Rose & Westra
A Division of GZA

GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION MANAGEMENT

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November 30, 2018
File: 16.0062677.81

Ms. Abigail Hendershott
Michigan Department of Environmental Quality
5th Floor – Unit 10
350 Ottawa Avenue NE
Grand Rapids, MI 49503

Re: Wolverine World Wide, Inc.
Lamoreaux Farms Source Investigation Summary Report

Dear Ms. Hendershott:

Rose & Westra, a Division of GZA GeoEnvironmental, Inc. (R&W/GZA) is presenting this Lamoreaux Farms Soil Investigation Report (Report) on behalf of Wolverine World Wide, Inc. (Wolverine). This Report pertains to the property located at 2105 10 Mile Road, Rockford, Michigan ("Site").

The MDEQ reported that Wolverine waste may have been disposed at a gravel pit near the Site. Based on our evaluation of historical aerial photographs, a portion of a gravel pit was previously located on the northern portion of the Site. Figure 1 presents a Site Plan which includes the overlay of the historical gravel pit on a current aerial photograph.

The aerial photographs suggest disturbances in the gravel pit area ceased by 1965. A 1953 aerial photograph shows the delineation of the gravel pit north of the Site, in the area of the Lady Lauren cul-de-sac of the Wellington Ridge Development. The 1955 aerial photograph shows the gravel pit extended to the south onto the Site as well as roads providing access to the gravel pit from the south (traversing the Site). The 1965 aerial photograph shows significant vegetative growth in the former gravel pit area (including both the northern area shown on the 1953 aerial photograph and the southern expansion shown on the 1955 aerial photograph). Accordingly, it appears that if waste was disposed of on the Site, it would have ceased by the early 1960s.

Soil Investigation

R&W/GZA utilized a triangular grid approach to the soil investigation shown on Figure 2. The grid points were located approximately 60 feet apart. The 60-ft grid interval was selected based on the EPA statistical model and reflects a 95% confidence level of finding a potential source if it is present.

Borings were advanced using direct push methods to approximately 20-feet below ground surface (bgs). This depth was selected based on our experience with the identified waste depths at the former House Street Disposal site. The soil was logged as well as screened at 2-foot intervals using a photoionization detector (PID) and XRF. For borings where no visual, XRF, or PID screening indicated the likely presence of waste, two samples were collected for laboratory analysis. One sample was collected from a random depth within the top 10 feet and submitted for full laboratory analysis (as listed below). The second

sample was collected from a random interval in the lower 10 ft of the boring and submitted for PFAS analysis only.

The samples were analyzed for the following analytes in accordance with both the Quality Assurance Project Plan (QAPP) developed by R&W/GZA for the EPA and the PFAS QAPP developed for MDEQ:

- Volatile organic compounds (VOCs);
- Semi-volatile organic compounds (SVOCs);
- Metals Al, Sb, As, Ba, Be, B, Cd, Cr Total, Cr VI, Co, Cu, Fe, Pb, Mg, Hg, Mo, Ni, Se, Ag, Na, Ti, Tl, V, and Zn (TAL metals);
- Acetate;
- Formate;
- Total ammonia, nitrate, and nitrite;
- Chloride;
- Cyanide (total and available);
- Total phosphorus;
- Sulfate and sulfide.
- Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by DOD QSM v1.1 (PFAS).

Excess soil was containerized in 55-gallon open-top steel drums and temporarily stored at the Tannery property. Containerized soil will be characterized and sampled. Once analytical results are received, soil will be handled appropriately based on contents.

Investigation Results

Tables 1 through 6 summarize the laboratory data. VOCs and SVOCs were not measured at concentrations greater than Michigan's Part 201 generic residential criteria. Figures 2A, 2B, and 2C depict soil results. Soil boring logs are included in Attachment 1.

There were no constituents detected at concentrations greater than the MDEQ Direct Contact Criteria or Particulate Soil Inhalation Criteria. The following metals were detected at the referenced locations at concentrations greater than the Michigan's generic residential drinking water protection criteria (DWPC):

- Aluminum (SB-01, SB-06, SB-13, SB-15, SB-21, SB-22, SB-23, SB-24, SB-25, SB-27, SB-28, SB-29);
- Arsenic (SB-27);
- Boron (SB-15);
- Cobalt (SB-23);
- Iron (SB-15, SB-23, SB-29);

- Magnesium (SB-02, SB-03, SB-04, SB-07, SB-08, SB-09, SB-10, SB-11, SB-12, SB-13, SB-16, SB-26, SB-27); and,
- Molybdenum (SB-26).

The following metals were detected at the referenced locations at concentrations greater than the Michigan's generic groundwater/surface water interface protection criteria (GSIPC):

- Cobalt (SB-23);
- Selenium (SB-23, SB-29);
- Molybdenum (SB-26); and,
- Arsenic (SB-27).

Phosphorus (all locations) and total cyanide (SB-13) were the only general chemistry compounds detected greater than the GSIPC. Michigan does not have default background concentrations for phosphorus, but in R&W/GZA's experience, it is often found at concentrations ranging in several hundred mg/kg in active and former farm fields.

PFOS concentrations were greater than the GSIP at one location, SB-04 from 1-3 feet bgs.

Monitoring wells located near Lamoreaux Farms were sampled earlier in 2018 for the same constituents. Only aluminum and iron were detected at concentrations greater than the generic Residential Drinking Water Criteria in any of the monitoring wells. The higher concentrations of aluminum in groundwater do not correlate with the higher concentrations of PFOS in groundwater. There were no detections greater than the Groundwater Surface Water Interface Criteria with the exception of PFOS. Tables 7 and 8 present metals and PFAS data for monitoring wells near Lamoreaux Farms.

