB = Leaking Bottom
55-gallon drums
*Borings B-1 through B-3 advanced on 12/28/11
*Borings B-4 through B-9 advanced on 5/2/12.
*Borings B-14 through B-21 advanced on 1/23/13
1,800 - concentration in µg/kg (micrograms per kilogram)
< DC - Value below direct contact RCL
GWP - Value exceeds groundwater pathway RCL
<RCL - Values below Residual Contaminant Level
ND - No Analytes Detected
PAH - Polycyclic Aromatic Hydrocarbon
Moraine Environmental, Inc.
FIGURE B.2.a.
SOIL CONTAMINATION (PAH)
VILLAGE OF THIENSVILLE - DPW SERVICE CENTER
132 W. FREISTADT RD., THIENSVILLE, WI 53092
Graphic Scale

Table A.2.
Soil Analytical Results
Village of Thiensville - DPW Service Center
132 W Freistadt Rd., Thiensville, WI 53092

Boring & Sample Information				PAHs & Detected SVOCs (ug/kg)																		Data Review Results					
Borehole No.	Sample Date	Sample Depth (feet)	Saturated (S) Unsaturated (U)	1-Methyl naphthalene	2-Methyl naphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluor anthene	Benzo (g,h,i) perylene	Benzo(k) fluor anthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	Naph thalene	Phen anthrene	Pyrene	Carbazole	bis(2-Ethylhexyl) phthalate	GW Pathway Exceedance	DC Exceedance	cPAH Analysis Performed	cPAH Result	Extent Defined	Comments:
Groundwater Pathway RCL				NS	NS	NS	NS	196,949	NS	470	478	NS	NS	144.2	NS	88,878	14,830	NS	658.2	NS	54,546	NS	2,880						
Non-Industrial Direct Contact Pathway RCL				17,600	239,000	3,590,000	NS	17,900,000	1,140	115	1,150	NS	11,500	115,000	115	2,390,000	2,390,000	1,150	5,520	NS	1,790,000	NS	38,800						
Industrial Direct Contact Pathway RCL				72,700	3,010,000	45,200,000	NS	100,000,000	20,800	2,110	21,100	NS	211,000	2,110,000	2,110	30,100,000	30,100,000	21,100	24,100	NS	22,600,000	NS	164,000						
B-1	12/28/11	1	U	--	<38.7	<176	<37.7	<176	339 J	***505***	439	473	472	*458*	**156 J**	335 J	34.5 J	421	<41.1	269 J	868	<36.2	<71.9	Y	Y	X	Fail	Y	
B-1	12/28/11	3	U	--	<38.3	<174	<37.3	<174	420	***431***	435	342 J	420	*527*	113 J	483	64.7 J	326 J	<40.7	544	1,340	36.5 J	<71.2	Y	Y	X	Fail	Y	**Cap required**; Groundwater Analysis Needed at this Location due to GW Pathway exceedacnes of Arsenic in 7.5' soil sample. **Install 10' Small diameter well and analyze groundwater for Arsenic**
B-1	12/28/11	7.5	S	--	<20.5	<92.7	<19.9	<92.7	<20.9	<22.5	<21.9	<92.7	<29.3	<27.1	<34.0	<32.8	<9.3	<24.9	<21.7	<92.7	<45.2	<19.1	<38.0	N	N	--	--	Y	
B-2	12/28/11	1	U	--	<78.9	<358	<76.8	<358	149 J	**450 J**	319 J	595 J	400 J	287 J	<131	<127	<36.0	544 J	<83.7	<358	397 J	<73.8	<147	Y	Y	X	Fail	N	
B-2	12/28/11	5	S	--	266 J	<848	<182	1,190 J	3,960	***4,990***	***5,200***	3,440	5,070	*5,690*	**1,380 J**	8,880	1,020 J	**3,520**	280 J	8,380	17,000	922 J	2,050	Y	Y	X	Fail	N	**Cap Required**; **Groundwater Analysis Needed** at this Location due to GW Pathway exceedacnes of PAHs in 5' soil sample. **Install 10' Small diameter well and analyze groundwater for PAH**
B-3	12/28/11	1	U	--	<416	<1,890	<405	<1,890	560 J	***1,770 J***	<446	<1,890	<596	*827 J*	<692	<668	<190	**1,820 J**	<442	<1,890	<919	<390	<773	Y	Y	X	Fail	Y	
B-3	12/28/11	3	U	--	<405	<1,840	<394	<1,840	<414	<446	<434	<1,840	<580	<536	<673	<650	<185	<493	<430	<1,840	<895	<379	*16,600*	N	N	--	--	Y	**Cap Required**; **Groundwater Analysis Needed** at this Location due to GW Pathway Exceedance of Toluene in 8' soil sample. **Install 10' Small diameter well and analyze groundwater for PVOC**
B-3	12/28/11	8	S	--	<23.0	<104	<22.4	<104	37.5 J	37.0 J	33.8 J	<104	45.8 J	42.2 J	<38.2	55.2 J	<10.5	37.0 J	<24.4	<104	79.8 J	<21.5	<42.7	Y	N	--	--	N	
B-4	5/2/12	2	U	<57.6	<57.6	<53.0	78.9 J	597	**1,830**	***2,040***	***2,100***	1410	1,710	*2,250*	**424**	2,960	98 J	**1,240**	<66.0	805	2,520	NA	NA	Y	Y	X	Fail	Y	
B-4	5/2/12	5	S	4.5 J	4.2 J	7.7 J	4.0 J	27.2	29.9	42	40.5	15.5 J	30.7	37.7	6.2 J	74.5	9.9 J	15.5 J	6.5 J	77	82.8	NA	NA	N	N	--	--	Y	**Cap required**; No need for additional soil or groundwater analysis around this Location
B-5	5/2/12	2	U	<11.4	12.9 J	<10.5	107	119	403	***604***	*716*	276	502	*545*	99.2	732	19.6 J	258	<13.1	161	755	NA	NA	Y	Y	X	Fail	Y	
B-5	5/2/12	5	S	<2.7	<2.7	<2.5	<2.8	<4.1	<2.5	<2.9	<3.1	<2.3	<3.3	<3.2	<4.8	<8.9	<4.4	<2.5	<3.1	<3.9	5.2 J	NA	NA	N	N	--	--	Y	**Cap required**; No need for additional soil or groundwater analysis around this Location
B-6	5/2/12	2	U	<14.0	<14.0	33.7 J	214	307	650	***944***	*913*	473	807	*768*	**174**	1,350	82.2 J	473	23.0 J	553	1,160	NA	NA	Y	Y	X	Fail	N	
B-6	5/2/12	5	S	<5.5	<5.5	<5.1	102	125	221	**289**	308	115	257	*246*	44.4	301	13.6 J	110	<6.3	82.1	315	NA	NA	Y	Y	X	PASS	N	**Cap Required**: DC Extents in shallow soil to North of B-6 are undefined. **One 4' probe to N and soil PAH analysis and install 10' SD well at B6. PAH analysis**
B-7	5/2/12	2	U	<2.8	<2.8	<2.6	<2.9	<4.2	4.8 J	5.1 J	5.0 J	2.9 J	5.2 J	5.8 J	<4.9	<9.1	<4.5	2.6 J	<3.2	<4.0	7.6 J	NA	NA	N	N	--	--	Y	
B-7	5/2/12	5	S	<2.8	<2.8	<2.5	<2.9	<4.2	<2.6	<3.0	<3.1	<2.4	<3.4	<3.3	<4.9	<9.1	<4.5	<2.6	<3.2	<4.0	<3.3	NA	NA	N	N	--	--	Y	No Cap required and extent is defined - No further investigation needed around B7
B-8	5/2/12	2	U	5.2 J	9.2 J	4.3 J	109	108	167	**278**	243	176	212	*189*	51.7	239	9.6 J	140	18.1	82	247	NA	NA	Y	Y	X	PASS	Y	
B-8	5/2/12	5	S	<2.9	<2.9	<2.7	<3.0	<4.4	<2.7	<3.1	<3.3	<2.5	<3.5	<3.4	<5.2	<9.5	<4.7	<2.7	<3.3	<4.2	<3.5	NA	NA	N	N	--	--	Y	No Cap required and extent is defined - No further investigation needed around B8
B-9	5/2/12	2	U	<5.7	8.4 J	13.0 J	55.1	114	264	**393**	390	215	364	*352*	74.9	539	27.0 J	194	16.7 J	253	458	NA	NA	Y	Y	X	PASS	Y	
B-9	5/2/12	6	S	<2.8	<2.8	<2.6	<2.9	<4.3	3.4 J	7.5 J	6.2 J	4.4 J	5.6 J	6.4 J	<5.0	<9.2	<4.6	3.6 J	<3.2	<4.0	10.8 J	NA	NA	N	N	--	--	Y	No Cap required and extent is defined - No further investigation needed around B9
B-10	5/2/12	2	U	<5.4	5.5 J	6.5 J	100	154	279	**392**	389	193	299	*350*	73.4	534	24.2 J	183	<6.2	236	532	NA	NA	Y	Y	X	PASS	Y	
B-10	5/2/12	6	S	<2.9	3.6 J	3.5 J	8.6 J	24.4	40.3	44.9	43.4	19.1	39.3	49	7.5 J	84	8.7 J	17.8 J	14.2 J	51.2	74.7	NA	NA	N	N	--	--	Y	No Cap required and extent is defined - No further investigation needed around B10
B-11	5/2/12	2	U	6.4 J	10.0 J	12.3 J	88.1	168	322	**418**	*482*	174	323	*366*	65.6	616	27.6 J	167	9.9 J	248	543	NA	NA	Y	Y	X	Fail	Y	
B-11	5/2/12	6.5	S	<2.8	<2.8	<2.6	<2.9	<4.3	3.6 J	3.2 J	<3.2	<2.4	<3.4	3.9 J	<5.0	<9.2	<4.6	<2.6	<3.2	5.3 J	7.5 J	NA	NA	N	N	--	--	Y	**Cap required** but extent is defined - No further investigation needed around B11
B-12	5/2/12	2	U	<11.3	<11.3	31.0 J	23.6 J	186	388	**400**	421	141	376	*445*	56.0 J	1,080	44.5 J	146	<13.0	604	897	NA	NA	Y	Y	X	PASS	Y	
B-12	5/2/12	5	S	<2.8	<2.8	<2.6	<2.9	<4.3	7.6 J	8.8 J	9.0 J	4.5 J	9.5 J	11.1 J	<5.0	24	<4.6	4.4 J	<3.2	9.3 J	20.6	NA	NA	N	N	--	--	Y	No Cap required and extent is defined - No further investigation needed around B12
B-13	5/2/12	2	U	<5.5	6.3 J	6.7 J	29.3 J	77.4	164	**219**	241	118	226	*230*	34.2 J	404	13.2 J	95.7	10 J	161	337	NA	NA	Y	Y	X	PASS	Y	
B-13	5/2/12	5	S	<2.8	<2.8	<2.6	<3.0	5.3 J	9.4 J	9.7 J	9.8 J	3.6 J	8.1 J	9.5 J	<5.1	19.5	<4.76	3.6 J	<3.3	10.7 J	17.9 J	NA	NA	N	N	--	--	Y	No Cap required and extent is defined - No further investigation needed around B13
B-14	1/23/13	4	U	<175	51.1 J	352 J	451	2,300	**3,860**	***3,570***	***2,980***	2,210	3,350	*4,260*	810	10,200	710	**2,000**	<72.2	7,070	6,580	NA	NA	Y	Y	X	Fail	N	**Cap Required**, Soil Extents undefined to SW & NE - **Install 2-4' probes accordingly and install 10' SD well at B14. PAH analysis**
B-15	1/23/13	4	U	<8.3	4.6 J	<9.1	69.0	58.6	128	**195**	160	101	160	*146*	37.6	184	<9.1	99.0	5.1 J	35.5	197	NA	NA	Y	Y	X	PASS	N	No Cap required but extent is undefined - **Install 1-4'probe to South of B15. PAH Analysis**
B-16	1/23/13	4	U	<728	377J	<797	3,400	7,230	**8,590**	***8,150***	***5,940***	4,500	7,760	*8,720*	**1,530 J**	22,000	3,590	**4,090**	310 J	18,000	15,500	NA	NA	Y	Y	X	Fail	N	**Cap Required**, Soil Extents undefined to SE & W - **Install 2-4' probes accordingly and install 10' SD well at B16. PAH analysis**
B-17	1/23/13	4	U	<8.6	<1.8	<9.4	<9.4	8.1 J	16.4 J	23.3	24.9	24.1	18.5 J	20.9	<9.4	29.3	<9.4	17.8 J	<3.5	10.4 J	23.2	NA	NA	N	N	--	--	Y	No Cap required and extent is defined - No further investigation needed around B17
B-18	1/23/13	4	U	<8.7	6.4 J	<9.6	24.7	69.9	134	**147**	124	82.9	158	145	32.0	318	12.7 J	77.3	9.4 J	179	263	NA	NA	N	Y	X	PASS	N	No Cap required but extent is undefined - **Install 1-4'probe to Northeast of B18. PAH Analysis**
B-19	1/23/13	4	U	<8.8	5.1 J	<9.6	<9.6	3.7 J	<9.6	<9.6	6.3 J	<9.6	10.8 J	9.7 J	<9.6	15.9 J	<9.6	<9.6	9.9 J	10.0 J	12.9 J	NA	NA	N	N	--	--	Y	No Cap required and extent is defined - No further investigation needed around B19
B-20	1/23/13	4	U	<9.0	4.9 J	<9.9	30.5	20.4	48.4	81.2	72.5	62.5	59.7	60.4	19.0 J	64.5	<9.9	49.7	8.4 J	17.0 J	72.7	NA	NA	N	N	--	--	Y	No Cap required and extent is defined - No further investigation needed around B20
B-21	1/23/13	4	U	<8.6	<1.8	<9.5	<9.5	3.9 J	11.7 J	12.1 J	12.3 J	10.3 J	12.1 J	14.5 J	<9.5	26.5	<9.5	<9.5	<3.6	11.0 J	18.7 J	NA	NA	N	N	--	--	Y	No Cap required and extent is defined - No further investigation needed around B21
B-22	10/16/13	3-4	U	<3.5	<9.9	<9.9	13.9 J	43.3	111	130	109	73.8	122	133	26.9	262	<9.9	63.9	<9.9	116	210	NA	NA	N	N	--	--	Y	No Cap required and extent is defined - No further investigation needed around B22
B-23	10/16/13	3-4	U	<3.4	<9.6	<9.6	<9.6	<9.6	10.7 J	12.4 J	15.7 J	<9.6	9.4 J	15.7 J	<9.6	29.3	<9.6	<9.6	<9.6	20.4	26.4	NA	NA	N	N	--	--	Y	No Cap required and extent is defined - No further investigation needed around B23
B-24	10/16/13	3-4	U	6.8 J	<19.2	<19.2	47.8	93.1	248	**293**	260	210	271	313	67.5	598	29.8 J	176	<19.2	273	470	NA	NA	N	Y	X	PASS	N	No Cap required and extent is defined - No further investigation needed around B24
B-25	10/16/13	3-4	U	6.1 J	<9.6	<9.6	96.3	69.1	193	**286**	211	194	269	236	71.7	292	21.1	160	14.3 J	139	267	NA	NA	N	Y	X	PASS	N	No Cap required but extent is undefined - **Install 1-4'probe to South of B25. PAH Analysis**
B-26	10/16/13	3-4	U	<3.1	<8.8	<8.8	<8.8	<8.8	<8.8	9.3 J	7.1 J	8.9 J	<8.8	6.2 J	10.2 J	<8.8	22.5	<8.8	<8.8	16.7 J	17.0 J	NA	NA	N	N	--	--	Y	No Cap required and extent is defined - No further investigation needed around B26
B-27	10/16/13	3-4	U	3.9 J	<8.7	<8.7	<8.7	<8.7	<8.7	<3.1	<8.7	<8.7	<3.1	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	NA	NA	N	N	--	--	Y	No Cap required and extent is defined - No further investigation needed around B27
B-28	10/16/13	3-4	U	<626	<1,770	<1,770	3,570	15,300	**35,400**	***36,000***	***31,700***	19,900	**31,100**	*37,900*	**6,260**	80,300	3,190 J	**17,200**	<1,770	30,800	*64,700*	NA	NA	Y	Y	X	Fail	N	**Cap Required**, Soil Extents undefined to NW & NE - **Install 2-4' probes accordingly and install 10' SD well at B28. PAH analysis**
B-29	10/16/13	3-4	U	<3.2	<8.9	<8.9	<8.9	<8.9	<8.9	3.9 J	<8.9	<8.9	3.4 J	<8.9	<8.9	9.4 J	<8.9	<8.9	<8.9	<8.9	<8.9	NA	NA	N	N	--	--	Y	No Cap required and extent is defined - No further investigation needed around B29
SP-1 (2-4)	12/16/19	2-4	U	<2.9	<2.9	<2.6	10.5 J	8.4 J	28.0	28.7	45.3	19.5 J	22.2	41.7	6.5 J	55.3	<2.4	17.2 J	<2.0	9.9 J	50.6	NA	NA	N	N	--	--	Y	Installed to define PAH DC extents N of B6; Results = no RCL or DC Exceedances - EXTENT DEFINED
SP-2 (2-4)	12/16/19	2-4	U	3.2 J	7.4 J	3.9 J	55.8	61.5	164	219	274	157	110	*185*	55.3	241	6.1 J	126	14.3 J	77.3	207	NA	NA	Y	N	--	--	Y	Installed to define ectents NW of B28; Only Chrysene above GW Pathway RCL - EXTENT of DC Defined - SD/B28 is Down-Gradient
SP-3 (2-4)	12/16/19	2-4	U	<2.6	<2.6	<2.3	9.3 J	10.3 J	25.6	35.3	50.1	27.2	22.2	33.4	8.3 J	47.6	<2.1	22.2	<1.7	19.2	38.6	NA	NA	N	N	--	--	Y	Installed to define extents NE of B28; No GWP or DC exceedances - EXTENT of DC Defined
SP-4 (2-4)	12/16/19	2-4	U	34.2 J	45.2 J	74.5	191	290	832	***1320***	***1950***	923	616	*1120*	**264**	1900	108	776	101	926	1420	NA	NA	Y	Y	X	Fail	Y	Installed to define DC extents W of B16; DC exceedances present, but below IDC - cPAH Calculator results in Cap required
SP-5 (2-4)	12/16/19	2-4	U	<2.6	<2.6	<2.3	<2.2	<2.2	<2.3	<2.0	<2.4	<3.1	<2.2	<3.3	<2.4	<2.1	<2.1	<3.7	<1.7	<2.0	<2.6	NA	NA	N	N	--	--	Y	Installed to define DC Extents S/SE of B16; EXTENT Defined to S/SE of B16
SP-6 (2-4)	12/16/19	2-4	U	27.5 J	29.7 J	141	79.0	345	865	***1020***	***1520***	715	508	*1080*	**199**	2320	178	596	98.9	1400	1590	NA	NA	Y	Y	X	Fail	N	Installed to define DC extents NE of B14; DC Exceedances present, but below IDC - cPAH Calculator results in Cap required:
SP-7 (2-4)	12/16/19	2-4	U	<8.3	16.2 J	45.2 J	143	207	540	***652***	*839*	467	358	640	**126**	1290	90.5	383	24.4 J	688	951	NA	NA	Y	Y	X	Fail	N	Installed to define DC extents SW of B14; DC Exceedances present, but below IDC - cPAH Calculator results in Cap required. **One or two 4'probes to S of SP-7 with PAH soil analysis**

Groundwater Pathway and Direct Contact RCLs calculated ı

All values expressed in µg/kg (micrograms per kilogram). ~ equivalent to parts per billion (ppb)
BGS - feet below ground surface
DC - Direct Contact
RCL - Residual Contaminant Level
NS - No Standard established for this analyte
NA - sample Not Analyzed for this parameter
"---" - sample not analyzed for this parameter
" --" - no sample collected from this location
< - less than the specified detection limit
J - Estimated concentration at or above the limit of detection and below the limit of quantitation
Italics - value exceeds Groundwater Pathway RCL
Bold - value exceeds Non-Industrial Direct Contact RCL
Bold Underlined - value exceeds Industrial Direct Contact RCL