There are no concentrations greater than direct contact or soil inhalation criteria. Drinking water exposure is the primary potential concern. Residents in the Wellington Ridge neighborhood, located closest to the Lamoreaux Farms investigation area, have all been offered bottled water and either a whole house filter or a point of use filter for their home.

Sincerely,

Rose & Westra, a Division of GZA GeoEnvironmental, Inc.

Leslie M. Nelson, P.E.
Senior Project Manager

Mark Westra
Associate Principal

Attachments: Figures
Tables
Attachment 1: Soil Boring Logs

lmn/maw

c/enc: Mr. Dave Latchana – Wolverine World Wide, Inc. *via email David.Latchana@wwwinc.com*
Mr. John V. Byl – Warner Norcross & Judd LLP *via email* jbyl@wnj.com

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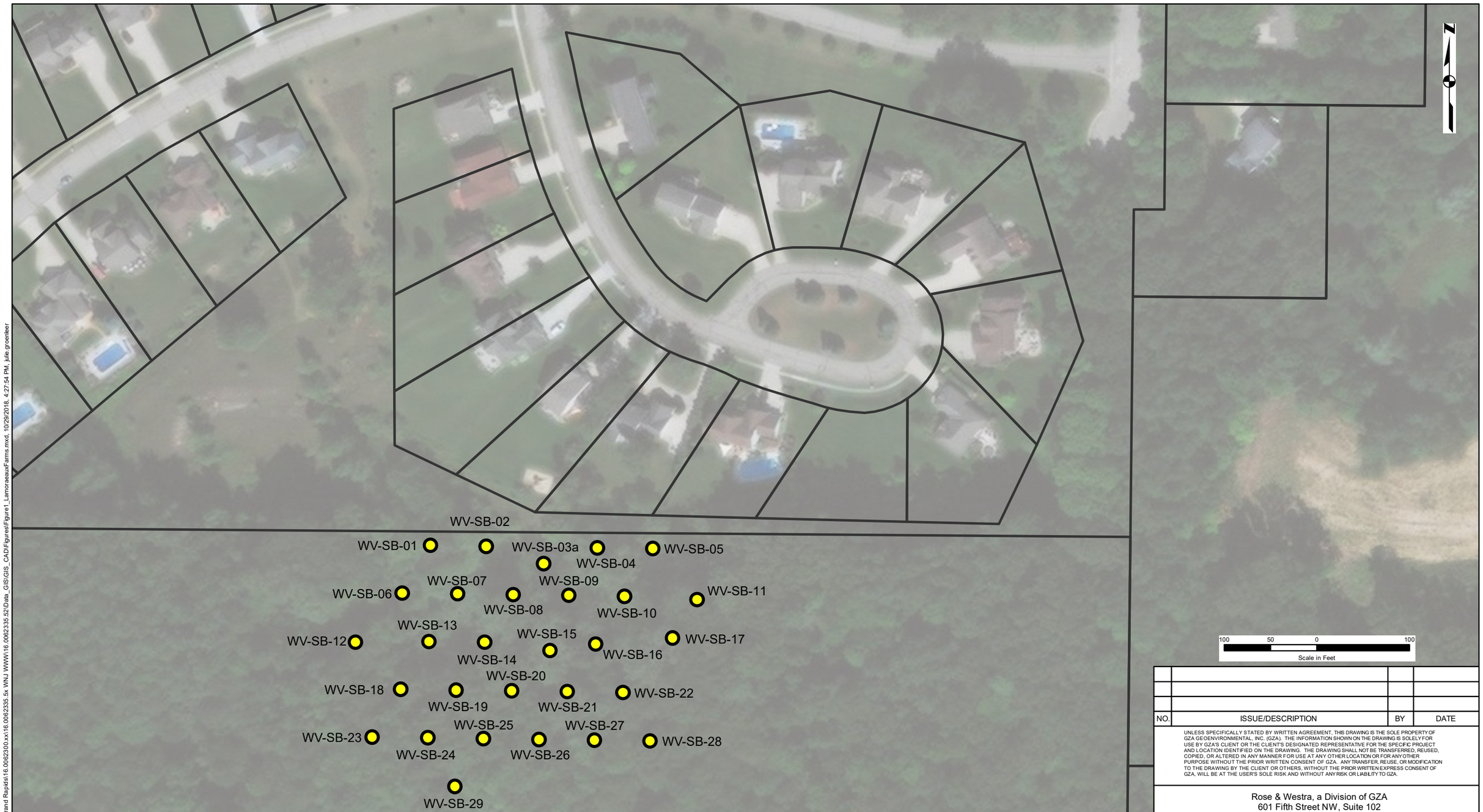

LEGEND

- SOIL SAMPLE LOCATION
- PARCEL BOUNDARY

NOTE:
1. AERIAL PHOTOGRAPH OBTAINED FROM ESRI ONLINE MAP SERVICES ON MONDAY, OCTOBER 29, 2018. SOURCE: ESRI, DIGITALGLOBE,

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SOIL SAMPLING LOCATIONS

GZA GeoEnvironmental, Inc.
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PREPARED FOR: WNJ/WWW

PROJ MGR: LMN	REVIEWED BY: LMN	CHECKED BY: LMN	FIGURE 1
DESIGNED BY: JC	DRAWN BY: JC/JMG	SCALE: AS SHOWN	
DATE: 10-29-2018	PROJECT NO. 16.0062677.81	REVISION NO.	

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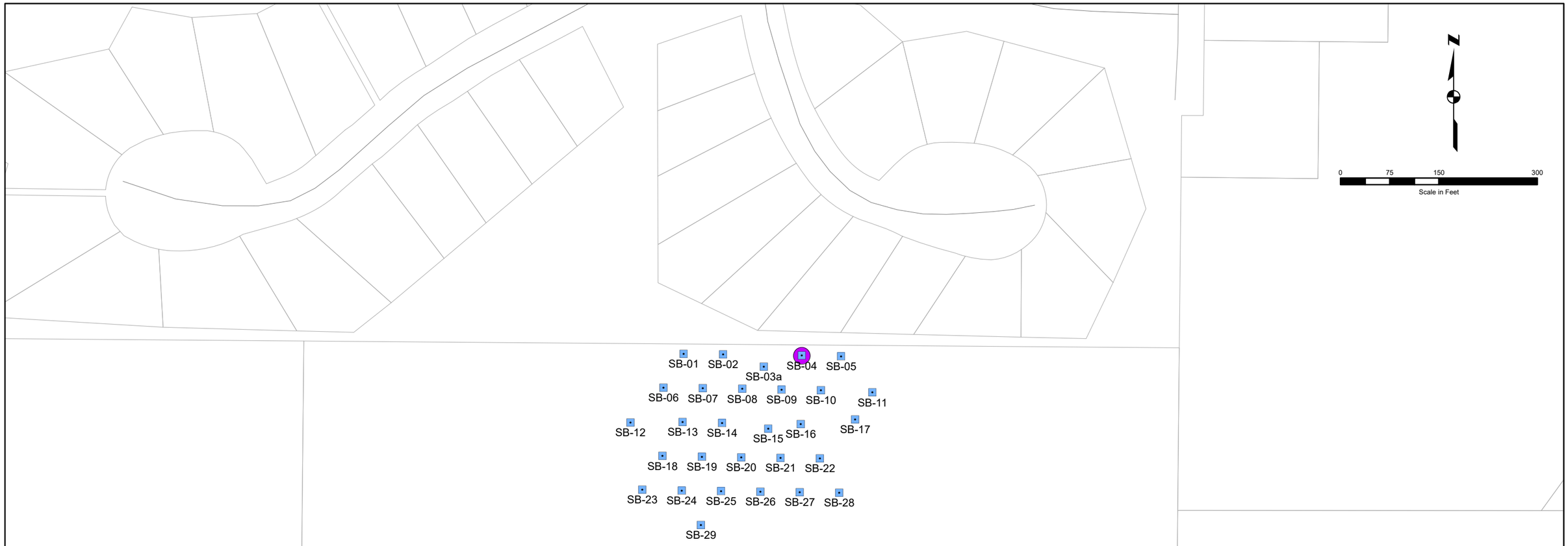

Legend

WOLVEN SOIL SAMPLE LOCATION

WOLVEN SOIL SAMPLE LOCATION

PFAS EXCEEDING RESTRICTIVE CRITERIA IN SOIL

- 1 - 10 (Restrictive Soil Criteria)
- 10 - 100 (Restrictive Soil Criteria)
- 100 - 1000 (Restrictive Soil Criteria)

NOTES:
1. "SOIL RESTRICTIVE CRITERIA" DENOTES THE MOST RESTRICTIVE OF THE FOLLOWING MDEQ PART 201 GENERIC SOIL CLEANUP CRITERIA FOR RESIDENTIAL USES: DRINKING WATER PROTECTION CRITERIA, GROUNDWATER-SURFACE WATER INTERFACE PROTECTION CRITERIA, SOIL VOLATILIZATION TO INDOOR AIR INHALATION PROTECTION CRITERIA, SOIL VOLATILIZATION TO AMBIENT AIR INHALATION CRITERIA, SOIL PARTICULATE INHALATION CRITERIA, AND SOIL DIRECT CONTACT CRITERIA.

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SPATIAL DISTRIBUTION OF PFAS IN SOIL
WOLVEN STUDY AREA

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PREPARED FOR:
WOLVERINE WORLD WIDE, INC.

PROJ MGR: LIP	REVIEWED BY: LIP	CHECKED BY: LIP	FIGURE 2A
DESIGNED BY: JC	DRAWN BY: JC	SCALE: 1"=2000'	
DATE: 11-30-18	PROJECT NO. 16.0062778.81	REVISION NO.	

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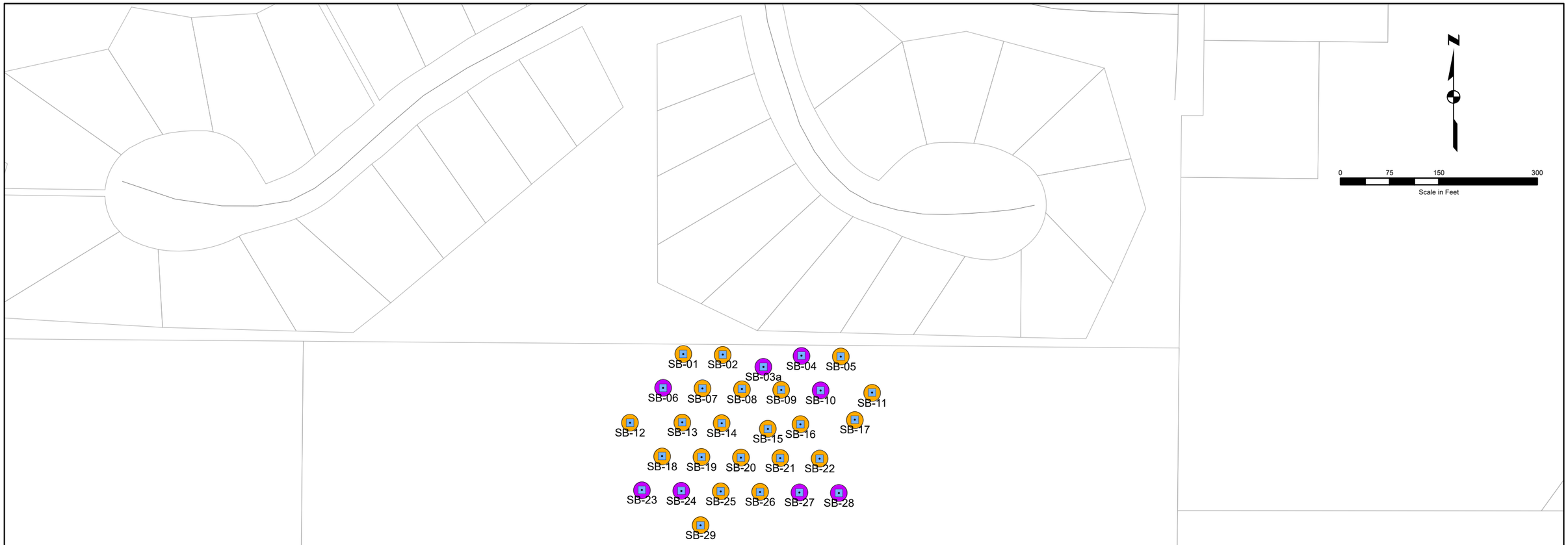