Table A.1.
Groundwater Analytical Results

Village of Thiensville - DPW Service Center
132 W Freistadt Rd., Thiensville, WI 53092

Sample ID	B-4	B-7	B-9	B-11	SD/B1	SD/B2	SD/B3	SD/B6	SD/B14	SD/B16	SD/B28	NR 140 Preventive Action Limit (PAL)	NR 140 Enforcement Standard (ES)
Sample Collection Date	5/3/12	5/3/12	5/3/12	5/3/12	12/19/19	12/19/19	12/19/19	12/19/19	12/19/19	12/19/19	12/19/19		
Petroleum Volatile Organic Compounds (µg/l)													
1,2,4-Trimethylbenzene	<0.43	<0.43	<0.43	<0.43	---	---	<0.84	---	---	---	---	NS	NS
1,3,5-Trimethylbenzene	<0.40	<0.40	<0.40	<0.40	---	---	<0.87	---	---	---	---	NS	NS
Benzene	<0.39	<0.39	<0.39	<0.39	---	---	<0.25	---	---	---	---	*0.5*	**5**
Ethylbenzene	8.3	<0.41	<0.41	<0.41	---	---	<0.22	---	---	---	---	*140*	**700**
Methyl-tert-butyl ether	<0.38	<0.38	<0.38	<0.38	---	---	<1.2	---	---	---	---	*12*	**60**
Naphthalene	0.019 J	0.067	0.043 J	0.32	---	---	<1.2	---	---	---	---	*10*	**100**
Toluene	<0.42	<0.42	<0.42	0.77 J	---	---	1.3 J	---	---	---	---	*160*	**800**
m&p-Xylene	2.4	<0.87	<0.87	<0.87	---	---	<0.47	---	---	---	---	NS	NS
o-Xylene	2	<0.38	<0.38	<0.38	---	---	<0.26	---	---	---	---	NS	NS
Total Trimethylbenzenes	<0.83	<0.83	<0.83	<0.83	---	---	<1.71	---	---	---	---	*96*	**480**
Total Xylenes	4.4	<1.25	<1.25	<1.25	---	---	<0.73	---	---	---	---	*400*	**2,000**
Polycyclic Aromatic Hydrocarbons (µg/l)													
1-Methylnaphthalene	0.013 J	0.021 J	0.025 J	0.24	---	0.026 J	---	0.035	0.022 J	0.016 J	0.019 J	NS	NS
2-Methylnaphthalene	0.022 J	0.037 J	0.041 J	0.4	---	0.044	---	0.053	0.040	0.034	0.034	NS	NS
Acenaphthene	<0.0048	<0.0051	0.041 J	0.014 J	---	0.026 J	---	0.030 J	<0.0061	<0.0061	0.012 J	NS	NS
Acenaphthylene	<0.0038	<0.0040	0.010 J	0.0073 J	---	<0.0050	---	0.016 J	<0.0050	<0.0050	<0.0050	NS	NS
Anthracene	0.011 J	<0.0064	<0.0061	0.0091 J	---	<0.010	---	0.033 J	<0.010	<0.010	0.033 J	*600*	**3,000**
Benzo(a)anthracene	<0.0038	<0.0040	0.0084 J	0.0095 J	---	<0.0076	---	<0.0076	<0.0076	<0.0076	0.040	NS	NS
Benzo(a)pyrene	0.0052 J	<0.0032	0.012 J	0.016 J	---	<0.011	---	0.014 J	<0.011	<0.011	*0.065*	*0.02*	**0.2**
Benzo(b)fluoranthene	0.0041 J	0.0038 J	0.013 J	0.014 J	---	<0.0057	---	0.0066 J	<0.0057	<0.0057	*0.077*	*0.02*	**0.2**
Benzo(g,h,i)perylene	0.0069 J	<0.0054	0.013 J	0.014 J	---	<0.0068	---	0.018 J	<0.0068	<0.0068	0.045	NS	NS
Benzo(k)fluoranthene	<0.0046	0.0052 J	0.012 J	0.014 J	---	<0.0076	---	0.012 J	<0.0076	<0.0076	0.062	NS	NS
Chrysene	0.0047 J	0.0062 J	0.016 J	0.015 J	---	<0.013	---	0.018 J	<0.013	<0.013	*0.13*	*0.02*	**0.2**
Dibenz(a,h)anthracene	<0.0034	<0.0036	<0.0034	<0.0035	---	<0.010	---	<0.010	<0.010	<0.010	<0.010	NS	NS
Fluoranthene	<0.0047	<0.0049	0.018 J	0.028 J	---	<0.011	---	0.031 J	<0.011	<0.011	0.22	*80*	**400**
Fluorene	<0.0051	<0.0053	0.0075 J	0.027 J	---	<0.0080	---	0.018 J	<0.0080	<0.0080	0.011 J	*80*	**400**
Indeno(1,2,3-cd)pyrene	<0.0050	<0.0052	0.0096 J	0.011 J	---	<0.018	---	<0.018	<0.018	<0.018	0.038 J	NS	NS
Naphthalene	0.019 J	0.067	0.043 J	0.32	---	0.050 J	---	0.052 J	0.045 J	0.036 J	0.036 J	*10*	**100**
Phenanthrene	<0.0086	<0.0090	0.011 J	0.037 J	---	0.014 J	---	0.034 J	<0.014	<0.014	0.14	NS	NS
Pyrene	<0.0050	<0.0053	0.017 J	0.024 J	---	0.014 J	---	0.048	<0.0076	<0.0076	0.23	*50*	**250**
Resource Conservation & Recovery Act (RCRA) Metals (µg/L)													
Arsenic	<4.7	*6.3 J*	*4.7 J*	*5.9 J*	*1.4*	---	---	---	---	---	---	*1*	**10**
Barium	--	--	--	--	---	---	---	---	---	---	---	*400*	**2,000**
Cadmium	--	--	--	--	---	---	---	---	---	---	---	*0.5*	**5**
Chromium	<2.0	<2.0	<2.0	<2.0	---	---	---	---	---	---	---	*10*	**100**
Lead	*2.4 J*	*3.7 J*	*2.1 J*	<1.7	---	---	---	---	---	---	---	*1.5*	**15**
Selenium	--	--	--	--	---	---	---	---	---	---	---	*10*	**50**
Silver	--	--	--	--	---	---	---	---	---	---	---	*10*	**50**
Mercury	--	--	--	--	---	---	---	---	---	---	---	*0.2*	**2**

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
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Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Revelopment ☒ Other ☐ _____

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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Thiensville Highway Dept.		SP-1

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name: Adam Last Name: Sweet Firm: Horizon Construction & Exploration	12/16/2019 (m m d d y y y y)	12/16/2019 (m m d d y y y y)	Direct Push

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet MSL	_____ Feet MSL	2.25 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane _____ N, _____ E
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E _____ Feet ☐ S _____ Feet ☐ W

SE 1/4 of SE 1/4 of Section 15, T 09 N, R 21 E

Facility ID	County	County Code	Civil Town/City/ or Village
	Ozaukee	46	Thiensville

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	36			4" Topsoil 12" Gravel				0						
				12" clay				2'						
				8" Gravel				0						
			4'	L→ E.O.B. @ 4'				4'						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Dave Lemon Firm Mojave Environmental, Inc.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Revelopment ☒ Other ☐ ____________

Page 1 of 1

Facility/Project Name: Thiensville Highway Dept.	License/Permit/Monitoring Number	Boring Number: SP-2	
Boring Drilled By: Name of crew chief (first, last) and Firm — First Name: Adam Last Name: Sweet — Firm: Horizon Construction & Exploration	Date Drilling Started: 12/16/2019 (m m d d y y y y)	Date Drilling Completed: 12/16/2019 (m m d d y y y y)	Drilling Method: Direct Push
WI Unique Well No. / DNR Well ID No. / Well Name	Final Static Water Level ____ Feet MSL	Surface Elevation ____ Feet MSL	Borehole Diameter 2.25 inches
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐ State Plane ____ N, ____ E — SE 1/4 of SE 1/4 of Section 15, T 09 N, R 21 E	Lat ° ' " Long ° ' "	Local Grid Location ____ Feet ☐ N ☐ S ____ Feet ☐ E ☐ W	
Facility ID / County: Ozaukee	County Code: 46	Civil Town/City/ or Village: Thiensville	

Sample: Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				3" Topsoil				0						
	24			21" gravel/clay fill				2'						
								0						
			4'					4'						
				→ E.O.B. @ 4'										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Dave Lennon Firm: Moraine Environmental, Inc.

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

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Remediation/Revelopment ☒ Other ☐ _____

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Facility/Project Name: Thiensville Highway Dept.	License/Permit/Monitoring Number	Boring Number: SP-3	
Boring Drilled By: Name of crew chief (first, last) and Firm — First Name: Adam Last Name: Sweet — Firm: Horizon Construction & Exploration	Date Drilling Started: 12/16/2019 (m m d d y y y y)	Date Drilling Completed: 12/16/2019 (m m d d y y y y)	Drilling Method: Direct Push
WI Unique Well No. _ _ _ _ _ _	DNR Well ID No. _ _ _ _	Well Name	Final Static Water Level: _____ Feet MSL
Surface Elevation: _____ Feet MSL	Borehole Diameter: 2.25 inches		
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐ — State Plane _____ N, _____ E — SE 1/4 of SE 1/4 of Section 15, T 09 N, R 21 E	Lat ° ' " — Long ° ' "	Local Grid Location: ☐ N ☐ E _____ Feet ☐ S _____ Feet ☐ W	
Facility ID	County: Ozaukee	County Code: 46	Civil Town/City/ or Village: Thiensville

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	24			3" Topsoil 9" Gravel 12" gravel/clay mix (fill)				0 2 0						
			4'	↳ E.O.B. @ 4'				4'						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Dave Lemon Firm: Mojave Environmental, Inc.

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

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Department of Natural Resources

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Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Revelopment ☒ Other ☐ _____

Page 1 of 1

Facility/Project Name: Thiensville Highway Dept.	License/Permit/Monitoring Number	Boring Number: SP-4	
Boring Drilled By: Name of crew chief (first, last) and Firm — First Name: Adam Last Name: Sweet — Firm: Horizon Construction & Exploration	Date Drilling Started: 12/16/2019 (m m d d y y y y)	Date Drilling Completed: 12/16/2019 (m m d d y y y y)	Drilling Method: Direct Push
WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level: _____ Feet MSL	Surface Elevation: _____ Feet MSL	Borehole Diameter: 2.25 inches
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐ — State Plane _____ N, _____ E — SE 1/4 of SE 1/4 of Section 15, T 09 N, R 21 E	Lat ° ' " — Long ° ' "	Local Grid Location: ☐ N ☐ E — Feet ☐ S Feet ☐ W	
Facility ID	County: Ozaukee	County Code: 46	Civil Town/City/ or Village: Thiensville

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	48		4'	6" Gravel 18" gravel / clay mix 12" sand & gravel 12" black silt w/ gravel ↳ E.O.B. @ 4'				0 2' 4 4'						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Dave Lemon Firm: Mojave Environmental, Inc.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Revelopment ☒ Other ☐ _____

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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Thiensville Highway Dept.		SP-5

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name: Adam Last Name: Sweet Firm: Horizon Construction & Exploration	12/16/2019 (m m d d y y y y)	12/16/2019 (m m d d y y y y)	Direct Push

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet MSL	_____ Feet MSL	2.25 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane _____ N, _____ E
SE 1/4 of SE 1/4 of Section 15, T 09 N, R 21 E

Lat ° ' "
Long ° ' "

Local Grid Location
_____ Feet ☐ N ☐ S _____ Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Ozaukee	46	Thiensville

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	48			sand & gravel fill				0 2- 0						
			4'	E.O.B. @ 4'				4'						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Dave Lemon	Mozaic Environmental, Inc.

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

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Remediation/Revelopment ☒ Other ☐ _____

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Facility/Project Name: Thiensville Highway Dept.	License/Permit/Monitoring Number	Boring Number: SP-6	
Boring Drilled By: Name of crew chief (first, last) and Firm — First Name: Adam Last Name: Sweet — Firm: Horizon Construction & Exploration	Date Drilling Started: 12/16/2019	Date Drilling Completed: 12/16/2019	Drilling Method: Direct Push
WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level: _____ Feet MSL	Surface Elevation: _____ Feet MSL	Borehole Diameter: 2.25 inches
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐ — State Plane _____ N, _____ E — SE 1/4 of SE 1/4 of Section 15, T 09 N, R 21 E	Lat ° ' " — Long ° ' "	Local Grid Location: _____ Feet ☐ N ☐ S _____ Feet ☐ E ☐ W	
Facility ID	County: Ozaukee	County Code: 46	Civil Town/City/ or Village: Thiensville		

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	48		4'	3" Asphalt 21" Gravel 24" gravel/clay fill ↳ E.O.B. @ 4'				0 2'– 0 4'						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Dave Lemon — Firm: Mozaic Environmental, Inc.

State of Wisconsin
Department of Natural Resources

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Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Revelopment ☒ Other ☐ _____

Page 1 of 1

Facility/Project Name: Thiensville Highway Dept.	License/Permit/Monitoring Number	Boring Number: SP-7	
Boring Drilled By: Name of crew chief (first, last) and Firm — First Name: Adam Last Name: Sweet — Firm: Horizon Construction & Exploration	Date Drilling Started: 12/16/2019 (m m d d y y y y)	Date Drilling Completed: 12/16/2019	Drilling Method: Direct Push
WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level: _____ Feet MSL	Surface Elevation: _____ Feet MSL	Borehole Diameter: 2.25 inches
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐ — State Plane _____ N, _____ E — SE 1/4 of SE 1/4 of Section 15, T 09 N, R 21 E	Lat ° ' " — Long ° ' "	Local Grid Location: ☐ N ☐ E _____ Feet ☐ S _____ Feet ☐ W	
Facility ID	County: Ozaukee	County Code: 46	Civil Town/City/ or Village: Thiensville

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	48			3" Topsoil 9" Gravel 36" clay/gravel fill				0 2'– 0						
			4'	↳ E.O.B. @ 4'				4'						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Dave Lemon Firm: Mojave Environmental, Inc.

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Ozaukee		

Latitude / Longitude (see instructions): _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼	¼	Section	Township	Range
SE	SE	15	09 N	21 ☒ E ☐ W

or Gov't Lot #

Well Street Address: 132 W. Freistadt Rd.

Well City, Village or Town	Well ZIP Code
Thiensville	53092

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Soil Probe Only	

2. Facility / Owner Information

Facility Name: Thiensville Hwy Dept
Facility ID (FID or PWS): 246090900
License/Permit/Monitoring #: SP-1
Original Well Owner:
Present Well Owner:
Mailing Address of Present Owner:

City of Present Owner	State	ZIP Code

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 12/16/2019

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (specify): Direct Push

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
—	—

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
—	—

Was well annular space grouted? ☐ Yes ☐ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☐ N/A
Liner(s) perforated?	☐ Yes	☐ No	☐ N/A
Screen removed?	☐ Yes	☐ No	☐ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

Material Used to Fill Well / Drillhole	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
3/8" Bentonite Chips	Surface	4	0.088 ft³	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
Dave Lennon - Moraine Env.		12/16/2019

Street or Route	Telephone Number
766 Tower Dr.	( )

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Fredonia	WI	53021	Dave Lennon	12/19/19

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

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☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☑ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Ozaukee	_ _ _ _ _ _ _	

Latitude / Longitude (see instructions): _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼	¼	Section	Township	Range
SE	SE	15	09 N	☒ E ☐ W

or Gov't Lot #

Well Street Address: 132 W. Freistadt Rd.

Well City, Village or Town	Well ZIP Code
Thiensville	53092

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Soil Probe Only	_ _ _ _ _ _ _

2. Facility / Owner Information

Facility Name: Thiensville Hwy Dept.
Facility ID (FID or PWS): 246090900
License/Permit/Monitoring #: SP-2
Original Well Owner:
Present Well Owner:
Mailing Address of Present Owner:

City of Present Owner	State	ZIP Code

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 12/16/2019

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (specify): Direct Push

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
—	—

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
—	—

Was well annular space grouted? ☐ Yes ☐ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☐ N/A
Liner(s) perforated?	☐ Yes	☐ No	☐ N/A
Screen removed?	☐ Yes	☐ No	☐ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

5. Material Used to Fill Well / Drillhole	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
3/8" Bentonite Chips	Surface	4	0.088 ft³	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
Dave Lennon - Moraine Env.		12/16/2019

Street or Route	Telephone Number
766 Tower Dr.	( )

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Fredonia	WI	53021	Dave Lennon	12/19/19

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

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☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Ozaukee	_ _ _ _ _ _ _	

Latitude / Longitude (see instructions) _____ N _____ W — Format Code: ☐ DD ☐ DDM — Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼	¼	Section	Township	Range
SE	SE	15	09 N	21 ☒ E ☐ W

or Gov't Lot #

Well Street Address: 132 W. Freistadt Rd.

Well City, Village or Town	Well ZIP Code
Thiensville	53092

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Soil Probe Only	_ _ _ _ _ _ _

2. Facility / Owner Information

Facility Name: Thiensville Hwy Dept.

Facility ID (FID or PWS): 246090900

License/Permit/Monitoring #: SP-3

Original Well Owner:

Present Well Owner:

Mailing Address of Present Owner:

City of Present Owner	State	ZIP Code

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well ☐ Water Well ☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 12/16/2019

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug ☒ Other (specify): Direct Push

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
—	—

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
—	—

Was well annular space grouted? ☐ Yes ☐ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

Material Used to Fill Well / Drillhole	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
3/8" Bentonite Chips	Surface	4	0.088 ft³	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
Dave Lemon - Moraine Env.		12/16/2019

Street or Route	Telephone Number
766 Tower Dr.	( )

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Fredonia	WI	53021	Dave Lemon	12/19/19

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

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☐ **Verification Only of Fill and Seal**

Route to DNR Bureau: ☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment ☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Ozaukee	_ _ _ _ _ _ _	

Latitude / Longitude (see instructions) _____ N _____ W — Format Code: ☐ DD ☐ DDM — Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼	¼	Section	Township	Range
SE	SE	15	09 N	21 ☒ E ☐ W

or Gov't Lot #

Well Street Address: 132 W. Freistadt Rd.

Well City, Village or Town	Well ZIP Code
Thiensville	53092

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Soil Probe Only	_ _ _ _ _ _ _

2. Facility / Owner Information

Facility Name: Thiensville Hwy Dept.

Facility ID (FID or PWS): 246090900

License/Permit/Monitoring #: SP-4

Original Well Owner

Present Well Owner

Mailing Address of Present Owner

City of Present Owner	State	ZIP Code

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well ☐ Water Well ☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 12/16/2019

If a Well Construction Report is available, please attach.

Construction Type: ☐ Drilled ☐ Driven (Sandpoint) ☐ Dug ☒ Other (specify): Direct Push

Formation Type: ☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
—	—

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
—	—

Was well annular space grouted? ☐ Yes ☐ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☐ N/A
Liner(s) perforated?	☐ Yes	☐ No	☐ N/A
Screen removed?	☐ Yes	☐ No	☐ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material: ☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped ☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials: ☐ Neat Cement Grout ☐ Concrete ☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only: ☒ Bentonite Chips ☐ Bentonite - Cement Grout ☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

Material Used to Fill Well / Drillhole	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
3/8" Bentonite Chips	Surface	4	0.088 ft3	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
Dave Lemon - Moraine Env.		12/16/2019

Street or Route	Telephone Number
766 Tower Dr.	( )

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Fredonia	WI	53021	Dave Lemon	12/19/19

DNR Use Only

Date Received	Noted By

Comments

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

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Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☑ Remediation/Redevelopment
☐ Waste Management ☐ Other:

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Ozaukee		

Latitude / Longitude (see instructions) ____ N ____ W | Format Code: ☐ DD ☐ DDM | Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼	¼	Section	Township	Range	or Gov't Lot #
SE	SE	15	09 N	21 ☒ E ☐ W	

Well Street Address: 132 W. Freistadt Rd.