Legend

WOLVEN SOIL SAMPLE LOCATION

WOLVEN SOIL SAMPLE LOCATION

GENERAL CHEMISTRY EXCEEDING RESTRICTIVE CRITERIA IN SOIL

- 1 - 10 (Restrictive Soil Criteria)
- 10 - 100 (Restrictive Soil Criteria)
- 100 - 1000 (Restrictive Soil Criteria)

NOTES:
1. "SOIL RESTRICTIVE CRITERIA" DENOTES THE MOST RESTRICTIVE OF THE FOLLOWING MDEQ PART 201 GENERIC SOIL CLEANUP CRITERIA FOR RESIDENTIAL USES: DRINKING WATER PROTECTION CRITERIA, GROUNDWATER-SURFACE WATER INTERFACE PROTECTION CRITERIA, SOIL VOLATILIZATION TO INDOOR AIR INHALATION PROTECTION CRITERIA, SOIL VOLATILIZATION TO AMBIENT AIR INHALATION CRITERIA, SOIL PARTICULATE INHALATION CRITERIA, AND SOIL DIRECT CONTACT CRITERIA.

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SPATIAL DISTRIBUTION OF GENERAL CHEMISTRY IN SOIL
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PROJ MGR: LIP	REVIEWED BY: LIP	CHECKED BY: LIP	FIGURE 2B
DESIGNED BY: JC	DRAWN BY: JC	SCALE: 1"=2000'	
DATE: 11-30-18	PROJECT NO. 16.0062778.81	REVISION NO.	

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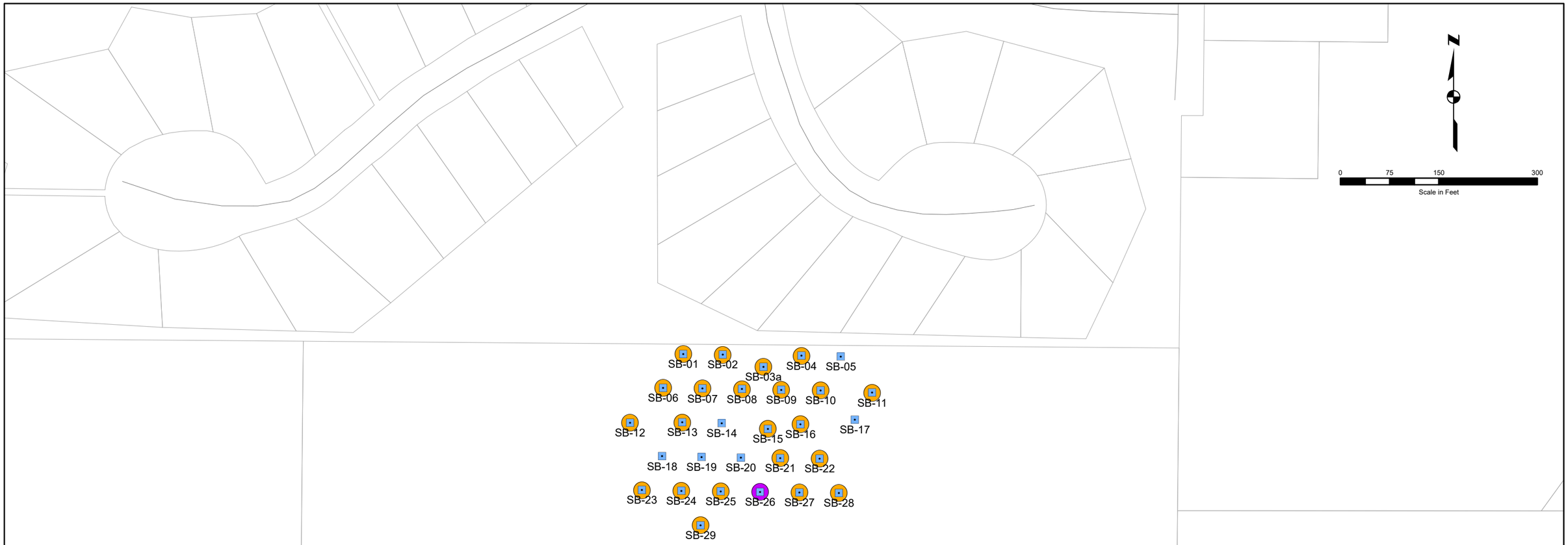