Well City, Village or Town	Well ZIP Code
Thiensville	53092

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Soil Probe Only	

2. Facility / Owner Information

Facility Name: Thiensville Hwy Dept.

Facility ID (FID or PWS): 246090900

License/Permit/Monitoring #: SP-5

Original Well Owner:

Present Well Owner:

Mailing Address of Present Owner:

City of Present Owner	State	ZIP Code

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 12/16/2019

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (specify): Direct Push

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
—	—

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
—	—

Was well annular space grouted? ☐ Yes ☐ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☐ N/A
Liner(s) perforated?	☐ Yes	☐ No	☐ N/A
Screen removed?	☐ Yes	☐ No	☐ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain):

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

Material Used to Fill Well / Drillhole	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
3/8" Bentonite Chips	Surface	4	0.088 ft3	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
Dave Lennon - Moraine Env.		12/16/2019

Street or Route	Telephone Number
766 Tower Dr.	( )

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Fredonia	WI	53021	Dave Lennon	12/19/19

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

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Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☑ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Ozaukee	_ _ _ _ _ _ _	

Latitude / Longitude (see instructions) _____ N _____ W | Format Code: ☐ DD ☐ DDM | Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼	¼	Section	Township	Range
SE	SE	15	09 N	21 ☒ E ☐ W

or Gov't Lot #

Well Street Address: 132 W. Freistadt Rd.

Well City, Village or Town: Thiensville | Well ZIP Code: 53092

Subdivision Name | Lot #

Reason for Removal from Service: Soil Probe Only | WI Unique Well # of Replacement Well: _ _ _ _ _ _ _

2. Facility / Owner Information

Facility Name: Thiensville Hwy Dept.

Facility ID (FID or PWS): 246090900

License/Permit/Monitoring #: SP-6

Original Well Owner

Present Well Owner

Mailing Address of Present Owner

City of Present Owner | State | ZIP Code

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 12/16/2019

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (specify): Direct Push

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
—	—
Lower Drillhole Diameter (in.)	**Casing Depth (ft.)**
—	—

Was well annular space grouted? ☐ Yes ☐ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☐ N/A
Liner(s) perforated?	☐ Yes	☐ No	☐ N/A
Screen removed?	☐ Yes	☐ No	☐ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
3/8" Bentonite Chips	Surface	4	0.088 ft³	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
Dave Lemon - Moraine Env.		12/16/2019

Street or Route	Telephone Number
766 Tower Dr.	( )

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Fredonia	WI	53021	Dave Lemon	12/19/19

DNR Use Only

Date Received	Noted By

Comments

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Ozaukee	_ _ _ _ _	

Latitude / Longitude (see instructions) _____ N _____ W | Format Code: ☐ DD ☐ DDM | Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼	¼	Section	Township	Range	or Gov't Lot #
SE	SE	15	09 N	21 ☒ E ☐ W	

Well Street Address: 132 W. Freistadt Rd.

Well City, Village or Town	Well ZIP Code
Thiensville	53092

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Soil Probe Only	_ _ _ _ _

2. Facility / Owner Information

Facility Name: Thiensville Hwy Dept.

Facility ID (FID or PWS): 246090900

License/Permit/Monitoring #: SP-7

Original Well Owner:

Present Well Owner:

Mailing Address of Present Owner:

City of Present Owner	State	ZIP Code

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 12/16/2019

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (specify): Direct Push

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
—	—

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
—	—

Was well annular space grouted? ☐ Yes ☐ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☐ N/A
Liner(s) perforated?	☐ Yes	☐ No	☐ N/A
Screen removed?	☐ Yes	☐ No	☐ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

Material Used to Fill Well / Drillhole	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
3/8" Bentonite Chips	Surface	4	0.088 ft³	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
Dave Lemmon - Moraine Env.		12/16/2019

Street or Route	Telephone Number
766 Tower Dr.	( )

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Fredonia	WI	53021	Dave Lemmon	12/19/19

DNR Use Only

Date Received	Noted By

Comments:

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ ________

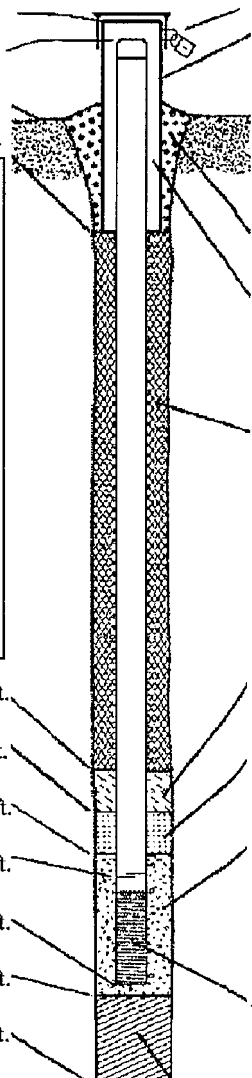
MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Small Diameter Well

Facility/Project Name: Thiensville Hwy Dept	Local Grid Location of Well ______ ft. ☐ N. ☐ S. ______ ft. ☐ E. ☐ W.	Well Name: SD/B1
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ___ ° ___ ' ___ " Long. ___ ° ___ ' ___ " or	Wis. Unique Well No. ______ / DNR Well ID No. ______
Facility ID: 246090900	St. Plane ______ ft. N, ______ ft. E. S/C/N	Date Well Installed: 12/16/2019 (m m d d y y y y)
Type of Well: Well Code ___/___	Section Location of Waste/Source: SE 1/4 of SE 1/4 of Sec. 15, T. 09 N, R. 21 ☒ E ☐ W	Well Installed By: Name (first, last) and Firm: Adam Sweet, Horizon Construction & Exploration
Distance from Waste/Source ______ ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient; s ☐ Sidegradient; d ☐ Downgradient; n ☐ Not Known / Gov. Lot Number ______	

A. Protective pipe, top elevation — ft. MSL
B. Well casing, top elevation ___ + ___ ft. MSL
C. Land surface elevation ___ 0 ft. MSL
D. Surface seal, bottom ______ ft. MSL or ___ 0 ___ ft.



12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐
13. Sieve analysis performed? ☐ Yes ☐ No
14. Drilling method used: Rotary ☐ 5 0; Hollow Stem Auger ☐ 4 1; Other ☒ — Direct Push
15. Drilling fluid used: Water ☐ 0 2; Air ☐ 0 1; Drilling Mud ☐ 0 3; None ☒ 9 9
16. Drilling additives used? ☐ Yes ☒ No
Describe —
17. Source of water (attach analysis, if required):
—

E. Bentonite seal, top ______ ft. MSL or ___ 0 ___ ft.
F. Fine sand, top ______ ft. MSL or ___ 4.0 ___ ft.
G. Filter pack, top ______ ft. MSL or ___ 4.5 ___ ft.
H. Screen joint, top ______ ft. MSL or ___ 5 ___ ft.
I. Well bottom ______ ft. MSL or ___ 10 ___ ft.
J. Filter pack, bottom ______ ft. MSL or ___ 10 ___ ft.
K. Borehole, bottom ______ ft. MSL or ___ 10 ___ ft.
L. Borehole, diameter 2.25 in.
M. O.D. well casing 1.25 in.
N. I.D. well casing 1.0 in.

1. Cap and lock? ☐ Yes ☒ No
2. Protective cover pipe:
a. Inside diameter: ___ in.
b. Length: ___ ft.
c. Material: Steel ☐ 0 4; Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ______
3. Surface seal: Bentonite ☒ 3 0; Concrete ☐ 0 1; Other ☐
4. Material between well casing and protective pipe: Bentonite ☒ 3 0; Other ☐
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 3 3
b. ______ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 3 5
c. ______ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 3 1
d. ______ % Bentonite . . . . . . Bentonite-cement grout ☐ 5 0
e. ______ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 0 1; Tremie pumped ☐ 0 2; Gravity ☒ 0 8
6. Bentonite seal: a. Bentonite granules ☐ 3 3
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☐ 3 2
c. ______ Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
a. RW Sidley #5
b. Volume added ______ ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. RW Sidley #4000
b. Volume added ______ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☐ 2 3; Flush threaded PVC schedule 80 ☐ 2 4; Other ☐
10. Screen material: SCH 40 PVC
a. Screen type: Factory cut ☒ 1 1; Continuous slot ☐ 0 1; Other ☐
b. Manufacturer Monoflex
c. Slot size: 0.010 in.
d. Slotted length: 5 ft.
11. Backfill material (below filter pack): None ☒ 1 4; Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Dave Lemon | Firm: Moraine Environmental, Inc.

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Small Diameter Well

Facility/Project Name: Thiensville Hwy Dept	Local Grid Location of Well: ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W.	Well Name: SD/B2
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No. / DNR Well ID No.
Facility ID: 246090900	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 12/16/2019 (m m d d y y y y)
Type of Well: Well Code ____/____	Section Location of Waste/Source: SE 1/4 of SE 1/4 of Sec. 15 T. 09 N, R. 21 ☒ E ☐ W	Well Installed By: Name (first, last) and Firm: Adam Sweet, Horizon Construction & Exploration
Distance from Waste/Source ____ ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number: ____

A. Protective pipe, top elevation ____ ft. MSL
B. Well casing, top elevation +___ ft. MSL
C. Land surface elevation 0 ft. MSL
D. Surface seal, bottom ____ ft. MSL or 0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☐ No

14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☐ 41 / Other ☒ Direct Push

15. Drilling fluid used: Water ☐ 02 / Air ☐ 01 / Drilling Mud ☐ 03 / None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe —

17. Source of water (attach analysis, if required):
—

E. Bentonite seal, top ____ ft. MSL or 0 ft.
F. Fine sand, top ____ ft. MSL or 4.0 ft.
G. Filter pack, top ____ ft. MSL or 4.5 ft.
H. Screen joint, top ____ ft. MSL or 5 ft.
I. Well bottom ____ ft. MSL or 10 ft.
J. Filter pack, bottom ____ ft. MSL or 10 ft.
K. Borehole, bottom ____ ft. MSL or 10 ft.
L. Borehole, diameter 2.25 in.
M. O.D. well casing 1.25 in.
N. I.D. well casing 1.0 in.

1. Cap and lock? ☐ Yes ☒ No
2. Protective cover pipe:
a. Inside diameter: ____ in.
b. Length: ____ ft.
c. Material: Steel ☐ 04 / Other ☐ ____
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____
3. Surface seal: Bentonite ☒ 30 / Concrete ☐ 01 / Other ☐ ____
4. Material between well casing and protective pipe: Bentonite ☒ 30 / Other ☐ ____
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. ____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 / Tremie pumped ☐ 02 / Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☐ 32
c. ____ Other ☐ ____
7. Fine sand material: Manufacturer, product name & mesh size
a. RW Sidley #5
b. Volume added ____ ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. RW Sidley #4000
b. Volume added ____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☐ 23 / Flush threaded PVC schedule 80 ☐ 24 / Other ☐ ____
10. Screen material: SCH 40 PVC
a. Screen type: Factory cut ☒ 11 / Continuous slot ☐ 01 / Other ☐ ____
b. Manufacturer Monoflex
c. Slot size: 0.010 in.
d. Slotted length: 5 ft.
11. Backfill material (below filter pack): None ☒ 14 / Other ☐ ____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Dave Lemon	Moraine Environmental, Inc.

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Small Diameter Well

Facility/Project Name: Trempealeau Hwy Dept	Local Grid Location of Well ☐ N. ☐ S. ____ ft. ☐ E. ☐ W. ____ ft.	Well Name: SD/B3
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No. / DNR Well ID No.
Facility ID: 246090900	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 12/16/2019 (m m d d y y y y)
Type of Well: Well Code ____/____	Section Location of Waste/Source: SE 1/4 of SE 1/4 of Sec. 15, T. 09 N, R. 21 ☒ E ☐ W	Well Installed By: Name (first, last) and Firm: Adam Sweet, Horizon Construction & Exploration
Distance from Waste/Source ____ ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number

A. Protective pipe, top elevation ____ ft. MSL

B. Well casing, top elevation +___ ft. MSL

C. Land surface elevation 0 ft. MSL

D. Surface seal, bottom ____ ft. MSL or 0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☐ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☐ 41
Direct Push — Other ☒ ___

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe —

17. Source of water (attach analysis, if required):
—

E. Bentonite seal, top ____ ft. MSL or 0 ft.

F. Fine sand, top ____ ft. MSL or 4.0 ft.

G. Filter pack, top ____ ft. MSL or 4.5 ft.

H. Screen joint, top ____ ft. MSL or 5 ft.

I. Well bottom ____ ft. MSL or 10 ft.

J. Filter pack, bottom ____ ft. MSL or 10 ft.

K. Borehole, bottom ____ ft. MSL or 10 ft.

L. Borehole, diameter 2.25 in.

M. O.D. well casing 1.25 in.

N. I.D. well casing 1.0 in.

1. Cap and lock? ☐ Yes ☒ No

2. Protective cover pipe:
a. Inside diameter: ___ in.
b. Length: ___ ft.
c. Material: Steel ☐ 04
Other ☐ ___
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____

3. Surface seal: Bentonite ☒ 30
Concrete ☐ 01
Other ☐ ___

4. Material between well casing and protective pipe:
Bentonite ☒ 30
Other ☐ ___

5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. ____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity ☒ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☐ 32
c. ____ Other ☐ ___

7. Fine sand material: Manufacturer, product name & mesh size
a. RW Sidley #5
b. Volume added ____ ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. RW Sidley #4000
b. Volume added ____ ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23
Flush threaded PVC schedule 80 ☐ 24
Other ☐ ___

10. Screen material: SCH 40 PVC
a. Screen type: Factory cut ☒ 11
Continuous slot ☐ 01
Other ☐ ___
b. Manufacturer Monoflex
c. Slot size: 0.010 in.
d. Slotted length: 5 ft.

11. Backfill material (below filter pack): None ☒ 14
Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Dave Lemcon	Moraine Environmental, Inc.

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Small Diameter Well

Facility/Project Name: Trempealeau Hwy Dept	Local Grid Location of Well: _____ ft. ☐ N. ☐ S. _____ ft. ☐ E. ☐ W.	Well Name: SD/B6
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No. / DNR Well ID No.
Facility ID: 246090900	St. Plane _____ ft. N, _____ ft. E. S/C/N	Date Well Installed: 12/16/2019 (m m d d y y y y)
Type of Well: Well Code ____/____	Section Location of Waste/Source: SE 1/4 of SE 1/4 of Sec. 15 T. 09 N, R. 21 ☒ E ☐ W	Well Installed By: Name (first, last) and Firm: Adam Sweet, Horizon Construction & Exploration
Distance from Waste/Source _____ ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number: _____

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation +___ ft. MSL
C. Land surface elevation 0 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☐ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☐ 41
Direct Push Other ☒

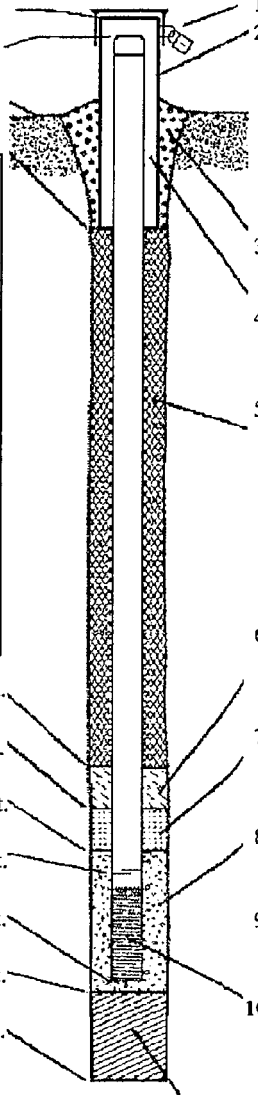
15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe —

17. Source of water (attach analysis, if required):
—

E. Bentonite seal, top _____ ft. MSL or 0 ft.
F. Fine sand, top _____ ft. MSL or 4.0 ft.
G. Filter pack, top _____ ft. MSL or 4.5 ft.
H. Screen joint, top _____ ft. MSL or 5 ft.
I. Well bottom _____ ft. MSL or 10 ft.
J. Filter pack, bottom _____ ft. MSL or 10 ft.
K. Borehole, bottom _____ ft. MSL or 10 ft.
L. Borehole, diameter 2.25 in.
M. O.D. well casing 1.25 in.
N. I.D. well casing 1.0 in.



1. Cap and lock? ☐ Yes ☒ No
2. Protective cover pipe:
a. Inside diameter: ___ in.
b. Length: ___ ft.
c. Material: Steel ☐ 04
Other ☐ ____
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____
3. Surface seal: Bentonite ☒ 30
Concrete ☐ 01
Other ☐ ____
4. Material between well casing and protective pipe:
Bentonite ☒ 30
Other ☐ ____
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. _____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☐ 32
c. _____ Other ☐ ____
7. Fine sand material: Manufacturer, product name & mesh size
a. RW Sidley #5
b. Volume added _____ ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. RW Sidley #4000
b. Volume added _____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☐ 23
Flush threaded PVC schedule 80 ☐ 24
Other ☐ ____
10. Screen material: SCH 40 PVC
a. Screen type: Factory cut ☒ 11
Continuous slot ☐ 01
Other ☐ ____
b. Manufacturer Monoflex
c. Slot size: 0.010 in.
d. Slotted length: 5 ft.
11. Backfill material (below filter pack): None ☒ 14
Other ☐ ____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Dave Lemon	Mostline Environmental, Inc.

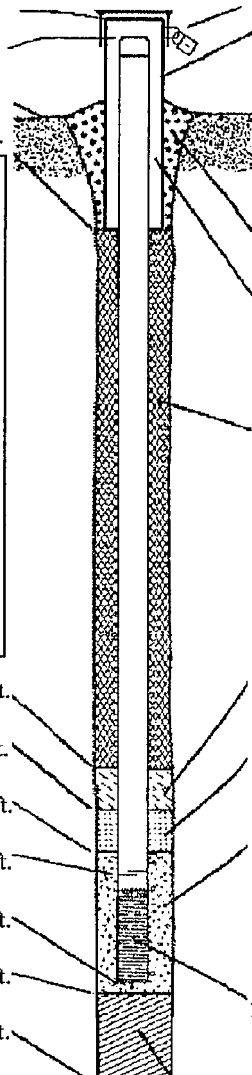
Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☒ Other ☐ ____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98 Small Diameter Well

Facility/Project Name: Threanwitle Hwy Dept	Local Grid Location of Well ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W.	Well Name: SD/B14
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No. / DNR Well ID No.
Facility ID: 246090900	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed 12/16/2019 (m m d d y y y y)
Type of Well / Well Code ___/___	Section Location of Waste/Source: SE 1/4 of SE 1/4 of Sec. 15, T. 09 N, R. 21 ☒ E ☐ W	Well Installed By: Name (first, last) and Firm: Adam Sweet, Horizon Construction & Exploration
Distance from Waste/Source ____ ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number



A. Protective pipe, top elevation ___—___ ft. MSL
B. Well casing, top elevation ___+___ ft. MSL
C. Land surface elevation ___0___ ft. MSL
D. Surface seal, bottom ______ ft. MSL or ___0___ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☐ No

14. Drilling method used: Rotary ☐ 5 0
Hollow Stem Auger ☐ 4 1
Direct Push Other ☒

15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1
Drilling Mud ☐ 0 3 None ☒ 9 9

16. Drilling additives used? ☐ Yes ☒ No

Describe —

17. Source of water (attach analysis, if required):
—

E. Bentonite seal, top ______ ft. MSL or ___0___ ft.
F. Fine sand, top ______ ft. MSL or ___4.0___ ft.
G. Filter pack, top ______ ft. MSL or ___4.5___ ft.
H. Screen joint, top ______ ft. MSL or ___5___ ft.
I. Well bottom ______ ft. MSL or ___10___ ft.
J. Filter pack, bottom ______ ft. MSL or ___10___ ft.
K. Borehole, bottom ______ ft. MSL or ___10___ ft.
L. Borehole, diameter 2.25 in.
M. O.D. well casing 1.25 in.
N. I.D. well casing 1.0 in.