Legend

WOLVEN SOIL SAMPLE LOCATION

WOLVEN SOIL SAMPLE LOCATION

METALs EXCEDDING RESTRICTIVE CRITERIA IN SOIL

- 1 - 10 (Restrictive Soil Criteria)
- 10 - 100 (Restrictive Soil Criteria)
- 100 - 1000 (Restrictive Soil Criteria)

NOTES:
1. "SOIL RESTRICTIVE CRITERIA" DENOTES THE MOST RESTRICTIVE OF THE FOLLOWING MDEQ PART 201 GENERIC SOIL CLEANUP CRITERIA FOR RESIDENTIAL USES: DRINKING WATER PROTECTION CRITERIA, GROUNDWATER-SURFACE WATER INTERFACE PROTECTION CRITERIA, SOIL VOLATILIZATION TO INDOOR AIR INHALATION PROTECTION CRITERIA, SOIL VOLATILIZATION TO AMBIENT AIR INHALATION CRITERIA, SOIL PARTICULATE INHALATION CRITERIA, AND SOIL DIRECT CONTACT CRITERIA.

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SPATIAL DISTRIBUTION OF METALs IN SOIL
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PROJ MGR: LIP	REVIEWED BY: LIP	CHECKED BY: LIP	FIGURE 2C
DESIGNED BY: JC	DRAWN BY: JC	SCALE: 1"=2000'	
DATE: 11-30-18	PROJECT NO. 16.0062778.81	REVISION NO.	

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TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - VOCS
Lamoraeux Farms Site
Algoma Township, Kent County, Michigan