1. Cap and lock? ☐ Yes ☒ No
2. Protective cover pipe:
a. Inside diameter: ___ in.
b. Length: ___ ft.
c. Material: Steel ☐ 0 4 / Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____
3. Surface seal: Bentonite ☒ 3 0 / Concrete ☐ 0 1 / Other ☐
4. Material between well casing and protective pipe: Bentonite ☒ 3 0 / Other ☐
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 3 3
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 3 5
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 3 1
d. ____ % Bentonite . . . . . . Bentonite-cement grout ☐ 5 0
e. ____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 0 1 / Tremie pumped ☐ 0 2 / Gravity ☒ 0 8
6. Bentonite seal: a. Bentonite granules ☐ 3 3
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☐ 3 2
c. ____ Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
a. RW Sidley #5
b. Volume added ____ ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. RW Sidley #4000
b. Volume added ____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☐ 2 3
Flush threaded PVC schedule 80 ☐ 2 4
Other ☐
10. Screen material: SCH 40 PVC
a. Screen type: Factory cut ☒ 1 1 / Continuous slot ☐ 0 1 / Other ☐
b. Manufacturer Monoflex
c. Slot size: 0.010 in.
d. Slotted length: 5 ft.
11. Backfill material (below filter pack): None ☒ 1 4 / Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Dave Lemon	Moraine Environmental, Inc.

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Small Diameter Well

Facility/Project Name: Thrownite Hwy Dept	Local Grid Location of Well: _____ ft. ☐ N. ☐ S. _____ ft. ☐ E. ☐ W.	Well Name: SD/B16
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No. / DNR Well ID No.
Facility ID: 246090900	St. Plane _____ ft. N, _____ ft. E. S/C/N	Date Well Installed: 12/16/2019 (m m d d y y y y)
Type of Well: Well Code ____/____	Section Location of Waste/Source: SE 1/4 of SE 1/4 of Sec. 15 T. 09 N, R. 21 ☒ E ☐ W	Well Installed By: Name (first, last) and Firm: Adam Sweet, Horizon Construction & Exploration
Distance from Waste/Source _____ ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number: _____

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation +_____ ft. MSL
C. Land surface elevation 0 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☐ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☐ 41
Direct Push — Other ☒

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe —

17. Source of water (attach analysis, if required):
—

E. Bentonite seal, top _____ ft. MSL or 0 ft.
F. Fine sand, top _____ ft. MSL or 4.0 ft.
G. Filter pack, top _____ ft. MSL or 4.5 ft.
H. Screen joint, top _____ ft. MSL or 5 ft.
I. Well bottom _____ ft. MSL or 10 ft.
J. Filter pack, bottom _____ ft. MSL or 10 ft.
K. Borehole, bottom _____ ft. MSL or 10 ft.
L. Borehole, diameter 8.25 in.
M. O.D. well casing 1.25 in.
N. I.D. well casing 1.0 in.

1. Cap and lock? ☐ Yes ☒ No
2. Protective cover pipe:
a. Inside diameter: ___ in.
b. Length: ___ ft.
c. Material: Steel ☐ 04 Other ☐ ___
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____
3. Surface seal: Bentonite ☒ 30 Concrete ☐ 01 Other ☐ ___
4. Material between well casing and protective pipe: Bentonite ☒ 30 Other ☐ ___
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. _____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 Tremie pumped ☐ 02 Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☐ 32
c. _____ Other ☐ ___
7. Fine sand material: Manufacturer, product name & mesh size
a. RW Sidley #5
b. Volume added _____ ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. RW Sidley #4000
b. Volume added _____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☐ 23 Flush threaded PVC schedule 80 ☐ 24 Other ☐ ___
10. Screen material: SCH 40 PVC
a. Screen type: Factory cut ☒ 11 Continuous slot ☐ 01 Other ☐ ___
b. Manufacturer Monoflex
c. Slot size: 0.010 in.
d. Slotted length: 5 ft.
11. Backfill material (below filter pack): None ☒ 14 Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Dave Lennon	Moraine Environmental, Inc.

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292 , 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Small Diameter Well

Facility/Project Name: Trempealeau Hwy Dept	Local Grid Location of Well: ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W.	Well Name: SD/B28
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No. / DNR Well ID No.
Facility ID: 246090900	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 12/16/2019 (m m d d y y y y)
Type of Well: Well Code ____/____	Section Location of Waste/Source: SE 1/4 of SE 1/4 of Sec. 15, T. 09 N, R. 21 ☒ E ☐ W	Well Installed By: Name (first, last) and Firm: Adam Sweet, Horizon Construction & Exploration
Distance from Waste/Source ____ ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number: ____

A. Protective pipe, top elevation ____ ft. MSL

B. Well casing, top elevation +____ ft. MSL

C. Land surface elevation 0 ft. MSL

D. Surface seal, bottom ____ ft. MSL or 0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☐ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☐ 41
Direct Push Other ☒ ____

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe —

17. Source of water (attach analysis, if required):
—

E. Bentonite seal, top ____ ft. MSL or 0 ft.

F. Fine sand, top ____ ft. MSL or 4.0 ft.

G. Filter pack, top ____ ft. MSL or 4.5 ft.

H. Screen joint, top ____ ft. MSL or 5 ft.

I. Well bottom ____ ft. MSL or 10 ft.

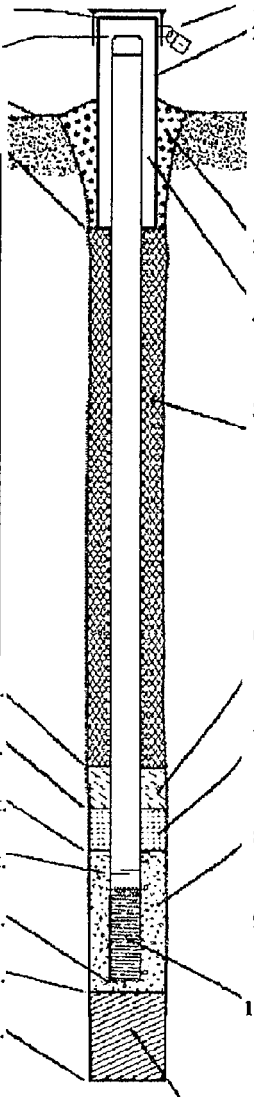
J. Filter pack, bottom ____ ft. MSL or 10 ft.

K. Borehole, bottom ____ ft. MSL or 10 ft.

L. Borehole, diameter 2.25 in.

M. O.D. well casing 1.25 in.

N. I.D. well casing 1.0 in.



1. Cap and lock? ☐ Yes ☒ No
2. Protective cover pipe:
a. Inside diameter: ____ in.
b. Length: ____ ft.
c. Material: Steel ☐ 04 Other ☐ ____
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____
3. Surface seal: Bentonite ☒ 30 Concrete ☐ 01 Other ☐ ____
4. Material between well casing and protective pipe: Bentonite ☒ 30 Other ☐ ____
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. ____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 Tremie pumped ☐ 02 Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☐ 32
c. ____ Other ☐ ____
7. Fine sand material: Manufacturer, product name & mesh size
a. RW Sidley #5
b. Volume added ____ ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. RW Sidley #4000
b. Volume added ____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☐ 23 Flush threaded PVC schedule 80 ☐ 24 Other ☐ ____
10. Screen material: SCH 40 PVC
a. Screen type: Factory cut ☒ 11 Continuous slot ☐ 01 Other ☐ ____
b. Manufacturer Monoflex
c. Slot size: 0.010 in.
d. Slotted length: 5 ft.
11. Backfill material (below filter pack): None ☒ 14 Other ☐ ____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Dave Lawson Firm: Mortine Environmental, Inc.

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292 , 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

December 24, 2019

Tom Sweet
Moraine Environmental, Inc.
766 Tower Drive
Fredonia, WI 53021

RE: Project: 5323 THIENSVILLE HIGHWAY DEPT
Pace Project No.: 40200968

Dear Tom Sweet:
Enclosed are the analytical results for sample(s) received by the laboratory on December 18, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Steven Mleczko
steve.mleczko@pacelabs.com
(920)469-2436
Project Manager

Enclosures

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 5323 THIENSVILLE HIGHWAY DEPT
Pace Project No.: 40200968

Pace Analytical Services Green Bay
1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 5323 THIENSVILLE HIGHWAY DEPT
Pace Project No.: 40200968

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40200968001	**SP-1 (2-4)**	Solid	12/16/19 00:00	12/18/19 09:35
40200968002	**SP-2 (2-4)**	Solid	12/16/19 00:00	12/18/19 09:35
40200968003	**SP-3 (2-4)**	Solid	12/16/19 00:00	12/18/19 09:35
40200968004	**SP-4 (2-4)**	Solid	12/16/19 00:00	12/18/19 09:35
40200968005	**SP-5 (2-4)**	Solid	12/16/19 00:00	12/18/19 09:35
40200968006	**SP-6 (2-4)**	Solid	12/16/19 00:00	12/18/19 09:35
40200968007	**SP-7 (2-4)**	Solid	12/16/19 00:00	12/18/19 09:35

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 5323 THIENSVILLE HIGHWAY DEPT
Pace Project No.: 40200968

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40200968001	**SP-1 (2-4)**	EPA 8270 by SIM	TPO	20	PASI-G
		ASTM D2974-87	QJR	1	PASI-G
40200968002	**SP-2 (2-4)**	EPA 8270 by SIM	TPO	20	PASI-G
		ASTM D2974-87	QJR	1	PASI-G
40200968003	**SP-3 (2-4)**	EPA 8270 by SIM	TPO	20	PASI-G
		ASTM D2974-87	SKW	1	PASI-G
40200968004	**SP-4 (2-4)**	EPA 8270 by SIM	TPO	20	PASI-G
		ASTM D2974-87	SKW	1	PASI-G
40200968005	**SP-5 (2-4)**	EPA 8270 by SIM	TPO	20	PASI-G
		ASTM D2974-87	SKW	1	PASI-G
40200968006	**SP-6 (2-4)**	EPA 8270 by SIM	TPO	20	PASI-G
		ASTM D2974-87	SKW	1	PASI-G
40200968007	**SP-7 (2-4)**	EPA 8270 by SIM	TPO	20	PASI-G
		ASTM D2974-87	SKW	1	PASI-G

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SUMMARY OF DETECTION

Project: 5323 THIENSVILLE HIGHWAY DEPT
Pace Project No.: 40200968

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40200968001	**SP-1 (2-4)**					
EPA 8270 by SIM	Acenaphthylene	10.5J	ug/kg	20.0	12/20/19 19:51	
EPA 8270 by SIM	Anthracene	8.4J	ug/kg	20.0	12/20/19 19:51	
EPA 8270 by SIM	Benzo(a)anthracene	28.0	ug/kg	20.0	12/20/19 19:51	
EPA 8270 by SIM	Benzo(a)pyrene	28.7	ug/kg	20.0	12/20/19 19:51	
EPA 8270 by SIM	Benzo(b)fluoranthene	45.3	ug/kg	20.0	12/20/19 19:51	
EPA 8270 by SIM	Benzo(g,h,i)perylene	19.5J	ug/kg	20.0	12/20/19 19:51	
EPA 8270 by SIM	Benzo(k)fluoranthene	22.2	ug/kg	20.0	12/20/19 19:51	
EPA 8270 by SIM	Chrysene	41.7	ug/kg	20.0	12/20/19 19:51	
EPA 8270 by SIM	Dibenz(a,h)anthracene	6.5J	ug/kg	20.0	12/20/19 19:51	
EPA 8270 by SIM	Fluoranthene	55.3	ug/kg	20.0	12/20/19 19:51	
EPA 8270 by SIM	Indeno(1,2,3-cd)pyrene	17.2J	ug/kg	20.0	12/20/19 19:51	
EPA 8270 by SIM	Phenanthrene	9.9J	ug/kg	20.0	12/20/19 19:51	
EPA 8270 by SIM	Pyrene	50.6	ug/kg	20.0	12/20/19 19:51	
ASTM D2974-87	Percent Moisture	16.7	%	0.10	12/20/19 15:40	
40200968002	**SP-2 (2-4)**					
EPA 8270 by SIM	Acenaphthene	3.9J	ug/kg	19.6	12/21/19 01:36	
EPA 8270 by SIM	Acenaphthylene	55.8	ug/kg	19.6	12/21/19 01:36	
EPA 8270 by SIM	Anthracene	61.5	ug/kg	19.6	12/21/19 01:36	
EPA 8270 by SIM	Benzo(a)anthracene	164	ug/kg	19.6	12/21/19 01:36	
EPA 8270 by SIM	Benzo(a)pyrene	219	ug/kg	19.6	12/21/19 01:36	
EPA 8270 by SIM	Benzo(b)fluoranthene	274	ug/kg	19.6	12/21/19 01:36	
EPA 8270 by SIM	Benzo(g,h,i)perylene	157	ug/kg	19.6	12/21/19 01:36	
EPA 8270 by SIM	Benzo(k)fluoranthene	110	ug/kg	19.6	12/21/19 01:36	
EPA 8270 by SIM	Chrysene	185	ug/kg	19.6	12/21/19 01:36	
EPA 8270 by SIM	Dibenz(a,h)anthracene	55.3	ug/kg	19.6	12/21/19 01:36	
EPA 8270 by SIM	Fluoranthene	241	ug/kg	19.6	12/21/19 01:36	
EPA 8270 by SIM	Fluorene	6.1J	ug/kg	19.6	12/21/19 01:36	
EPA 8270 by SIM	Indeno(1,2,3-cd)pyrene	126	ug/kg	19.6	12/21/19 01:36	
EPA 8270 by SIM	1-Methylnaphthalene	3.2J	ug/kg	19.6	12/21/19 01:36	
EPA 8270 by SIM	2-Methylnaphthalene	7.4J	ug/kg	19.6	12/21/19 01:36	
EPA 8270 by SIM	Naphthalene	14.3J	ug/kg	19.6	12/21/19 01:36	
EPA 8270 by SIM	Phenanthrene	77.3	ug/kg	19.6	12/21/19 01:36	
EPA 8270 by SIM	Pyrene	207	ug/kg	19.6	12/21/19 01:36	
ASTM D2974-87	Percent Moisture	14.7	%	0.10	12/20/19 15:41	
40200968003	**SP-3 (2-4)**					
EPA 8270 by SIM	Acenaphthylene	9.3J	ug/kg	17.7	12/21/19 01:18	
EPA 8270 by SIM	Anthracene	10.3J	ug/kg	17.7	12/21/19 01:18	
EPA 8270 by SIM	Benzo(a)anthracene	25.6	ug/kg	17.7	12/21/19 01:18	
EPA 8270 by SIM	Benzo(a)pyrene	35.3	ug/kg	17.7	12/21/19 01:18	
EPA 8270 by SIM	Benzo(b)fluoranthene	50.1	ug/kg	17.7	12/21/19 01:18	
EPA 8270 by SIM	Benzo(g,h,i)perylene	27.2	ug/kg	17.7	12/21/19 01:18	
EPA 8270 by SIM	Benzo(k)fluoranthene	22.2	ug/kg	17.7	12/21/19 01:18	
EPA 8270 by SIM	Chrysene	33.4	ug/kg	17.7	12/21/19 01:18	
EPA 8270 by SIM	Dibenz(a,h)anthracene	8.3J	ug/kg	17.7	12/21/19 01:18	
EPA 8270 by SIM	Fluoranthene	47.6	ug/kg	17.7	12/21/19 01:18	
EPA 8270 by SIM	Indeno(1,2,3-cd)pyrene	22.2	ug/kg	17.7	12/21/19 01:18	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
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SUMMARY OF DETECTION

Project: 5323 THIENSVILLE HIGHWAY DEPT
Pace Project No.: 40200968

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40200968003	**SP-3 (2-4)**					
EPA 8270 by SIM	Phenanthrene	19.2	ug/kg	17.7	12/21/19 01:18	
EPA 8270 by SIM	Pyrene	38.6	ug/kg	17.7	12/21/19 01:18	
ASTM D2974-87	Percent Moisture	5.6	%	0.10	12/23/19 15:55	
40200968004	**SP-4 (2-4)**					
EPA 8270 by SIM	Acenaphthene	74.5	ug/kg	62.5	12/20/19 23:17	
EPA 8270 by SIM	Acenaphthylene	191	ug/kg	62.5	12/20/19 23:17	
EPA 8270 by SIM	Anthracene	290	ug/kg	62.5	12/20/19 23:17	
EPA 8270 by SIM	Benzo(a)anthracene	832	ug/kg	62.5	12/20/19 23:17	
EPA 8270 by SIM	Benzo(a)pyrene	1320	ug/kg	62.5	12/20/19 23:17	
EPA 8270 by SIM	Benzo(b)fluoranthene	1950	ug/kg	62.5	12/20/19 23:17	
EPA 8270 by SIM	Benzo(g,h,i)perylene	923	ug/kg	62.5	12/20/19 23:17	
EPA 8270 by SIM	Benzo(k)fluoranthene	616	ug/kg	62.5	12/20/19 23:17	
EPA 8270 by SIM	Chrysene	1120	ug/kg	62.5	12/20/19 23:17	
EPA 8270 by SIM	Dibenz(a,h)anthracene	264	ug/kg	62.5	12/20/19 23:17	
EPA 8270 by SIM	Fluoranthene	1900	ug/kg	62.5	12/20/19 23:17	
EPA 8270 by SIM	Fluorene	108	ug/kg	62.5	12/20/19 23:17	
EPA 8270 by SIM	Indeno(1,2,3-cd)pyrene	776	ug/kg	62.5	12/20/19 23:17	
EPA 8270 by SIM	1-Methylnaphthalene	34.2J	ug/kg	62.5	12/20/19 23:17	
EPA 8270 by SIM	2-Methylnaphthalene	45.2J	ug/kg	62.5	12/20/19 23:17	
EPA 8270 by SIM	Naphthalene	101	ug/kg	62.5	12/20/19 23:17	
EPA 8270 by SIM	Phenanthrene	926	ug/kg	62.5	12/20/19 23:17	
EPA 8270 by SIM	Pyrene	1420	ug/kg	62.5	12/20/19 23:17	
ASTM D2974-87	Percent Moisture	19.8	%	0.10	12/23/19 15:55	
40200968005	**SP-5 (2-4)**					
ASTM D2974-87	Percent Moisture	4.8	%	0.10	12/23/19 15:55	
40200968006	**SP-6 (2-4)**					
EPA 8270 by SIM	Acenaphthene	141	ug/kg	71.9	12/20/19 23:35	
EPA 8270 by SIM	Acenaphthylene	79.0	ug/kg	71.9	12/20/19 23:35	
EPA 8270 by SIM	Anthracene	345	ug/kg	71.9	12/20/19 23:35	
EPA 8270 by SIM	Benzo(a)anthracene	865	ug/kg	71.9	12/20/19 23:35	
EPA 8270 by SIM	Benzo(a)pyrene	1020	ug/kg	71.9	12/20/19 23:35	
EPA 8270 by SIM	Benzo(b)fluoranthene	1520	ug/kg	71.9	12/20/19 23:35	
EPA 8270 by SIM	Benzo(g,h,i)perylene	715	ug/kg	71.9	12/20/19 23:35	
EPA 8270 by SIM	Benzo(k)fluoranthene	508	ug/kg	71.9	12/20/19 23:35	
EPA 8270 by SIM	Chrysene	1080	ug/kg	71.9	12/20/19 23:35	
EPA 8270 by SIM	Dibenz(a,h)anthracene	199	ug/kg	71.9	12/20/19 23:35	
EPA 8270 by SIM	Fluoranthene	2320	ug/kg	71.9	12/20/19 23:35	
EPA 8270 by SIM	Fluorene	178	ug/kg	71.9	12/20/19 23:35	
EPA 8270 by SIM	Indeno(1,2,3-cd)pyrene	596	ug/kg	71.9	12/20/19 23:35	
EPA 8270 by SIM	1-Methylnaphthalene	27.5J	ug/kg	71.9	12/20/19 23:35	
EPA 8270 by SIM	2-Methylnaphthalene	29.7J	ug/kg	71.9	12/20/19 23:35	
EPA 8270 by SIM	Naphthalene	98.9	ug/kg	71.9	12/20/19 23:35	
EPA 8270 by SIM	Phenanthrene	1400	ug/kg	71.9	12/20/19 23:35	
EPA 8270 by SIM	Pyrene	1590	ug/kg	71.9	12/20/19 23:35	
ASTM D2974-87	Percent Moisture	7.1	%	0.10	12/23/19 15:55	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 5323 THIENSVILLE HIGHWAY DEPT
Pace Project No.: 40200968

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40200968007	**SP-7 (2-4)**					
EPA 8270 by SIM	Acenaphthene	45.2J	ug/kg	57.0	12/20/19 23:52	
EPA 8270 by SIM	Acenaphthylene	143	ug/kg	57.0	12/20/19 23:52	
EPA 8270 by SIM	Anthracene	207	ug/kg	57.0	12/20/19 23:52	
EPA 8270 by SIM	Benzo(a)anthracene	540	ug/kg	57.0	12/20/19 23:52	
EPA 8270 by SIM	Benzo(a)pyrene	652	ug/kg	57.0	12/20/19 23:52	
EPA 8270 by SIM	Benzo(b)fluoranthene	839	ug/kg	57.0	12/20/19 23:52	
EPA 8270 by SIM	Benzo(g,h,i)perylene	467	ug/kg	57.0	12/20/19 23:52	
EPA 8270 by SIM	Benzo(k)fluoranthene	358	ug/kg	57.0	12/20/19 23:52	
EPA 8270 by SIM	Chrysene	640	ug/kg	57.0	12/20/19 23:52	
EPA 8270 by SIM	Dibenz(a,h)anthracene	126	ug/kg	57.0	12/20/19 23:52	
EPA 8270 by SIM	Fluoranthene	1290	ug/kg	57.0	12/20/19 23:52	
EPA 8270 by SIM	Fluorene	90.5	ug/kg	57.0	12/20/19 23:52	
EPA 8270 by SIM	Indeno(1,2,3-cd)pyrene	383	ug/kg	57.0	12/20/19 23:52	
EPA 8270 by SIM	2-Methylnaphthalene	16.2J	ug/kg	57.0	12/20/19 23:52	
EPA 8270 by SIM	Naphthalene	24.4J	ug/kg	57.0	12/20/19 23:52	
EPA 8270 by SIM	Phenanthrene	688	ug/kg	57.0	12/20/19 23:52	
EPA 8270 by SIM	Pyrene	951	ug/kg	57.0	12/20/19 23:52	
ASTM D2974-87	Percent Moisture	12.0	%	0.10	12/23/19 15:56	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 5323 THIENSVILLE HIGHWAY DEPT
Pace Project No.: 40200968

Sample: SP-1 (2-4) **Lab ID: 40200968001** Collected: 12/16/19 00:00 Received: 12/18/19 09:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**<2.6**	ug/kg	20.0	2.6	1	12/19/19 09:17	12/20/19 19:51	83-32-9	
Acenaphthylene	**10.5J**	ug/kg	20.0	2.5	1	12/19/19 09:17	12/20/19 19:51	208-96-8	
Anthracene	**8.4J**	ug/kg	20.0	2.5	1	12/19/19 09:17	12/20/19 19:51	120-12-7	
Benzo(a)anthracene	**28.0**	ug/kg	20.0	2.6	1	12/19/19 09:17	12/20/19 19:51	56-55-3	
Benzo(a)pyrene	**28.7**	ug/kg	20.0	2.3	1	12/19/19 09:17	12/20/19 19:51	50-32-8	
Benzo(b)fluoranthene	**45.3**	ug/kg	20.0	2.8	1	12/19/19 09:17	12/20/19 19:51	205-99-2	
Benzo(g,h,i)perylene	**19.5J**	ug/kg	20.0	3.5	1	12/19/19 09:17	12/20/19 19:51	191-24-2	
Benzo(k)fluoranthene	**22.2**	ug/kg	20.0	2.6	1	12/19/19 09:17	12/20/19 19:51	207-08-9	
Chrysene	**41.7**	ug/kg	20.0	3.8	1	12/19/19 09:17	12/20/19 19:51	218-01-9	
Dibenz(a,h)anthracene	**6.5J**	ug/kg	20.0	2.8	1	12/19/19 09:17	12/20/19 19:51	53-70-3	
Fluoranthene	**55.3**	ug/kg	20.0	2.4	1	12/19/19 09:17	12/20/19 19:51	206-44-0	
Fluorene	**<2.4**	ug/kg	20.0	2.4	1	12/19/19 09:17	12/20/19 19:51	86-73-7	
Indeno(1,2,3-cd)pyrene	**17.2J**	ug/kg	20.0	4.2	1	12/19/19 09:17	12/20/19 19:51	193-39-5	
1-Methylnaphthalene	**<2.9**	ug/kg	20.0	2.9	1	12/19/19 09:17	12/20/19 19:51	90-12-0	
2-Methylnaphthalene	**<2.9**	ug/kg	20.0	2.9	1	12/19/19 09:17	12/20/19 19:51	91-57-6	
Naphthalene	**<2.0**	ug/kg	20.0	2.0	1	12/19/19 09:17	12/20/19 19:51	91-20-3	
Phenanthrene	**9.9J**	ug/kg	20.0	2.3	1	12/19/19 09:17	12/20/19 19:51	85-01-8	
Pyrene	**50.6**	ug/kg	20.0	2.9	1	12/19/19 09:17	12/20/19 19:51	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	63	%	28-99		1	12/19/19 09:17	12/20/19 19:51	321-60-8	
Terphenyl-d14 (S)	66	%	10-107		1	12/19/19 09:17	12/20/19 19:51	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**16.7**	%	0.10	0.10	1		12/20/19 15:40		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 5323 THIENSVILLE HIGHWAY DEPT
Pace Project No.: 40200968

Sample: SP-2 (2-4) **Lab ID: 40200968002** Collected: 12/16/19 00:00 Received: 12/18/19 09:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**3.9J**	ug/kg	19.6	2.5	1	12/19/19 09:17	12/21/19 01:36	83-32-9	
Acenaphthylene	**55.8**	ug/kg	19.6	2.5	1	12/19/19 09:17	12/21/19 01:36	208-96-8	
Anthracene	**61.5**	ug/kg	19.6	2.4	1	12/19/19 09:17	12/21/19 01:36	120-12-7	
Benzo(a)anthracene	**164**	ug/kg	19.6	2.5	1	12/19/19 09:17	12/21/19 01:36	56-55-3	
Benzo(a)pyrene	**219**	ug/kg	19.6	2.2	1	12/19/19 09:17	12/21/19 01:36	50-32-8	
Benzo(b)fluoranthene	**274**	ug/kg	19.6	2.7	1	12/19/19 09:17	12/21/19 01:36	205-99-2	
Benzo(g,h,i)perylene	**157**	ug/kg	19.6	3.4	1	12/19/19 09:17	12/21/19 01:36	191-24-2	
Benzo(k)fluoranthene	**110**	ug/kg	19.6	2.5	1	12/19/19 09:17	12/21/19 01:36	207-08-9	
Chrysene	**185**	ug/kg	19.6	3.7	1	12/19/19 09:17	12/21/19 01:36	218-01-9	
Dibenz(a,h)anthracene	**55.3**	ug/kg	19.6	2.7	1	12/19/19 09:17	12/21/19 01:36	53-70-3	
Fluoranthene	**241**	ug/kg	19.6	2.3	1	12/19/19 09:17	12/21/19 01:36	206-44-0	
Fluorene	**6.1J**	ug/kg	19.6	2.3	1	12/19/19 09:17	12/21/19 01:36	86-73-7	
Indeno(1,2,3-cd)pyrene	**126**	ug/kg	19.6	4.1	1	12/19/19 09:17	12/21/19 01:36	193-39-5	
1-Methylnaphthalene	**3.2J**	ug/kg	19.6	2.9	1	12/19/19 09:17	12/21/19 01:36	90-12-0	
2-Methylnaphthalene	**7.4J**	ug/kg	19.6	2.9	1	12/19/19 09:17	12/21/19 01:36	91-57-6	
Naphthalene	**14.3J**	ug/kg	19.6	1.9	1	12/19/19 09:17	12/21/19 01:36	91-20-3	
Phenanthrene	**77.3**	ug/kg	19.6	2.2	1	12/19/19 09:17	12/21/19 01:36	85-01-8	
Pyrene	**207**	ug/kg	19.6	2.9	1	12/19/19 09:17	12/21/19 01:36	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	84	%	28-99		1	12/19/19 09:17	12/21/19 01:36	321-60-8	
Terphenyl-d14 (S)	77	%	10-107		1	12/19/19 09:17	12/21/19 01:36	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**14.7**	%	0.10	0.10	1		12/20/19 15:41		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 5323 THIENSVILLE HIGHWAY DEPT
Pace Project No.: 40200968

Sample: SP-3 (2-4) **Lab ID: 40200968003** Collected: 12/16/19 00:00 Received: 12/18/19 09:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**<2.3**	ug/kg	17.7	2.3	1	12/19/19 09:17	12/21/19 01:18	83-32-9	
Acenaphthylene	**9.3J**	ug/kg	17.7	2.2	1	12/19/19 09:17	12/21/19 01:18	208-96-8	
Anthracene	**10.3J**	ug/kg	17.7	2.2	1	12/19/19 09:17	12/21/19 01:18	120-12-7	
Benzo(a)anthracene	**25.6**	ug/kg	17.7	2.3	1	12/19/19 09:17	12/21/19 01:18	56-55-3	
Benzo(a)pyrene	**35.3**	ug/kg	17.7	2.0	1	12/19/19 09:17	12/21/19 01:18	50-32-8	
Benzo(b)fluoranthene	**50.1**	ug/kg	17.7	2.5	1	12/19/19 09:17	12/21/19 01:18	205-99-2	
Benzo(g,h,i)perylene	**27.2**	ug/kg	17.7	3.1	1	12/19/19 09:17	12/21/19 01:18	191-24-2	
Benzo(k)fluoranthene	**22.2**	ug/kg	17.7	2.3	1	12/19/19 09:17	12/21/19 01:18	207-08-9	
Chrysene	**33.4**	ug/kg	17.7	3.3	1	12/19/19 09:17	12/21/19 01:18	218-01-9	
Dibenz(a,h)anthracene	**8.3J**	ug/kg	17.7	2.4	1	12/19/19 09:17	12/21/19 01:18	53-70-3	
Fluoranthene	**47.6**	ug/kg	17.7	2.1	1	12/19/19 09:17	12/21/19 01:18	206-44-0	
Fluorene	**<2.1**	ug/kg	17.7	2.1	1	12/19/19 09:17	12/21/19 01:18	86-73-7	
Indeno(1,2,3-cd)pyrene	**22.2**	ug/kg	17.7	3.7	1	12/19/19 09:17	12/21/19 01:18	193-39-5	
1-Methylnaphthalene	**<2.6**	ug/kg	17.7	2.6	1	12/19/19 09:17	12/21/19 01:18	90-12-0	
2-Methylnaphthalene	**<2.6**	ug/kg	17.7	2.6	1	12/19/19 09:17	12/21/19 01:18	91-57-6	
Naphthalene	**<1.7**	ug/kg	17.7	1.7	1	12/19/19 09:17	12/21/19 01:18	91-20-3	
Phenanthrene	**19.2**	ug/kg	17.7	2.0	1	12/19/19 09:17	12/21/19 01:18	85-01-8	
Pyrene	**38.6**	ug/kg	17.7	2.6	1	12/19/19 09:17	12/21/19 01:18	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	87	%	28-99		1	12/19/19 09:17	12/21/19 01:18	321-60-8	
Terphenyl-d14 (S)	80	%	10-107		1	12/19/19 09:17	12/21/19 01:18	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**5.6**	%	0.10	0.10	1		12/23/19 15:55		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 5323 THIENSVILLE HIGHWAY DEPT
Pace Project No.: 40200968

Sample: SP-4 (2-4) **Lab ID: 40200968004** Collected: 12/16/19 00:00 Received: 12/18/19 09:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**74.5**	ug/kg	62.5	8.1	3	12/19/19 09:17	12/20/19 23:17	83-32-9	
Acenaphthylene	**191**	ug/kg	62.5	7.9	3	12/19/19 09:17	12/20/19 23:17	208-96-8	
Anthracene	**290**	ug/kg	62.5	7.8	3	12/19/19 09:17	12/20/19 23:17	120-12-7	
Benzo(a)anthracene	**832**	ug/kg	62.5	8.1	3	12/19/19 09:17	12/20/19 23:17	56-55-3	
Benzo(a)pyrene	**1320**	ug/kg	62.5	7.1	3	12/19/19 09:17	12/20/19 23:17	50-32-8	
Benzo(b)fluoranthene	**1950**	ug/kg	62.5	8.7	3	12/19/19 09:17	12/20/19 23:17	205-99-2	
Benzo(g,h,i)perylene	**923**	ug/kg	62.5	11.0	3	12/19/19 09:17	12/20/19 23:17	191-24-2	
Benzo(k)fluoranthene	**616**	ug/kg	62.5	8.0	3	12/19/19 09:17	12/20/19 23:17	207-08-9	
Chrysene	**1120**	ug/kg	62.5	11.8	3	12/19/19 09:17	12/20/19 23:17	218-01-9	
Dibenz(a,h)anthracene	**264**	ug/kg	62.5	8.6	3	12/19/19 09:17	12/20/19 23:17	53-70-3	
Fluoranthene	**1900**	ug/kg	62.5	7.4	3	12/19/19 09:17	12/20/19 23:17	206-44-0	
Fluorene	**108**	ug/kg	62.5	7.5	3	12/19/19 09:17	12/20/19 23:17	86-73-7	
Indeno(1,2,3-cd)pyrene	**776**	ug/kg	62.5	13.0	3	12/19/19 09:17	12/20/19 23:17	193-39-5	
1-Methylnaphthalene	**34.2J**	ug/kg	62.5	9.1	3	12/19/19 09:17	12/20/19 23:17	90-12-0	
2-Methylnaphthalene	**45.2J**	ug/kg	62.5	9.1	3	12/19/19 09:17	12/20/19 23:17	91-57-6	
Naphthalene	**101**	ug/kg	62.5	6.1	3	12/19/19 09:17	12/20/19 23:17	91-20-3	
Phenanthrene	**926**	ug/kg	62.5	7.2	3	12/19/19 09:17	12/20/19 23:17	85-01-8	
Pyrene	**1420**	ug/kg	62.5	9.2	3	12/19/19 09:17	12/20/19 23:17	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	55	%	28-99		3	12/19/19 09:17	12/20/19 23:17	321-60-8	
Terphenyl-d14 (S)	49	%	10-107		3	12/19/19 09:17	12/20/19 23:17	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**19.8**	%	0.10	0.10	1		12/23/19 15:55		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 5323 THIENSVILLE HIGHWAY DEPT
Pace Project No.: 40200968

Sample: SP-5 (2-4) **Lab ID: 40200968005** Collected: 12/16/19 00:00 Received: 12/18/19 09:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**<2.3**	ug/kg	17.5	2.3	1	12/19/19 09:17	12/20/19 20:08	83-32-9	
Acenaphthylene	**<2.2**	ug/kg	17.5	2.2	1	12/19/19 09:17	12/20/19 20:08	208-96-8	
Anthracene	**<2.2**	ug/kg	17.5	2.2	1	12/19/19 09:17	12/20/19 20:08	120-12-7	
Benzo(a)anthracene	**<2.3**	ug/kg	17.5	2.3	1	12/19/19 09:17	12/20/19 20:08	56-55-3	
Benzo(a)pyrene	**<2.0**	ug/kg	17.5	2.0	1	12/19/19 09:17	12/20/19 20:08	50-32-8	
Benzo(b)fluoranthene	**<2.4**	ug/kg	17.5	2.4	1	12/19/19 09:17	12/20/19 20:08	205-99-2	
Benzo(g,h,i)perylene	**<3.1**	ug/kg	17.5	3.1	1	12/19/19 09:17	12/20/19 20:08	191-24-2	
Benzo(k)fluoranthene	**<2.2**	ug/kg	17.5	2.2	1	12/19/19 09:17	12/20/19 20:08	207-08-9	
Chrysene	**<3.3**	ug/kg	17.5	3.3	1	12/19/19 09:17	12/20/19 20:08	218-01-9	
Dibenz(a,h)anthracene	**<2.4**	ug/kg	17.5	2.4	1	12/19/19 09:17	12/20/19 20:08	53-70-3	
Fluoranthene	**<2.1**	ug/kg	17.5	2.1	1	12/19/19 09:17	12/20/19 20:08	206-44-0	
Fluorene	**<2.1**	ug/kg	17.5	2.1	1	12/19/19 09:17	12/20/19 20:08	86-73-7	
Indeno(1,2,3-cd)pyrene	**<3.7**	ug/kg	17.5	3.7	1	12/19/19 09:17	12/20/19 20:08	193-39-5	
1-Methylnaphthalene	**<2.6**	ug/kg	17.5	2.6	1	12/19/19 09:17	12/20/19 20:08	90-12-0	
2-Methylnaphthalene	**<2.6**	ug/kg	17.5	2.6	1	12/19/19 09:17	12/20/19 20:08	91-57-6	
Naphthalene	**<1.7**	ug/kg	17.5	1.7	1	12/19/19 09:17	12/20/19 20:08	91-20-3	
Phenanthrene	**<2.0**	ug/kg	17.5	2.0	1	12/19/19 09:17	12/20/19 20:08	85-01-8	
Pyrene	**<2.6**	ug/kg	17.5	2.6	1	12/19/19 09:17	12/20/19 20:08	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	61	%	28-99		1	12/19/19 09:17	12/20/19 20:08	321-60-8	
Terphenyl-d14 (S)	78	%	10-107		1	12/19/19 09:17	12/20/19 20:08	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**4.8**	%	0.10	0.10	1		12/23/19 15:55		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 5323 THIENSVILLE HIGHWAY DEPT
Pace Project No.: 40200968

Sample: SP-6 (2-4) **Lab ID: 40200968006** Collected: 12/16/19 00:00 Received: 12/18/19 09:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**141**	ug/kg	71.9	9.3	4	12/19/19 09:17	12/20/19 23:35	83-32-9	
Acenaphthylene	**79.0**	ug/kg	71.9	9.1	4	12/19/19 09:17	12/20/19 23:35	208-96-8	
Anthracene	**345**	ug/kg	71.9	8.9	4	12/19/19 09:17	12/20/19 23:35	120-12-7	
Benzo(a)anthracene	**865**	ug/kg	71.9	9.3	4	12/19/19 09:17	12/20/19 23:35	56-55-3	
Benzo(a)pyrene	**1020**	ug/kg	71.9	8.2	4	12/19/19 09:17	12/20/19 23:35	50-32-8	
Benzo(b)fluoranthene	**1520**	ug/kg	71.9	10	4	12/19/19 09:17	12/20/19 23:35	205-99-2	
Benzo(g,h,i)perylene	**715**	ug/kg	71.9	12.6	4	12/19/19 09:17	12/20/19 23:35	191-24-2	
Benzo(k)fluoranthene	**508**	ug/kg	71.9	9.2	4	12/19/19 09:17	12/20/19 23:35	207-08-9	
Chrysene	**1080**	ug/kg	71.9	13.6	4	12/19/19 09:17	12/20/19 23:35	218-01-9	
Dibenz(a,h)anthracene	**199**	ug/kg	71.9	10	4	12/19/19 09:17	12/20/19 23:35	53-70-3	
Fluoranthene	**2320**	ug/kg	71.9	8.5	4	12/19/19 09:17	12/20/19 23:35	206-44-0	
Fluorene	**178**	ug/kg	71.9	8.6	4	12/19/19 09:17	12/20/19 23:35	86-73-7	
Indeno(1,2,3-cd)pyrene	**596**	ug/kg	71.9	15.0	4	12/19/19 09:17	12/20/19 23:35	193-39-5	
1-Methylnaphthalene	**27.5J**	ug/kg	71.9	10.5	4	12/19/19 09:17	12/20/19 23:35	90-12-0	
2-Methylnaphthalene	**29.7J**	ug/kg	71.9	10.5	4	12/19/19 09:17	12/20/19 23:35	91-57-6	
Naphthalene	**98.9**	ug/kg	71.9	7.0	4	12/19/19 09:17	12/20/19 23:35	91-20-3	
Phenanthrene	**1400**	ug/kg	71.9	8.2	4	12/19/19 09:17	12/20/19 23:35	85-01-8	
Pyrene	**1590**	ug/kg	71.9	10.6	4	12/19/19 09:17	12/20/19 23:35	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	66	%	28-99		4	12/19/19 09:17	12/20/19 23:35	321-60-8	
Terphenyl-d14 (S)	55	%	10-107		4	12/19/19 09:17	12/20/19 23:35	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**7.1**	%	0.10	0.10	1		12/23/19 15:55		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 5323 THIENSVILLE HIGHWAY DEPT
Pace Project No.: 40200968