Sample Location	Part 201 Generic Residential Soil Cleanup Criteria – Drinking Water Protection	Part 201 Generic Groundwater Cleanup Criteria – Groundwater Surface Water Interface	Part 201 Generic Residential Soil Cleanup Criteria – Soil Volatilization to Indoor Air Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Infinite Source Volatile Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Particulate Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Direct Contact	WV-SB-01	WV-SB-02	WV-SB-03a	WV-SB-04	WV-SB-04	WV-SB-05	WV-SB-06	WV-SB-07	WV-SB-08	WV-SB-09	WV-SB-10	WV-SB-11
Sample Name							WV-SB-01 (7-9)	WV-SB-02 (7-9)	WV-SB-03a (2-4)	WV-SB-04 (1-3)	WV-SB-04 (1-3) DUP	WV-SB-05 (5-7)	WV-SB-06 (2-4)	WV-SB-07 (7-9)	WV-SB-08 (6-8)	WV-SB-09 (7-9)	WV-SB-10 (6-8)	WV-SB-11 (8-10)
Depth Interval (Feet below ground surface)							7 - 9	7 - 9	2 - 4	1 - 3	1 - 3	5 - 7	2 - 4	7 - 9	6 - 8	7 - 9	6 - 8	8 - 10
Laboratory Sample ID(s)							TI19030-006	TI19030-001	TI19030-008	TI19030-010	TI19030-011	TI19030-013	TI25013-001	TI19030-005	TI19030-003	TI20083-001	TI20083-003	TI26013-001
Sample Date							9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/24/2018	9/18/2018	9/18/2018	9/19/2018	9/19/2018	9/25/2018
Parameter (µg/kg)																		
Acetone	15,000	34,000	290,000,000 (C)	130,000,000	390,000,000,000	23,000,000	<540	<530	<510	<520	<520	<550	120 [J]	<540	<510	110 [J]	150 [J]	<560
Benzene	100	240 (X)	1,600	13,000	380,000,000	180,000	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
Bromodichloromethane	1,600 (W)	ID	1,200	9,100	84,000,000	110,000	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
Bromoform	1,600 (W)	ID	150,000	900,000	2,800,000,000	820,000	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
2-Butanone (MEK)	260,000	44,000	54,000,000 (C)	29,000,000	67,000,000,000	120,000,000 (C, DD)	<540	<530	<510	<520	<520	<550	<570	<540	<510	<520	<580	<560
Bromomethane (Methyl bromide)	200	100	860	11,000	330,000,000	320,000	<110	<110	<100	<100	<100	<110	<110	<110	<100	<100	<120	<110
Carbon disulfide	16,000	ID	76,000.00	1,300,000	47,000,000,000	7,200,000 (C, DD)	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
Carbon tetrachloride	100	94 (X)	190	3,500	130,000,000	96,000	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
Chlorobenzene	2,000	500	120,000	770,000	4,700,000,000	4300000 (C)	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
Chloroethane	8,600	3,400 (X)	2,900,000 (C)	30,000,000	670,000,000,000	2600000 (C)	<110	<110	<100	<100	<100	<110	<110	<110	<100	<100	<120	<110
Chloroform	1,600 (W)	7,000	7,200	45,000	1,300,000,000	1,200,000	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
Chloromethane (Methyl chloride)	5,200	ID	2,300	40,000	4,900,000,000	1,600,000 (C)	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
Cyclohexane	NCL	NCL	NCL	NCL	NCL	NCL	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
1,2-Dibromo-3-chloropropane (DBCP)	10 (M)	ID	220	260	560,000	4400 (C)	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
Dibromochloromethane	1,600 (W)	ID	3,900	24,000	130,000,000	110,000.00	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
1,2-Dibromoethane (EDB)	20 (M)	20 (X)	670	1,700	14,000,000	92	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
1,2-Dichlorobenzene	14,000	280	11,000,000 (C)	39,000,000	100,000,000,000	19,000,000 (C)	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
1,3-Dichlorobenzene	170	680	26,000	79,000	200,000,000	200,000 (C)	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
1,4-Dichlorobenzene	1,700	360	19,000	77,000	450,000,000	400,000	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
Dichlorodifluoromethane	95,000	ID	900,000	53,000,000	3,300,000,000,000	52,000,000 (C)	<110	<110	<100	<100	<100	<110	<110	<110	<100	<100	<120	<110
1,1-Dichloroethane	18,000	15,000	230,000	2,100,000	33,000,000,000	27,000,000 (C)	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
1,2-Dichloroethane	100	120 (X)	2,100	6,200	120,000,000	91,000	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
1,1-Dichloroethene	140	2,600	62	1,100	62,000,000	200,000	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
cis-1,2-Dichloroethene	1,400	12,000	22,000	180,000	2,300,000,000	2,500,000 (C)	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
trans-1,2-Dichloroethene	2,000	9,400 (X)	23,000	280,000	4,700,000,000	3,800,000 (C)	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
1,2-Dichloropropane	100	180 (X)	4,000	25,000	270,000,000	140,000	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
cis-1,3-Dichloropropene	NCL	NCL	NCL	NCL	NCL	NCL	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
trans-1,3-Dichloropropene	NCL	NCL	NCL	NCL	NCL	NCL	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
1,3-Dichloropropene (Calculated: cis + trans)	1,500	360	87,000	720,000	10,000,000,000	22,000,000 (C)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	170	100 (X)	1,000	18,000	780,000,000	10,000	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
2-Hexanone	20,000	ID	990,000	1,100,000	2,700,000,000	32,000,000 (C)	<540	<530	<510	<520	<520	<550	<570	<540	<510	<520	<580	<560
Isopropylbenzene	91,000	3,200	400,000 (C)	1,700,000	5,800,000,000	25,000,000 (C)	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
Methyl acetate	NCL	NCL	NCL	NCL	NCL	NCL	<54	<53	29 [J]	28 [J]	<52	<55	<57	<54	27 [J]	<52	<58	<56
Methyl tertiary butyl ether (MTBE)	800	2,000 (X)	9,900,000 (C)	25,000,000	200,000,000,000	1,500,000	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
4-Methyl-2-pentanone	36,000	ID	37,000,000 (C)	45,000,000	140,000,000,000	56,000,000 (C)	<540	<530	<510	<520	<520	<550	<570	<540	<510	<520	<580	<560
Methylcyclohexane	NCL	NCL	NCL	NCL	NCL	NCL	<270	<270	<250	<260	<260	<270	<290	<270	<250	<260	<290	<280
Methylene chloride	100	940 (X)	45,000	210,000	6,600,000,000	1,300,000	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
Styrene	2,700	530 (X)	250,000	970,000	5,500,000,000	400,000	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
1,1,2,2-Tetrachloroethane	170	64 (X)	4,300	10,000	54,000,000	53,000	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
Tetrachloroethene	100	220 (X)	11,000	170,000	2,700,000,000	200,000 (C)	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
Toluene	16,000	5,400	330,000 (C)	2,800,000	27,000,000,000	50,000,000 (C)	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
1,1,2-Trichloro-1,2,2-Trifluoroethane	9,000,000 (C)	1,700	5,100,000 (C)	180,000,000	5,100,000,000,000	1,000,000,000 (C,D)	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
1,2,4-Trichlorobenzene	4,200	4700 (X)	9,600,000 (C)	28,000,000	25,000,000,000	990,000 (DD)	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
1,1,1-Trichloroethane	4,000	1,800	250,000	3,800,000	67,000,000,000	500,000,000 (C)	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
1,1,2-Trichloroethane	100	240 (X)	4,600	17,000	190,000,000	180,000	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
Trichloroethene	100	580 (X)	1,000	11,000	130,000,000	110,000 (DD)	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
Trichlorofluoromethane	52,000	NA	2,800,000 (C)	92,000,000	3,800,000,000,000	79,000,000 (C)	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
Vinyl chloride	40	40 (X)	270	4,200	350,000,000	3,800	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
Xylenes (total)	5,600	980	6,300,000 (C)	46,000,000	290,000,000,000	410,000,000 (C)	<110	<110	<100	<100	<100	<110	<110	<110	<100	<100	<120	<110
m+p - Xylenes	NCL	NCL	NCL	NCL	NCL	NCL	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
o - Xylenes	NCL	NCL	NCL	NCL	NCL	NCL	<54	<53	<51	<52	<52	<55	<57	<54	<51	<52	<58	<56
Trihalomethanes (Calculation: Bromodichloromentane + Bromoform + Chloroform + Dibromochloromethane)	1,600 (W)	NCL	NCL	NCL	NCL	NCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - VOCS
Lamoraeux Farms Site
Algoma Township, Kent County, Michigan