Sample: SP-7 (2-4) **Lab ID: 40200968007** Collected: 12/16/19 00:00 Received: 12/18/19 09:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**45.2J**	ug/kg	57.0	7.4	3	12/19/19 09:17	12/20/19 23:52	83-32-9	
Acenaphthylene	**143**	ug/kg	57.0	7.2	3	12/19/19 09:17	12/20/19 23:52	208-96-8	
Anthracene	**207**	ug/kg	57.0	7.1	3	12/19/19 09:17	12/20/19 23:52	120-12-7	
Benzo(a)anthracene	**540**	ug/kg	57.0	7.4	3	12/19/19 09:17	12/20/19 23:52	56-55-3	
Benzo(a)pyrene	**652**	ug/kg	57.0	6.5	3	12/19/19 09:17	12/20/19 23:52	50-32-8	
Benzo(b)fluoranthene	**839**	ug/kg	57.0	7.9	3	12/19/19 09:17	12/20/19 23:52	205-99-2	
Benzo(g,h,i)perylene	**467**	ug/kg	57.0	10	3	12/19/19 09:17	12/20/19 23:52	191-24-2	
Benzo(k)fluoranthene	**358**	ug/kg	57.0	7.3	3	12/19/19 09:17	12/20/19 23:52	207-08-9	
Chrysene	**640**	ug/kg	57.0	10.7	3	12/19/19 09:17	12/20/19 23:52	218-01-9	
Dibenz(a,h)anthracene	**126**	ug/kg	57.0	7.9	3	12/19/19 09:17	12/20/19 23:52	53-70-3	
Fluoranthene	**1290**	ug/kg	57.0	6.7	3	12/19/19 09:17	12/20/19 23:52	206-44-0	
Fluorene	**90.5**	ug/kg	57.0	6.8	3	12/19/19 09:17	12/20/19 23:52	86-73-7	
Indeno(1,2,3-cd)pyrene	**383**	ug/kg	57.0	11.9	3	12/19/19 09:17	12/20/19 23:52	193-39-5	
1-Methylnaphthalene	**<8.3**	ug/kg	57.0	8.3	3	12/19/19 09:17	12/20/19 23:52	90-12-0	
2-Methylnaphthalene	**16.2J**	ug/kg	57.0	8.3	3	12/19/19 09:17	12/20/19 23:52	91-57-6	
Naphthalene	**24.4J**	ug/kg	57.0	5.5	3	12/19/19 09:17	12/20/19 23:52	91-20-3	
Phenanthrene	**688**	ug/kg	57.0	6.5	3	12/19/19 09:17	12/20/19 23:52	85-01-8	
Pyrene	**951**	ug/kg	57.0	8.4	3	12/19/19 09:17	12/20/19 23:52	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	73	%	28-99		3	12/19/19 09:17	12/20/19 23:52	321-60-8	
Terphenyl-d14 (S)	74	%	10-107		3	12/19/19 09:17	12/20/19 23:52	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**12.0**	%	0.10	0.10	1		12/23/19 15:56		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 5323 THIENSVILLE HIGHWAY DEPT
Pace Project No.: 40200968

QC Batch: 343858 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3546 Analysis Description: 8270/3546 MSSV PAH by SIM
Associated Lab Samples: 40200968001, 40200968002, 40200968003, 40200968004, 40200968005, 40200968006, 40200968007

METHOD BLANK: 1996148 Matrix: Solid
Associated Lab Samples: 40200968001, 40200968002, 40200968003, 40200968004, 40200968005, 40200968006, 40200968007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	<2.4	16.7	12/19/19 14:19	
2-Methylnaphthalene	ug/kg	<2.4	16.7	12/19/19 14:19	
Acenaphthene	ug/kg	<2.2	16.7	12/19/19 14:19	
Acenaphthylene	ug/kg	<2.1	16.7	12/19/19 14:19	
Anthracene	ug/kg	<2.1	16.7	12/19/19 14:19	
Benzo(a)anthracene	ug/kg	<2.2	16.7	12/19/19 14:19	
Benzo(a)pyrene	ug/kg	<1.9	16.7	12/19/19 14:19	
Benzo(b)fluoranthene	ug/kg	<2.3	16.7	12/19/19 14:19	
Benzo(g,h,i)perylene	ug/kg	<2.9	16.7	12/19/19 14:19	
Benzo(k)fluoranthene	ug/kg	<2.1	16.7	12/19/19 14:19	
Chrysene	ug/kg	<3.1	16.7	12/19/19 14:19	
Dibenz(a,h)anthracene	ug/kg	<2.3	16.7	12/19/19 14:19	
Fluoranthene	ug/kg	<2.0	16.7	12/19/19 14:19	
Fluorene	ug/kg	<2.0	16.7	12/19/19 14:19	
Indeno(1,2,3-cd)pyrene	ug/kg	<3.5	16.7	12/19/19 14:19	
Naphthalene	ug/kg	<1.6	16.7	12/19/19 14:19	
Phenanthrene	ug/kg	<1.9	16.7	12/19/19 14:19	
Pyrene	ug/kg	<2.5	16.7	12/19/19 14:19	
2-Fluorobiphenyl (S)	%	84	28-99	12/19/19 14:19	
Terphenyl-d14 (S)	%	82	10-107	12/19/19 14:19	

LABORATORY CONTROL SAMPLE: 1996149

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	334	291	87	47-104	
2-Methylnaphthalene	ug/kg	334	279	84	50-100	
Acenaphthene	ug/kg	334	294	88	56-113	
Acenaphthylene	ug/kg	334	305	91	55-113	
Anthracene	ug/kg	334	312	93	59-103	
Benzo(a)anthracene	ug/kg	334	243	73	55-102	
Benzo(a)pyrene	ug/kg	334	324	97	59-114	
Benzo(b)fluoranthene	ug/kg	334	299	89	53-124	
Benzo(g,h,i)perylene	ug/kg	334	294	88	48-114	
Benzo(k)fluoranthene	ug/kg	334	315	94	61-118	
Chrysene	ug/kg	334	321	96	62-108	
Dibenz(a,h)anthracene	ug/kg	334	297	89	51-114	
Fluoranthene	ug/kg	334	303	91	59-113	
Fluorene	ug/kg	334	306	92	56-117	
Indeno(1,2,3-cd)pyrene	ug/kg	334	297	89	52-115	
Naphthalene	ug/kg	334	275	82	54-95	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 5323 THIENSVILLE HIGHWAY DEPT
Pace Project No.: 40200968

LABORATORY CONTROL SAMPLE: 1996149

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/kg	334	282	85	58-101	
Pyrene	ug/kg	334	286	86	56-105	
2-Fluorobiphenyl (S)	%			85	28-99	
Terphenyl-d14 (S)	%			80	10-107	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1996150 1996151

Parameter	Units	40200908006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	ug/kg	<0.0027 mg/kg	370	370	302	305	82	83	39-104	1	29	
2-Methylnaphthalene	ug/kg	<0.0027 mg/kg	370	370	282	283	76	77	40-100	0	32	
Acenaphthene	ug/kg	<0.0024 mg/kg	370	370	302	308	82	83	50-113	2	21	
Acenaphthylene	ug/kg	<0.0023 mg/kg	370	370	309	315	84	85	42-114	2	27	
Anthracene	ug/kg	<0.0023 mg/kg	370	370	319	320	86	87	33-105	0	21	
Benzo(a)anthracene	ug/kg	<0.0024 mg/kg	370	370	234	228	63	62	43-102	3	21	
Benzo(a)pyrene	ug/kg	<0.0021 mg/kg	370	370	326	319	88	86	34-117	2	22	
Benzo(b)fluoranthene	ug/kg	<0.0026 mg/kg	370	370	276	287	75	78	35-124	4	35	
Benzo(g,h,i)perylene	ug/kg	<0.0032 mg/kg	370	370	290	288	78	78	10-120	1	30	
Benzo(k)fluoranthene	ug/kg	<0.0024 mg/kg	370	370	333	316	90	86	31-128	5	27	
Chrysene	ug/kg	<0.0035 mg/kg	370	370	332	328	90	89	39-108	1	20	
Dibenz(a,h)anthracene	ug/kg	<0.0026 mg/kg	370	370	290	287	79	78	19-114	1	28	
Fluoranthene	ug/kg	<0.0022 mg/kg	370	370	302	297	82	80	45-113	2	22	
Fluorene	ug/kg	<0.0022 mg/kg	370	370	309	313	84	85	48-117	1	21	
Indeno(1,2,3-cd)pyrene	ug/kg	<0.0039 mg/kg	370	370	290	287	79	78	10-123	1	28	
Naphthalene	ug/kg	<0.0018 mg/kg	370	370	282	284	76	77	32-101	1	27	
Phenanthrene	ug/kg	<0.0021 mg/kg	370	370	283	277	77	75	40-101	2	20	
Pyrene	ug/kg	<0.0027 mg/kg	370	370	282	282	76	76	35-105	0	26	
2-Fluorobiphenyl (S)	%						74	78	28-99			
Terphenyl-d14 (S)	%						68	68	10-107			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 5323 THIENSVILLE HIGHWAY DEPT
Pace Project No.: 40200968

QC Batch: 344058
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 40200968001, 40200968002

SAMPLE DUPLICATE: 1997294

Parameter	Units	40201102001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	7.6	7.6	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 5323 THIENSVILLE HIGHWAY DEPT
Pace Project No.: 40200968

QC Batch: 344210 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 40200968003, 40200968004, 40200968005, 40200968006, 40200968007

SAMPLE DUPLICATE: 1998041

Parameter	Units	40200974002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	19.5	18.9	3	10	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 5323 THIENSVILLE HIGHWAY DEPT
Pace Project No.: 40200968

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 5323 THIENSVILLE HIGHWAY DEPT
Pace Project No.: 40200968

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40200968001	**SP-1 (2-4)**	EPA 3546	343858	EPA 8270 by SIM	343902
40200968002	**SP-2 (2-4)**	EPA 3546	343858	EPA 8270 by SIM	343902
40200968003	**SP-3 (2-4)**	EPA 3546	343858	EPA 8270 by SIM	343902
40200968004	**SP-4 (2-4)**	EPA 3546	343858	EPA 8270 by SIM	343902
40200968005	**SP-5 (2-4)**	EPA 3546	343858	EPA 8270 by SIM	343902
40200968006	**SP-6 (2-4)**	EPA 3546	343858	EPA 8270 by SIM	343902
40200968007	**SP-7 (2-4)**	EPA 3546	343858	EPA 8270 by SIM	343902
40200968001	**SP-1 (2-4)**	ASTM D2974-87	344058		
40200968002	**SP-2 (2-4)**	ASTM D2974-87	344058		
40200968003	**SP-3 (2-4)**	ASTM D2974-87	344210		
40200968004	**SP-4 (2-4)**	ASTM D2974-87	344210		
40200968005	**SP-5 (2-4)**	ASTM D2974-87	344210		
40200968006	**SP-6 (2-4)**	ASTM D2974-87	344210		
40200968007	**SP-7 (2-4)**	ASTM D2974-87	344210		

(Please Print Clearly)	
Company Name:	Moraine Environmental
Branch/Location:	Fredonia
Project Contact:	Dave Lennon
Phone:	262-692-3345
Project Number:	5323
Project Name:	Thiensville Highway Department
Project State:	WI
Sampled By (Print):	Dave Lennon
Sampled By (Sign):	Dave Lennon
PO #:	Regulatory Program:

Pace Analytical® www.pacelabs.com

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Page 1 of

4L2009168

CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Quote #:	
Mail To Contact:	
Mail To Company:	Moraine Env.
Mail To Address:	1766 Tower Dr. Fredonia, WI 53021
Invoice To Contact:	
Invoice To Company:	"
Invoice To Address:	Above
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes

A = Air	W = Water
B = Biota	DW = Drinking Water
C = Charcoal	GW = Ground Water
O = Oil	SW = Surface Water
S = Soil	WW = Waste Water
SI = Sludge	WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: PAH, Dry wt	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
001	SP-1 (2-4)	12/16/19		S	N	A	X			
002	SP-2 (2-4)	"		"	"	"	X			
003	SP-3 (2-4)	"		"	"	"	X			
004	SP-4 (2-4)	"		"	"	"	X			
005	SP-5 (2-4)	"		"	"	"	X			
006	SP-6 (2-4)	"		"	"	"	X			
007	SP-7 (2-4)	"		"	"	"	X			

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):
Email #1:
Email #2:
Telephone:
Fax:

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
Dave Lennon	12/17/19 9:15	Mary Fannin	12/17/19 9:15
Mary Fannin	12/17/19 1400		
CS Logistics	12/18/19 0935	Brandon Rakke Pace	12/18/19 0935

PACE Project No.
4L2009168
Receipt Temp = 5.0 °C
Sample Receipt pH
OK / Adjusted
Cooler Custody Seal
Present / Not Present
Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

Pace Analytical Services, LLC
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Sample Preservation Receipt Form

Client Name: Moran Environmental   Project # 40200968

All containers needing preservation have been checked and noted below: □Yes □No ☒N/A   Initial when completed: Date/ Time:

Lab Lot# of pH paper: Lab Std #ID of preservation (if pH adjusted):

Pace Lab #	Glass: AG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	Plastic: BP1U	BP2N	BP2Z	BP3U	BP3B	BP3N	BP3S	Vials: DG9A	DG9T	VG9U	VG9H	VG9M	VG9D	Jars: JGFU	WGFU	WPFU	General: SP5T	ZPLC	GN	VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001																																	2.5 / 5 / 10
002																																	2.5 / 5 / 10
003																																	2.5 / 5 / 10
004																																	2.5 / 5 / 10
005																																	2.5 / 5 / 10
006																																	2.5 / 5 / 10
007																																	2.5 / 5 / 10
008																																	2.5 / 5 / 10
009																																	2.5 / 5 / 10
010																																	2.5 / 5 / 10
011																																	2.5 / 5 / 10
012																																	2.5 / 5 / 10
013																																	2.5 / 5 / 10
014																																	2.5 / 5 / 10
015																																	2.5 / 5 / 10
016																																	2.5 / 5 / 10
017																																	2.5 / 5 / 10
018																																	2.5 / 5 / 10
019																																	2.5 / 5 / 10
020																																	2.5 / 5 / 10

12-18-19 BL

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: ______   Headspace in VOA Vials (>6mm) : □Yes □No ☒N/A ***If yes look in headspace column**

AG1U	1 liter amber glass	**BP1U**	1 liter plastic unpres	**DG9A**	40 mL amber ascorbic	**JGFU**	4 oz amber jar unpres
AG1H	1 liter amber glass HCL	**BP2N**	500 mL plastic HNO3	**DG9T**	40 mL amber Na Thio	**WGFU**	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	**BP2Z**	500 mL plastic NaOH, Znact	**VG9U**	40 mL clear vial unpres	**WPFU**	4 oz plastic jar unpres
AG4U	120 mL amber glass unpres	**BP3U**	250 mL plastic unpres	**VG9H**	40 mL clear vial HCL		
AG5U	100 mL amber glass unpres	**BP3B**	250 mL plastic NaOH	**VG9M**	40 mL clear vial MeOH	**SP5T**	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	**BP3N**	250 mL plastic HNO3	**VG9D**	40 mL clear vial DI	**ZPLC**	ziploc bag
BG3U	250 mL clear glass unpres	**BP3S**	250 mL plastic H2SO4			**GN:**	

Pace Analytical 1241 Bellevue Street, Green Bay, WI 54302	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: 25Apr2018
	Document No.: **F-GB-C-031-Rev.07**	Issuing Authority: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Project #: **WO# : 40200968**

40200968

Client Name: Natural Environmental

Courier: ☒ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco
☐ Client ☐ Pace Other: _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☒ yes ☐ no Seals intact: ☒ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other _____

Thermometer Used SR - 93 **Type of Ice:** Wet Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: 5.0 /Corr: 5.0

Temp Blank Present: ☐ yes ☒ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C.

Person examining contents:
Date: 12-18-19
Initials: BR

Chain of Custody Present:	☒Yes ☐No ☐N/A	1. 12-18-19 BR 12-18-19 BR
Chain of Custody Filled Out:	☐Yes ☒No ☐N/A	2. No page numbers, No times Samples
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3. 001-007. 12-18-19 BR
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☒Yes ☐No	6.
Rush Turn Around Time Requested:	☐Yes ☒No	7.
Sufficient Volume:		8.
For Analysis: ☒Yes ☐No MS/MSD:	☐Yes ☒No ☐N/A	
Correct Containers Used:	☒Yes ☐No	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☒N/A	
Containers Intact:	☒Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: S		
Trip Blank Present:	☐Yes ☐No ☒N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** 12/18/19

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

January 08, 2020

Tom Sweet
Moraine Environmental, Inc.
766 Tower Drive
Fredonia, WI 53021

RE: Project: 5323 VILLAGE OF THIENSVILLE
Pace Project No.: 40201307

Dear Tom Sweet:
Enclosed are the analytical results for sample(s) received by the laboratory on December 21, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Steven Mleczko
steve.mleczko@pacelabs.com
(920)469-2436
Project Manager

Enclosures

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 5323 VILLAGE OF THIENSVILLE
Pace Project No.: 40201307

Pace Analytical Services Green Bay
1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 5323 VILLAGE OF THIENSVILLE
Pace Project No.: 40201307

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40201307001	**SD/B1**	Water	12/19/19 00:00	12/21/19 08:25
40201307002	**SD/B2**	Water	12/19/19 00:00	12/21/19 08:25
40201307003	**SD/B3**	Water	12/19/19 00:00	12/21/19 08:25
40201307004	**SD/B6**	Water	12/19/19 00:00	12/21/19 08:25
40201307005	**SD/B14**	Water	12/19/19 00:00	12/21/19 08:25
40201307006	**SD/B16**	Water	12/19/19 00:00	12/21/19 08:25
40201307007	**SD/B28**	Water	12/19/19 00:00	12/21/19 08:25

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Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 5323 VILLAGE OF THIENSVILLE
Pace Project No.: 40201307

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40201307001	**SD/B1**	EPA 6020	KXS	1	PASI-G
40201307002	**SD/B2**	EPA 8270 by HVI	TPO	21	PASI-G
40201307003	**SD/B3**	EPA 8260	LAP	12	PASI-G
40201307004	**SD/B6**	EPA 8270 by HVI	TPO	21	PASI-G
40201307005	**SD/B14**	EPA 8270 by HVI	TPO	21	PASI-G
40201307006	**SD/B16**	EPA 8270 by HVI	TPO	21	PASI-G
40201307007	**SD/B28**	EPA 8270 by HVI	TPO	21	PASI-G