Sample Location	Part 201 Generic Residential Soil Cleanup Criteria – Drinking Water Protection	Part 201 Generic Groundwater Cleanup Criteria – Groundwater Surface Water Interface	Part 201 Generic Residential Soil Cleanup Criteria – Soil Volatilization to Indoor Air Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Infinite Source Volatile Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Particulate Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Direct Contact	WV-SB-12	WV-SB-13	WV-SB-14	WV-SB-14	WV-SB-15	WV-SB-16	WV-SB-17	WV-SB-18	WV-SB-19	WV-SB-20	WV-SB-21	WV-SB-22
Sample Name							WV-SB-12 (7-9)	WV-SB-13 (3-5)	WV-SB-14 (8-10)	WV-SB-14 (8-10) DUP	WV-SB-15 (1-3)	WV-SB-16 (4-6)	WV-SB-17 (1-3)	WV-SB-18 (1-3)	WV-SB-19 (1-3)	WV-SB-20 (6-8)	WV-SB-21 (7-9)	WV-SB-22 (0-2)
Depth Interval (Feet below ground surface)							7 - 9	3 - 5	8 - 10	8 - 10	1 - 3	4 - 6	1 - 3	1 - 3	1 - 3	6 - 8	7 - 9	0 - 2
Laboratory Sample ID(s)							TI20083-014	TI25013-002	TI20083-007	TI20083-008	TI20083-010	TI20083-005	TI25013-015	TI25013-003	TI25013-005	TI25013-007	TI25013-010	TI25013-013
Sample Date							9/19/2018	9/24/2018	9/19/2018	9/19/2018	9/19/2018	9/19/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018
Parameter (µg/kg)																		
Acetone	15,000	34,000	290,000,000 (C)	130,000,000	390,000,000,000	23,000,000	<510	<450	<580	<610	<530	<540	110 [J]	130 [J]	<580	130 [J]	120 [J]	<550
Benzene	100	240 (X)	1,600	13,000	380,000,000	180,000	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
Bromodichloromethane	1,600 (W)	ID	1,200	9,100	84,000,000	110,000	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
Bromoform	1,600 (W)	ID	150,000	900,000	2,800,000,000	820,000	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
2-Butanone (MEK)	260,000	44,000	54,000,000 (C)	29,000,000	67,000,000,000	120,000,000 (C, DD)	<510	<450	<580	<610	<530	<540	<520	<570	<580	<590	<570	<550
Bromomethane (Methyl bromide)	200	100	860	11,000	330,000,000	320,000	<100	<91	<120	<120	<110	<110	<100	<110	<120	<120	<110	<110
Carbon disulfide	16,000	ID	76,000.00	1,300,000	47,000,000,000	7,200,000 (C, DD)	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
Carbon tetrachloride	100	94 (X)	190	3,500	130,000,000	96,000	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
Chlorobenzene	2,000	500	120,000	770,000	4,700,000,000	4300000 (C)	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
Chloroethane	8,600	3,400 (X)	2,900,000 (C)	30,000,000	670,000,000,000	2600000 (C)	<100	<91	<120	<120	<110	<110	<100	<110	<120	<120	<110	<110
Chloroform	1,600 (W)	7,000	7,200	45,000	1,300,000,000	1,200,000	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
Chloromethane (Methyl chloride)	5,200	ID	2,300	40,000	4,900,000,000	1,600,000 (C)	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
Cyclohexane	NCL	NCL	NCL	NCL	NCL	NCL	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
1,2-Dibromo-3-chloropropane (DBCP)	10 (M)	ID	220	260	560,000	4400 (C)	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
Dibromochloromethane	1,600 (W)	ID	3,900	24,000	130,000,000	110,000.00	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
1,2-Dibromoethane (EDB)	20 (M)	20 (X)	670	1,700	14,000,000	92	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
1,2-Dichlorobenzene	14,000	280	11,000,000 (C)	39,000,000	100,000,000,000	19,000,000 (C)	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
1,3-Dichlorobenzene	170	680	26,000	79,000	200,000,000	200,000 (C)	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
1,4-Dichlorobenzene	1,700	360	19,000	77,000	450,000,000	400,000	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
Dichlorodifluoromethane	95,000	ID	900,000	53,000,000	3,300,000,000,000	52,000,000 (C)	<100	<91	<120	<120	<110	<110	<100	<110	<120	<120	<110	<110
1,1-Dichloroethane	18,000	15,000	230,000	2,100,000	33,000,000,000	27,000,000 (C)	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
1,2-Dichloroethane	100	120 (X)	2,100	6,200	120,000,000	91,000	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
1,1-Dichloroethene	140	2,600	62	1,100	62,000,000	200,000	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
cis-1,2-Dichloroethene	1,400	12,000	22,000	180,000	2,300,000,000	2,500,000 (C)	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
trans-1,2-Dichloroethene	2,000	9,400 (X)	23,000	280,000	4,700,000,000	3,800,000 (C)	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
1,2-Dichloropropane	100	180 (X)	4,000	25,000	270,000,000	140,000	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
cis-1,3-Dichloropropene	NCL	NCL	NCL	NCL	NCL	NCL	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
trans-1,3-Dichloropropene	NCL	NCL	NCL	NCL	NCL	NCL	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
1,3-Dichloropropene (Calculated: cis + trans)	1,500	360	87,000	720,000	10,000,000,000	22,000,000 (C)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	170	100 (X)	1,000	18,000	780,000,000	10,000	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
2-Hexanone	20,000	ID	990,000	1,100,000	2,700,000,000	32,000,000 (C)	<510	<450	<580	<610	<530	<540	<520	<570	<580	<590	<570	<550
Isopropylbenzene	91,000	3,200	400,000 (C)	1,700,000	5,800,000,000	25,000,000 (C)	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
Methyl acetate	NCL	NCL	NCL	NCL	NCL	NCL	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	24 [J]	<55
Methyl tertiary butyl ether (MTBE)	800	2,000 (X)	9,900,000 (C)	25,000,000	200,000,000,000	1,500,000	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
4-Methyl-2-pentanone	36,000	ID	37,000,000 (C)	45,000,000	140,000,000,000	56,000,000 (C)	<510	<450	<580	<610	<530	<540	<520	<570	<580	<590	<570	<550
Methylcyclohexane	NCL	NCL	NCL	NCL	NCL	NCL	<250	<230	<290	<300	<270	<270	<260	<280	<290	<290	<290	<270
Methylene chloride	100	940 (X)	45,000	210,000	6,600,000,000	1,300,000	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
Styrene	2,700	530 (X)	250,000	970,000	5,500,000,000	400,000	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
1,1,2,2-Tetrachloroethane	170	64 (X)	4,300	10,000	54,000,000	53,000	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
Tetrachloroethene	100	220 (X)	11,000	170,000	2,700,000,000	200,000 (C)	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
Toluene	16,000	5,400	330,000 (C)	2,800,000	27,000,000,000	50,000,000 (C)	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
1,1,2-Trichloro-1,2,2-Trifluoroethane	9,000,000 (C)	1,700	5,100,000 (C)	180,000,000	5,100,000,000,000	1,000,000,000 (C,D)	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
1,2,4-Trichlorobenzene	4,200	4700 (X)	9,600,000 (C)	28,000,000	25,000,000,000	990,000 (DD)	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
1,1,1-Trichloroethane	4,000	1,800	250,000	3,800,000	67,000,000,000	500,000,000 (C)	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
1,1,2-Trichloroethane	100	240 (X)	4,600	17,000	190,000,000	180,000	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
Trichloroethene	100	580 (X)	1,000	11,000	130,000,000	110,000 (DD)	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
Trichlorofluoromethane	52,000	NA	2,800,000 (C)	92,000,000	3,800,000,000,000	79,000,000 (C)	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
Vinyl chloride	40	40 (X)	270	4,200	350,000,000	3,800	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
Xylenes (total)	5,600	980	6,300,000 (C)	46,000,000	290,000,000,000	410,000,000 (C)	<100	<91	<120	<120	<110	<110	<100	<110	<120	<120	<110	<110
m+p - Xylenes	NCL	NCL	NCL	NCL	NCL	NCL	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
o - Xylenes	NCL	NCL	NCL	NCL	NCL	NCL	<51	<45	<58	<61	<53	<54	<52	<57	<58	<59	<57	<55
Trihalomethanes (Calculation: Bromodichloromentane + Bromoform + Chloroform + Dibromochloromethane)	1,600 (W)	NCL	NCL	NCL	NCL	NCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - VOCS
Lamoraeux Farms Site
Algoma Township, Kent County, Michigan