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SUMMARY OF DETECTION

Project: 5323 VILLAGE OF THIENSVILLE
Pace Project No.: 40201307

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40201307001	**SD/B1**					
EPA 6020	Arsenic, Dissolved	1.4	ug/L	1.0	01/03/20 16:29	P4
40201307002	**SD/B2**					
EPA 8270 by HVI	Acenaphthene	0.026J	ug/L	0.030	12/27/19 21:07	H2
EPA 8270 by HVI	1-Methylnaphthalene	0.026J	ug/L	0.030	12/27/19 21:07	H2
EPA 8270 by HVI	2-Methylnaphthalene	0.044	ug/L	0.024	12/27/19 21:07	H2
EPA 8270 by HVI	Naphthalene	0.050J	ug/L	0.092	12/27/19 21:07	H2
EPA 8270 by HVI	Phenanthrene	0.014J	ug/L	0.069	12/27/19 21:07	H2
EPA 8270 by HVI	Pyrene	0.014J	ug/L	0.038	12/27/19 21:07	H2
EPA 8270 by HVI	Total PAHs	0.21	ug/L		12/27/19 21:07	
40201307003	**SD/B3**					
EPA 8260	Toluene	1.3J	ug/L	5.0	12/27/19 10:17	
40201307004	**SD/B6**					
EPA 8270 by HVI	Acenaphthene	0.030J	ug/L	0.030	12/27/19 21:25	H2
EPA 8270 by HVI	Acenaphthylene	0.016J	ug/L	0.025	12/27/19 21:25	H2
EPA 8270 by HVI	Anthracene	0.033J	ug/L	0.052	12/27/19 21:25	H2
EPA 8270 by HVI	Benzo(a)pyrene	0.014J	ug/L	0.053	12/27/19 21:25	H2
EPA 8270 by HVI	Benzo(b)fluoranthene	0.0066J	ug/L	0.029	12/27/19 21:25	H2
EPA 8270 by HVI	Benzo(g,h,i)perylene	0.018J	ug/L	0.034	12/27/19 21:25	H2
EPA 8270 by HVI	Benzo(k)fluoranthene	0.012J	ug/L	0.038	12/27/19 21:25	H2
EPA 8270 by HVI	Chrysene	0.018J	ug/L	0.065	12/27/19 21:25	H2,L1
EPA 8270 by HVI	Fluoranthene	0.031J	ug/L	0.053	12/27/19 21:25	H2
EPA 8270 by HVI	Fluorene	0.018J	ug/L	0.040	12/27/19 21:25	H2
EPA 8270 by HVI	1-Methylnaphthalene	0.035	ug/L	0.030	12/27/19 21:25	H2
EPA 8270 by HVI	2-Methylnaphthalene	0.053	ug/L	0.024	12/27/19 21:25	H2
EPA 8270 by HVI	Naphthalene	0.052J	ug/L	0.092	12/27/19 21:25	H2
EPA 8270 by HVI	Phenanthrene	0.034J	ug/L	0.069	12/27/19 21:25	H2
EPA 8270 by HVI	Pyrene	0.048	ug/L	0.038	12/27/19 21:25	H2
EPA 8270 by HVI	Total PAHs	0.43	ug/L		12/27/19 21:25	
40201307005	**SD/B14**					
EPA 8270 by HVI	1-Methylnaphthalene	0.022J	ug/L	0.030	12/27/19 21:44	H2
EPA 8270 by HVI	2-Methylnaphthalene	0.040	ug/L	0.024	12/27/19 21:44	H2
EPA 8270 by HVI	Naphthalene	0.045J	ug/L	0.092	12/27/19 21:44	H2
EPA 8270 by HVI	Total PAHs	0.14	ug/L		12/27/19 21:44	
40201307006	**SD/B16**					
EPA 8270 by HVI	1-Methylnaphthalene	0.016J	ug/L	0.030	12/27/19 22:02	H2
EPA 8270 by HVI	2-Methylnaphthalene	0.034	ug/L	0.024	12/27/19 22:02	H2
EPA 8270 by HVI	Naphthalene	0.036J	ug/L	0.092	12/27/19 22:02	H2
EPA 8270 by HVI	Total PAHs	0.090	ug/L		12/27/19 22:02	
40201307007	**SD/B28**					
EPA 8270 by HVI	Acenaphthene	0.012J	ug/L	0.030	12/27/19 22:57	H2
EPA 8270 by HVI	Anthracene	0.033J	ug/L	0.052	12/27/19 22:57	H2
EPA 8270 by HVI	Benzo(a)anthracene	0.040	ug/L	0.038	12/27/19 22:57	H2
EPA 8270 by HVI	Benzo(a)pyrene	0.065	ug/L	0.053	12/27/19 22:57	H2
EPA 8270 by HVI	Benzo(b)fluoranthene	0.077	ug/L	0.029	12/27/19 22:57	H2

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SUMMARY OF DETECTION

Project: 5323 VILLAGE OF THIENSVILLE
Pace Project No.: 40201307

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40201307007	**SD/B28**					
EPA 8270 by HVI	Benzo(g,h,i)perylene	0.045	ug/L	0.034	12/27/19 22:57	H2
EPA 8270 by HVI	Benzo(k)fluoranthene	0.062	ug/L	0.038	12/27/19 22:57	H2
EPA 8270 by HVI	Chrysene	0.13	ug/L	0.065	12/27/19 22:57	H2,L1
EPA 8270 by HVI	Fluoranthene	0.22	ug/L	0.053	12/27/19 22:57	H2
EPA 8270 by HVI	Fluorene	0.011J	ug/L	0.040	12/27/19 22:57	H2
EPA 8270 by HVI	Indeno(1,2,3-cd)pyrene	0.038J	ug/L	0.088	12/27/19 22:57	H2
EPA 8270 by HVI	1-Methylnaphthalene	0.019J	ug/L	0.030	12/27/19 22:57	H2
EPA 8270 by HVI	2-Methylnaphthalene	0.034	ug/L	0.024	12/27/19 22:57	H2
EPA 8270 by HVI	Naphthalene	0.036J	ug/L	0.092	12/27/19 22:57	H2
EPA 8270 by HVI	Phenanthrene	0.14	ug/L	0.069	12/27/19 22:57	H2
EPA 8270 by HVI	Pyrene	0.23	ug/L	0.038	12/27/19 22:57	H2
EPA 8270 by HVI	Total PAHs	1.2	ug/L		12/27/19 22:57	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 5323 VILLAGE OF THIENSVILLE
Pace Project No.: 40201307

Sample: SD/B1 **Lab ID: 40201307001** Collected: 12/19/19 00:00 Received: 12/21/19 08:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS, Dissolved	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic, Dissolved	**1.4**	ug/L	1.0	0.28	1	01/03/20 05:31	01/03/20 16:29	7440-38-2	P4

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 5323 VILLAGE OF THIENSVILLE
Pace Project No.: 40201307

Sample: SD/B2 **Lab ID: 40201307002** Collected: 12/19/19 00:00 Received: 12/21/19 08:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by HVI	Analytical Method: EPA 8270 by HVI Preparation Method: EPA 3510								
Acenaphthene	**0.026J**	ug/L	0.030	0.0061	1	12/27/19 05:31	12/27/19 21:07	83-32-9	H2
Acenaphthylene	**<0.0050**	ug/L	0.025	0.0050	1	12/27/19 05:31	12/27/19 21:07	208-96-8	H2
Anthracene	**<0.010**	ug/L	0.052	0.010	1	12/27/19 05:31	12/27/19 21:07	120-12-7	H2
Benzo(a)anthracene	**<0.0076**	ug/L	0.038	0.0076	1	12/27/19 05:31	12/27/19 21:07	56-55-3	H2
Benzo(a)pyrene	**<0.011**	ug/L	0.053	0.011	1	12/27/19 05:31	12/27/19 21:07	50-32-8	H2
Benzo(b)fluoranthene	**<0.0057**	ug/L	0.029	0.0057	1	12/27/19 05:31	12/27/19 21:07	205-99-2	H2
Benzo(g,h,i)perylene	**<0.0068**	ug/L	0.034	0.0068	1	12/27/19 05:31	12/27/19 21:07	191-24-2	H2
Benzo(k)fluoranthene	**<0.0076**	ug/L	0.038	0.0076	1	12/27/19 05:31	12/27/19 21:07	207-08-9	H2
Chrysene	**<0.013**	ug/L	0.065	0.013	1	12/27/19 05:31	12/27/19 21:07	218-01-9	H2,L1
Dibenz(a,h)anthracene	**<0.010**	ug/L	0.050	0.010	1	12/27/19 05:31	12/27/19 21:07	53-70-3	H2
Fluoranthene	**<0.011**	ug/L	0.053	0.011	1	12/27/19 05:31	12/27/19 21:07	206-44-0	H2
Fluorene	**<0.0080**	ug/L	0.040	0.0080	1	12/27/19 05:31	12/27/19 21:07	86-73-7	H2
Indeno(1,2,3-cd)pyrene	**<0.018**	ug/L	0.088	0.018	1	12/27/19 05:31	12/27/19 21:07	193-39-5	H2
1-Methylnaphthalene	**0.026J**	ug/L	0.030	0.0059	1	12/27/19 05:31	12/27/19 21:07	90-12-0	H2
2-Methylnaphthalene	**0.044**	ug/L	0.024	0.0049	1	12/27/19 05:31	12/27/19 21:07	91-57-6	H2
Naphthalene	**0.050J**	ug/L	0.092	0.018	1	12/27/19 05:31	12/27/19 21:07	91-20-3	H2
Phenanthrene	**0.014J**	ug/L	0.069	0.014	1	12/27/19 05:31	12/27/19 21:07	85-01-8	H2
Pyrene	**0.014J**	ug/L	0.038	0.0076	1	12/27/19 05:31	12/27/19 21:07	129-00-0	H2
Total PAHs	**0.21**	ug/L			1	12/27/19 05:31	12/27/19 21:07		
Surrogates									
2-Fluorobiphenyl (S)	54	%	30-85		1	12/27/19 05:31	12/27/19 21:07	321-60-8	
Terphenyl-d14 (S)	75	%	10-120		1	12/27/19 05:31	12/27/19 21:07	1718-51-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 5323 VILLAGE OF THIENSVILLE
Pace Project No.: 40201307

Sample: SD/B3 **Lab ID: 40201307003** Collected: 12/19/19 00:00 Received: 12/21/19 08:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
Benzene	**<0.25**	ug/L	1.0	0.25	1		12/27/19 10:17	71-43-2	M1
Ethylbenzene	**<0.22**	ug/L	1.0	0.22	1		12/27/19 10:17	100-41-4	M1
Methyl-tert-butyl ether	**<1.2**	ug/L	4.2	1.2	1		12/27/19 10:17	1634-04-4	
Naphthalene	**<1.2**	ug/L	5.0	1.2	1		12/27/19 10:17	91-20-3	
Toluene	**1.3J**	ug/L	5.0	0.17	1		12/27/19 10:17	108-88-3	
1,2,4-Trimethylbenzene	**<0.84**	ug/L	2.8	0.84	1		12/27/19 10:17	95-63-6	
1,3,5-Trimethylbenzene	**<0.87**	ug/L	2.9	0.87	1		12/27/19 10:17	108-67-8	
m&p-Xylene	**<0.47**	ug/L	2.0	0.47	1		12/27/19 10:17	179601-23-1	
o-Xylene	**<0.26**	ug/L	1.0	0.26	1		12/27/19 10:17	95-47-6	
Surrogates									
Dibromofluoromethane (S)	121	%	70-130		1		12/27/19 10:17	1868-53-7	
Toluene-d8 (S)	103	%	70-130		1		12/27/19 10:17	2037-26-5	
4-Bromofluorobenzene (S)	101	%	70-130		1		12/27/19 10:17	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 5323 VILLAGE OF THIENSVILLE
Pace Project No.: 40201307

Sample: SD/B6 **Lab ID: 40201307004** Collected: 12/19/19 00:00 Received: 12/21/19 08:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by HVI	Analytical Method: EPA 8270 by HVI Preparation Method: EPA 3510								
Acenaphthene	**0.030J**	ug/L	0.030	0.0061	1	12/27/19 05:31	12/27/19 21:25	83-32-9	H2
Acenaphthylene	**0.016J**	ug/L	0.025	0.0050	1	12/27/19 05:31	12/27/19 21:25	208-96-8	H2
Anthracene	**0.033J**	ug/L	0.052	0.010	1	12/27/19 05:31	12/27/19 21:25	120-12-7	H2
Benzo(a)anthracene	**<0.0076**	ug/L	0.038	0.0076	1	12/27/19 05:31	12/27/19 21:25	56-55-3	H2
Benzo(a)pyrene	**0.014J**	ug/L	0.053	0.011	1	12/27/19 05:31	12/27/19 21:25	50-32-8	H2
Benzo(b)fluoranthene	**0.0066J**	ug/L	0.029	0.0057	1	12/27/19 05:31	12/27/19 21:25	205-99-2	H2
Benzo(g,h,i)perylene	**0.018J**	ug/L	0.034	0.0068	1	12/27/19 05:31	12/27/19 21:25	191-24-2	H2
Benzo(k)fluoranthene	**0.012J**	ug/L	0.038	0.0076	1	12/27/19 05:31	12/27/19 21:25	207-08-9	H2
Chrysene	**0.018J**	ug/L	0.065	0.013	1	12/27/19 05:31	12/27/19 21:25	218-01-9	H2,L1
Dibenz(a,h)anthracene	**<0.010**	ug/L	0.050	0.010	1	12/27/19 05:31	12/27/19 21:25	53-70-3	H2
Fluoranthene	**0.031J**	ug/L	0.053	0.011	1	12/27/19 05:31	12/27/19 21:25	206-44-0	H2
Fluorene	**0.018J**	ug/L	0.040	0.0080	1	12/27/19 05:31	12/27/19 21:25	86-73-7	H2
Indeno(1,2,3-cd)pyrene	**<0.018**	ug/L	0.088	0.018	1	12/27/19 05:31	12/27/19 21:25	193-39-5	H2
1-Methylnaphthalene	**0.035**	ug/L	0.030	0.0059	1	12/27/19 05:31	12/27/19 21:25	90-12-0	H2
2-Methylnaphthalene	**0.053**	ug/L	0.024	0.0049	1	12/27/19 05:31	12/27/19 21:25	91-57-6	H2
Naphthalene	**0.052J**	ug/L	0.092	0.018	1	12/27/19 05:31	12/27/19 21:25	91-20-3	H2
Phenanthrene	**0.034J**	ug/L	0.069	0.014	1	12/27/19 05:31	12/27/19 21:25	85-01-8	H2
Pyrene	**0.048**	ug/L	0.038	0.0076	1	12/27/19 05:31	12/27/19 21:25	129-00-0	H2
Total PAHs	**0.43**	ug/L			1	12/27/19 05:31	12/27/19 21:25		
Surrogates									
2-Fluorobiphenyl (S)	63	%	30-85		1	12/27/19 05:31	12/27/19 21:25	321-60-8	
Terphenyl-d14 (S)	69	%	10-120		1	12/27/19 05:31	12/27/19 21:25	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 5323 VILLAGE OF THIENSVILLE
Pace Project No.: 40201307

Sample: SD/B14 **Lab ID: 40201307005** Collected: 12/19/19 00:00 Received: 12/21/19 08:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by HVI	Analytical Method: EPA 8270 by HVI Preparation Method: EPA 3510								
Acenaphthene	**<0.0061**	ug/L	0.030	0.0061	1	12/27/19 05:31	12/27/19 21:44	83-32-9	H2
Acenaphthylene	**<0.0050**	ug/L	0.025	0.0050	1	12/27/19 05:31	12/27/19 21:44	208-96-8	H2
Anthracene	**<0.010**	ug/L	0.052	0.010	1	12/27/19 05:31	12/27/19 21:44	120-12-7	H2
Benzo(a)anthracene	**<0.0076**	ug/L	0.038	0.0076	1	12/27/19 05:31	12/27/19 21:44	56-55-3	H2
Benzo(a)pyrene	**<0.011**	ug/L	0.053	0.011	1	12/27/19 05:31	12/27/19 21:44	50-32-8	H2
Benzo(b)fluoranthene	**<0.0057**	ug/L	0.029	0.0057	1	12/27/19 05:31	12/27/19 21:44	205-99-2	H2
Benzo(g,h,i)perylene	**<0.0068**	ug/L	0.034	0.0068	1	12/27/19 05:31	12/27/19 21:44	191-24-2	H2
Benzo(k)fluoranthene	**<0.0076**	ug/L	0.038	0.0076	1	12/27/19 05:31	12/27/19 21:44	207-08-9	H2
Chrysene	**<0.013**	ug/L	0.065	0.013	1	12/27/19 05:31	12/27/19 21:44	218-01-9	H2,L1
Dibenz(a,h)anthracene	**<0.010**	ug/L	0.050	0.010	1	12/27/19 05:31	12/27/19 21:44	53-70-3	H2
Fluoranthene	**<0.011**	ug/L	0.053	0.011	1	12/27/19 05:31	12/27/19 21:44	206-44-0	H2
Fluorene	**<0.0080**	ug/L	0.040	0.0080	1	12/27/19 05:31	12/27/19 21:44	86-73-7	H2
Indeno(1,2,3-cd)pyrene	**<0.018**	ug/L	0.088	0.018	1	12/27/19 05:31	12/27/19 21:44	193-39-5	H2
1-Methylnaphthalene	**0.022J**	ug/L	0.030	0.0059	1	12/27/19 05:31	12/27/19 21:44	90-12-0	H2
2-Methylnaphthalene	**0.040**	ug/L	0.024	0.0049	1	12/27/19 05:31	12/27/19 21:44	91-57-6	H2
Naphthalene	**0.045J**	ug/L	0.092	0.018	1	12/27/19 05:31	12/27/19 21:44	91-20-3	H2
Phenanthrene	**<0.014**	ug/L	0.069	0.014	1	12/27/19 05:31	12/27/19 21:44	85-01-8	H2
Pyrene	**<0.0076**	ug/L	0.038	0.0076	1	12/27/19 05:31	12/27/19 21:44	129-00-0	H2
Total PAHs	**0.14**	ug/L			1	12/27/19 05:31	12/27/19 21:44		
Surrogates									
2-Fluorobiphenyl (S)	49	%	30-85		1	12/27/19 05:31	12/27/19 21:44	321-60-8	
Terphenyl-d14 (S)	68	%	10-120		1	12/27/19 05:31	12/27/19 21:44	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 5323 VILLAGE OF THIENSVILLE
Pace Project No.: 40201307

Sample: SD/B16 **Lab ID: 40201307006** Collected: 12/19/19 00:00 Received: 12/21/19 08:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by HVI	Analytical Method: EPA 8270 by HVI Preparation Method: EPA 3510								
Acenaphthene	**<0.0061**	ug/L	0.030	0.0061	1	12/27/19 05:31	12/27/19 22:02	83-32-9	H2
Acenaphthylene	**<0.0050**	ug/L	0.025	0.0050	1	12/27/19 05:31	12/27/19 22:02	208-96-8	H2
Anthracene	**<0.010**	ug/L	0.052	0.010	1	12/27/19 05:31	12/27/19 22:02	120-12-7	H2
Benzo(a)anthracene	**<0.0076**	ug/L	0.038	0.0076	1	12/27/19 05:31	12/27/19 22:02	56-55-3	H2
Benzo(a)pyrene	**<0.011**	ug/L	0.053	0.011	1	12/27/19 05:31	12/27/19 22:02	50-32-8	H2
Benzo(b)fluoranthene	**<0.0057**	ug/L	0.029	0.0057	1	12/27/19 05:31	12/27/19 22:02	205-99-2	H2
Benzo(g,h,i)perylene	**<0.0068**	ug/L	0.034	0.0068	1	12/27/19 05:31	12/27/19 22:02	191-24-2	H2
Benzo(k)fluoranthene	**<0.0076**	ug/L	0.038	0.0076	1	12/27/19 05:31	12/27/19 22:02	207-08-9	H2
Chrysene	**<0.013**	ug/L	0.065	0.013	1	12/27/19 05:31	12/27/19 22:02	218-01-9	H2,L1
Dibenz(a,h)anthracene	**<0.010**	ug/L	0.050	0.010	1	12/27/19 05:31	12/27/19 22:02	53-70-3	H2
Fluoranthene	**<0.011**	ug/L	0.053	0.011	1	12/27/19 05:31	12/27/19 22:02	206-44-0	H2
Fluorene	**<0.0080**	ug/L	0.040	0.0080	1	12/27/19 05:31	12/27/19 22:02	86-73-7	H2
Indeno(1,2,3-cd)pyrene	**<0.018**	ug/L	0.088	0.018	1	12/27/19 05:31	12/27/19 22:02	193-39-5	H2
1-Methylnaphthalene	**0.016J**	ug/L	0.030	0.0059	1	12/27/19 05:31	12/27/19 22:02	90-12-0	H2
2-Methylnaphthalene	**0.034**	ug/L	0.024	0.0049	1	12/27/19 05:31	12/27/19 22:02	91-57-6	H2
Naphthalene	**0.036J**	ug/L	0.092	0.018	1	12/27/19 05:31	12/27/19 22:02	91-20-3	H2
Phenanthrene	**<0.014**	ug/L	0.069	0.014	1	12/27/19 05:31	12/27/19 22:02	85-01-8	H2
Pyrene	**<0.0076**	ug/L	0.038	0.0076	1	12/27/19 05:31	12/27/19 22:02	129-00-0	H2
Total PAHs	**0.090**	ug/L			1	12/27/19 05:31	12/27/19 22:02		
Surrogates									
2-Fluorobiphenyl (S)	58	%	30-85		1	12/27/19 05:31	12/27/19 22:02	321-60-8	
Terphenyl-d14 (S)	90	%	10-120		1	12/27/19 05:31	12/27/19 22:02	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 5323 VILLAGE OF THIENSVILLE
Pace Project No.: 40201307

Sample: SD/B28 **Lab ID: 40201307007** Collected: 12/19/19 00:00 Received: 12/21/19 08:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by HVI	Analytical Method: EPA 8270 by HVI Preparation Method: EPA 3510								
Acenaphthene	**0.012J**	ug/L	0.030	0.0061	1	12/27/19 05:31	12/27/19 22:57	83-32-9	H2
Acenaphthylene	**<0.0050**	ug/L	0.025	0.0050	1	12/27/19 05:31	12/27/19 22:57	208-96-8	H2
Anthracene	**0.033J**	ug/L	0.052	0.010	1	12/27/19 05:31	12/27/19 22:57	120-12-7	H2
Benzo(a)anthracene	**0.040**	ug/L	0.038	0.0076	1	12/27/19 05:31	12/27/19 22:57	56-55-3	H2
Benzo(a)pyrene	**0.065**	ug/L	0.053	0.011	1	12/27/19 05:31	12/27/19 22:57	50-32-8	H2
Benzo(b)fluoranthene	**0.077**	ug/L	0.029	0.0057	1	12/27/19 05:31	12/27/19 22:57	205-99-2	H2
Benzo(g,h,i)perylene	**0.045**	ug/L	0.034	0.0068	1	12/27/19 05:31	12/27/19 22:57	191-24-2	H2
Benzo(k)fluoranthene	**0.062**	ug/L	0.038	0.0076	1	12/27/19 05:31	12/27/19 22:57	207-08-9	H2
Chrysene	**0.13**	ug/L	0.065	0.013	1	12/27/19 05:31	12/27/19 22:57	218-01-9	H2,L1
Dibenz(a,h)anthracene	**<0.010**	ug/L	0.050	0.010	1	12/27/19 05:31	12/27/19 22:57	53-70-3	H2
Fluoranthene	**0.22**	ug/L	0.053	0.011	1	12/27/19 05:31	12/27/19 22:57	206-44-0	H2
Fluorene	**0.011J**	ug/L	0.040	0.0080	1	12/27/19 05:31	12/27/19 22:57	86-73-7	H2
Indeno(1,2,3-cd)pyrene	**0.038J**	ug/L	0.088	0.018	1	12/27/19 05:31	12/27/19 22:57	193-39-5	H2
1-Methylnaphthalene	**0.019J**	ug/L	0.030	0.0059	1	12/27/19 05:31	12/27/19 22:57	90-12-0	H2
2-Methylnaphthalene	**0.034**	ug/L	0.024	0.0049	1	12/27/19 05:31	12/27/19 22:57	91-57-6	H2
Naphthalene	**0.036J**	ug/L	0.092	0.018	1	12/27/19 05:31	12/27/19 22:57	91-20-3	H2
Phenanthrene	**0.14**	ug/L	0.069	0.014	1	12/27/19 05:31	12/27/19 22:57	85-01-8	H2
Pyrene	**0.23**	ug/L	0.038	0.0076	1	12/27/19 05:31	12/27/19 22:57	129-00-0	H2
Total PAHs	**1.2**	ug/L			1	12/27/19 05:31	12/27/19 22:57		
Surrogates									
2-Fluorobiphenyl (S)	50	%	30-85		1	12/27/19 05:31	12/27/19 22:57	321-60-8	
Terphenyl-d14 (S)	69	%	10-120		1	12/27/19 05:31	12/27/19 22:57	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 5323 VILLAGE OF THIENSVILLE
Pace Project No.: 40201307

QC Batch: 344768 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET Dissolved
Associated Lab Samples: 40201307001

METHOD BLANK: 2000248 Matrix: Water
Associated Lab Samples: 40201307001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	<0.28	1.0	01/03/20 16:08	

LABORATORY CONTROL SAMPLE: 2000249

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	500	494	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2000250 2000251

Parameter	Units	40201307001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	1.4	500	500	504	500	101	100	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 5323 VILLAGE OF THIENSVILLE
Pace Project No.: 40201307

QC Batch: 344413
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 40201307003

METHOD BLANK: 1998723 Matrix: Water
Associated Lab Samples: 40201307003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	<0.84	2.8	12/27/19 07:07	
1,3,5-Trimethylbenzene	ug/L	<0.87	2.9	12/27/19 07:07	
Benzene	ug/L	<0.25	1.0	12/27/19 07:07	
Ethylbenzene	ug/L	<0.22	1.0	12/27/19 07:07	
m&p-Xylene	ug/L	<0.47	2.0	12/27/19 07:07	
Methyl-tert-butyl ether	ug/L	<1.2	4.2	12/27/19 07:07	
Naphthalene	ug/L	<1.2	5.0	12/27/19 07:07	
o-Xylene	ug/L	<0.26	1.0	12/27/19 07:07	
Toluene	ug/L	<0.17	5.0	12/27/19 07:07	
4-Bromofluorobenzene (S)	%	101	70-130	12/27/19 07:07	
Dibromofluoromethane (S)	%	120	70-130	12/27/19 07:07	
Toluene-d8 (S)	%	106	70-130	12/27/19 07:07	

LABORATORY CONTROL SAMPLE: 1998724

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	64.5	129	70-130	
Ethylbenzene	ug/L	50	59.4	119	80-124	
m&p-Xylene	ug/L	100	118	118	70-130	
Methyl-tert-butyl ether	ug/L	50	53.0	106	54-137	
o-Xylene	ug/L	50	57.3	115	70-130	
Toluene	ug/L	50	59.0	118	80-126	
4-Bromofluorobenzene (S)	%			112	70-130	
Dibromofluoromethane (S)	%			110	70-130	
Toluene-d8 (S)	%			110	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1998725 1998726

Parameter	Units	40201307003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	<0.25	50	50	64.3	65.3	129	131	70-130	2	20	M1
Ethylbenzene	ug/L	<0.22	50	50	63.2	59.8	126	120	80-125	6	20	M1
m&p-Xylene	ug/L	<0.47	100	100	122	117	121	117	70-130	4	20	
Methyl-tert-butyl ether	ug/L	<1.2	50	50	53.4	53.1	107	106	51-145	1	20	
o-Xylene	ug/L	<0.26	50	50	60.7	58.0	121	116	70-130	4	20	
Toluene	ug/L	1.3J	50	50	62.4	60.7	122	119	80-131	3	20	
4-Bromofluorobenzene (S)	%						121	118	70-130			
Dibromofluoromethane (S)	%						112	110	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 5323 VILLAGE OF THIENSVILLE
Pace Project No.: 40201307

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1998725 1998726

Parameter	Units	40201307003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Toluene-d8 (S)	%						112	108	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 5323 VILLAGE OF THIENSVILLE
Pace Project No.: 40201307

QC Batch: 344412 Analysis Method: EPA 8270 by HVI
QC Batch Method: EPA 3510 Analysis Description: 8270 Water PAH by HVI
Associated Lab Samples: 40201307002, 40201307004, 40201307005, 40201307006, 40201307007

METHOD BLANK: 1998719 Matrix: Water
Associated Lab Samples: 40201307002, 40201307004, 40201307005, 40201307006, 40201307007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	<0.0059	0.030	12/27/19 17:09	
2-Methylnaphthalene	ug/L	<0.0049	0.024	12/27/19 17:09	
Acenaphthene	ug/L	<0.0061	0.030	12/27/19 17:09	
Acenaphthylene	ug/L	<0.0050	0.025	12/27/19 17:09	
Anthracene	ug/L	<0.010	0.052	12/27/19 17:09	
Benzo(a)anthracene	ug/L	<0.0076	0.038	12/27/19 17:09	
Benzo(a)pyrene	ug/L	<0.011	0.053	12/27/19 17:09	
Benzo(b)fluoranthene	ug/L	<0.0057	0.029	12/27/19 17:09	
Benzo(g,h,i)perylene	ug/L	<0.0068	0.034	12/27/19 17:09	
Benzo(k)fluoranthene	ug/L	<0.0076	0.038	12/27/19 17:09	
Chrysene	ug/L	<0.013	0.065	12/27/19 17:09	
Dibenz(a,h)anthracene	ug/L	<0.010	0.050	12/27/19 17:09	
Fluoranthene	ug/L	<0.011	0.053	12/27/19 17:09	
Fluorene	ug/L	<0.0080	0.040	12/27/19 17:09	
Indeno(1,2,3-cd)pyrene	ug/L	<0.018	0.088	12/27/19 17:09	
Naphthalene	ug/L	<0.018	0.092	12/27/19 17:09	
Phenanthrene	ug/L	<0.014	0.069	12/27/19 17:09	
Pyrene	ug/L	<0.0076	0.038	12/27/19 17:09	
Total PAHs	ug/L	0.0038		12/27/19 17:09	
2-Fluorobiphenyl (S)	%	64	30-85	12/27/19 17:09	
Terphenyl-d14 (S)	%	113	10-120	12/27/19 17:09	

LABORATORY CONTROL SAMPLE: 1998720

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/L	2	1.1	54	39-88	
2-Methylnaphthalene	ug/L	2	1.1	56	40-93	
Acenaphthene	ug/L	2	1.3	67	43-102	
Acenaphthylene	ug/L	2	1.2	62	42-103	
Anthracene	ug/L	2	1.8	88	52-105	
Benzo(a)anthracene	ug/L	2	1.5	75	39-120	
Benzo(a)pyrene	ug/L	2	1.7	87	57-117	
Benzo(b)fluoranthene	ug/L	2	1.4	72	54-117	
Benzo(g,h,i)perylene	ug/L	2	0.88	44	32-82	
Benzo(k)fluoranthene	ug/L	2	1.9	95	56-123	
Chrysene	ug/L	2	2.5	123	63-122	L1
Dibenz(a,h)anthracene	ug/L	2	0.64	32	23-76	
Fluoranthene	ug/L	2	1.6	78	52-112	
Fluorene	ug/L	2	1.4	69	46-116	
Indeno(1,2,3-cd)pyrene	ug/L	2	1.4	68	49-110	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 5323 VILLAGE OF THIENSVILLE
Pace Project No.: 40201307

LABORATORY CONTROL SAMPLE: 1998720

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/L	2	1.2	59	37-84	
Phenanthrene	ug/L	2	1.3	64	50-104	
Pyrene	ug/L	2	2.0	102	57-123	
Total PAHs	ug/L		25.9			
2-Fluorobiphenyl (S)	%			67	30-85	
Terphenyl-d14 (S)	%			119	10-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1998721 1998722

Parameter	Units	40201307002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	ug/L	0.026J	2	2	0.97	1.0	47	50	35-90	5	27	
2-Methylnaphthalene	ug/L	0.044	2	2	1.0	1.1	50	53	40-93	6	26	
Acenaphthene	ug/L	0.026J	2	2	1.1	1.1	55	56	30-106	2	30	
Acenaphthylene	ug/L	<0.0050	2	2	1.0	1.1	51	53	37-103	5	27	
Anthracene	ug/L	<0.010	2	2	1.2	1.4	60	67	27-107	12	34	
Benzo(a)anthracene	ug/L	<0.0076	2	2	0.86	0.79	43	40	10-120	8	50	
Benzo(a)pyrene	ug/L	<0.011	2	2	0.81	0.83	41	42	10-117	3	50	
Benzo(b)fluoranthene	ug/L	<0.0057	2	2	0.70	0.72	35	36	10-121	3	49	
Benzo(g,h,i)perylene	ug/L	<0.0068	2	2	0.33	0.41	17	20	10-82	21	50	
Benzo(k)fluoranthene	ug/L	<0.0076	2	2	0.92	0.97	46	48	10-123	5	50	
Chrysene	ug/L	<0.013	2	2	1.6	1.7	78	83	17-122	6	36	
Dibenz(a,h)anthracene	ug/L	<0.010	2	2	0.30	0.32	15	16	10-76	7	50	
Fluoranthene	ug/L	<0.011	2	2	1.1	1.2	56	58	27-112	3	42	
Fluorene	ug/L	<0.0080	2	2	1.1	1.1	54	56	38-116	4	29	
Indeno(1,2,3-cd)pyrene	ug/L	<0.018	2	2	0.46	0.48	23	24	10-110	5	50	
Naphthalene	ug/L	0.050J	2	2	1.1	1.2	54	57	35-85	6	28	
Phenanthrene	ug/L	0.014J	2	2	1.0	1.0	51	51	31-106	1	42	
Pyrene	ug/L	0.014J	2	2	1.5	1.5	72	75	30-123	4	31	
Total PAHs	ug/L	0.21			17.1	17.9				4		
2-Fluorobiphenyl (S)	%						57	60	30-85			
Terphenyl-d14 (S)	%						76	74	10-120			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 5323 VILLAGE OF THIENSVILLE
Pace Project No.: 40201307

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-G	Pace Analytical Services - Green Bay

ANALYTE QUALIFIERS

H2	Extraction or preparation was conducted outside of the recognized method holding time.
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results may be biased high.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
P4	Sample field preservation does not meet EPA or method recommendations for this analysis.

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 5323 VILLAGE OF THIENSVILLE
Pace Project No.: 40201307

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40201307001	**SD/B1**	EPA 3010	344768	EPA 6020	344823
40201307002	**SD/B2**	EPA 3510	344412	EPA 8270 by HVI	344421
40201307004	**SD/B6**	EPA 3510	344412	EPA 8270 by HVI	344421
40201307005	**SD/B14**	EPA 3510	344412	EPA 8270 by HVI	344421
40201307006	**SD/B16**	EPA 3510	344412	EPA 8270 by HVI	344421
40201307007	**SD/B28**	EPA 3510	344412	EPA 8270 by HVI	344421
40201307003	**SD/B3**	EPA 8260	344413		

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Pace Analytical®
www.pacelabs.com

BR

4020807

CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)	
Company Name:	Mcgaire Environmental
Branch/Location:	Fredonia
Project Contact:	Dave Lennon
Phone:	262-692-3345
Project Number:	5323
Project Name:	Village of Thiensville Highway Department
Project State:	WI
Sampled By (Print):	Dave Lennon
Sampled By (Sign):	Dave Lennon
PO #:	
Regulatory Program:	

Quote #:	
Mail To Contact:	
Mail To Company:	Mcgaire Env.
Mail To Address:	766 Tower Dr. Fredonia WI 53021
Invoice To Contact:	AS
Invoice To Company:	
Invoice To Address:	Above
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, SL = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	Analyses Requested: FILTERED? (YES/NO)	PRESERVATION (CODE)*	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
	Y / N				N	N			
	Pick Letter				A	B	A		
					PAH	PVOC	Arsenic		
001	SD/B1	12/19/19		GW			✓	* Lab to filter Arsenic Sample	
002	SD/B2	12/19/19		GW	✓	✓	✓ pw DL 12/20/19 LW		
003	SD/B3	12/19/19		GW	✓	✓			
004	SD/B6	12/19/19		GW	✓				
005	SD/B14	12/19/19		GW	✓				
006	SD/B16	12/19/19		GW	✓				
007	SD/B28	12/19/19		GW	✓				
					✓ pw DL 12/20/19 LW				

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):
Email #1:
Email #2:
Telephone:
Fax:

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
Dave Lennon	12/20/19 10:05	Mary Jamin	12/20/19 10:05
Mary Jamin	12/20/19 1530		
C.S Logistics	12/21/19 0825		12/21/19 0825

PACE Project No.
4020807
Receipt Temp = 0.0 °C
Sample Receipt pH OK / Adjusted
Cooler Custody Seal Present / Not Present
Intact / Not Intact

Pace Analytical Services, LLC
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Sample Preservation Receipt Form

Client Name: Moraine Env Project # 40201307

All containers needing preservation have been checked and noted below: □Yes □No ☑N/A

Lab Lot# of pH paper: Lab Std #ID of preservation (if pH adjusted): Initial when completed: Date/ Time:

Pace Lab #	Glass: AG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	Plastic: BP1U	BP2N	BP2Z	BP3U	BP3B	BP3N	BP3S	Vials: DG9A	DG9T	VG9U	VG9H	VG9M	VG9D	Jars: JGFU	WGFU	WPFU	General: SP5T	ZPLC	GN	VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001											1																						2.5 / 5 / 10
002	1																																2.5 / 5 / 10
003																		3															2.5 / 5 / 10
004	1																																2.5 / 5 / 10
005	1																																2.5 / 5 / 10
006	1																																2.5 / 5 / 10
007	1																																2.5 / 5 / 10
008																																	2.5 / 5 / 10
009																																	2.5 / 5 / 10
010																																	2.5 / 5 / 10
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015																																	2.5 / 5 / 10
016																																	2.5 / 5 / 10
017																																	2.5 / 5 / 10
018																																	2.5 / 5 / 10
019																																	2.5 / 5 / 10
020																																	2.5 / 5 / 10

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: _____ Headspace in VOA Vials (>6mm) : □Yes ☑No □N/A ***If yes look in headspace column**

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	DG9A	40 mL amber ascorbic	JGFU	4 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP2N	500 mL plastic HNO3	DG9T	40 mL amber Na Thio	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH, Znact	VG9U	40 mL clear vial unpres	WPFU	4 oz plastic jar unpres
AG4U	120 mL amber glass unpres	BP3U	250 mL plastic unpres	VG9H	40 mL clear vial HCL		
AG5U	100 mL amber glass unpres	BP3B	250 mL plastic NaOH	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres	BP3S	250 mL plastic H2SO4			GN:	

Pace Analytical 1241 Bellevue Street, Green Bay, WI 54302	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: 25Apr2018
	Document No.: **F-GB-C-031-Rev.07**	Issuing Authority: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40201307

40201307

Client Name: Morane Env.

Courier: ☒ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco ☐ Client ☐ Pace Other:

Tracking #: —

Custody Seal on Cooler/Box Present: ☒ yes ☐ no Seals intact: ☒ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other

Thermometer Used SR - NA **Type of Ice:** (Wet) Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: ROI /Corr:

Temp Blank Present: ☐ yes ☒ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C.

Person examining contents:
Date: 12/21/19
Initials: MP

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	12/26/19 SW ~~☒Yes~~ ☒No ☐N/A	2. Analysis not checked. PM received
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3. answer 12/26/19 SW No Collect times.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☒Yes ☐No	6.
Rush Turn Around Time Requested:	☐Yes ☒No	7.
Sufficient Volume:		8.
For Analysis: ☒Yes ☐No MS/MSD:	☐Yes ☒No ☐N/A	
Correct Containers Used:	☒Yes ☐No	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☒N/A	
Containers Intact:	☒Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☒No ☐N/A	11. lab added 20a 250 mL Poly HNO3 lab to filter for 12/21/19 MP
Sample Labels match COC:	☐Yes ☒No ☐N/A	12. 12/26/19 SW Vials placed by PM per client. ID on vials is SDBZ 001. 12/26/19 SW
-Includes date/time/ID/Analysis Matrix: W		
Trip Blank Present:	☐Yes ☒No ☐N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: Date/Time:

Comments/ Resolution: 12/26/19 Samples ID for analysis per DL. OK to run PAH past hold per DL.) LW 12/26/19

Project Manager Review: LW **Date:** 12/26/19

Page 2 of 2