Sample Location	Part 201 Generic Residential Soil Cleanup Criteria – Drinking Water Protection	Part 201 Generic Groundwater Cleanup Criteria – Groundwater Surface Water Interface	Part 201 Generic Residential Soil Cleanup Criteria – Soil Volatilization to Indoor Air Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Infinite Source Volatile Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Particulate Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Direct Contact	WV-SB-23	WV-SB-24	WV-SB-25	WV-SB-26	WV-SB-27	WV-SB-28	WV-SB-29
Sample Name							WV-SB-23 (4-6)	WV-SB-24 (7-9)	WV-SB-25 (1-3)	WV-SB-26 (6-8)	WV-SB-27 (7-9)	WV-SB-28 (0-2)	WV-SB-29 (2-4)
Depth Interval (Feet below ground surface)							4 - 6	7 - 9	1 - 3	6 - 8	7 - 9	0 - 2	2 - 4
Laboratory Sample ID(s)							TI26013-009	TI26013-011	TI26013-012	TI26013-016	TI26013-006	TI26013-003	TI26013-014
Sample Date							9/26/2018	9/26/2018	9/26/2018	9/26/2018	9/25/2018	9/25/2018	9/26/2018
Parameter (µg/kg)													
Acetone	15,000	34,000	290,000,000 (C)	130,000,000	390,000,000,000	23,000,000	<620	<500	<530	<640	<600	<550	<570
Benzene	100	240 (X)	1,600	13,000	380,000,000	180,000	<62	<50	<53	<64	<60	<55	<57
Bromodichloromethane	1,600 (W)	ID	1,200	9,100	84,000,000	110,000	<62	<50	<53	<64	<60	<55	<57
Bromoform	1,600 (W)	ID	150,000	900,000	2,800,000,000	820,000	<62	<50	<53	<64	<60	<55	<57
2-Butanone (MEK)	260,000	44,000	54,000,000 (C)	29,000,000	67,000,000,000	120,000,000 (C, DD)	<620	<500	<530	<640	<600	<550	<570
Bromomethane (Methyl bromide)	200	100	860	11,000	330,000,000	320,000	<120	<100	<110	<130	<120	<110	<110
Carbon disulfide	16,000	ID	76,000.00	1,300,000	47,000,000,000	7,200,000 (C, DD)	<62	<50	<53	<64	<60	<55	<57
Carbon tetrachloride	100	94 (X)	190	3,500	130,000,000	96,000	<62	<50	<53	<64	<60	<55	<57
Chlorobenzene	2,000	500	120,000	770,000	4,700,000,000	4300000 (C)	<62	<50	<53	<64	<60	<55	<57
Chloroethane	8,600	3,400 (X)	2,900,000 (C)	30,000,000	670,000,000,000	2600000 (C)	<120	<100	<110	<130	<120	<110	<110
Chloroform	1,600 (W)	7,000	7,200	45,000	1,300,000,000	1,200,000	<62	<50	<53	<64	<60	<55	<57
Chloromethane (Methyl chloride)	5,200	ID	2,300	40,000	4,900,000,000	1,600,000 (C)	<62	<50	<53	<64	<60	<55	<57
Cyclohexane	NCL	NCL	NCL	NCL	NCL	NCL	<62	<50	<53	<64	<60	<55	<57
1,2-Dibromo-3-chloropropane (DBCP)	10 (M)	ID	220	260	560,000	4400 (C)	<62	<50	<53	<64	<60	<55	<57
Dibromochloromethane	1,600 (W)	ID	3,900	24,000	130,000,000	110,000.00	<62	<50	<53	<64	<60	<55	<57
1,2-Dibromoethane (EDB)	20 (M)	20 (X)	670	1,700	14,000,000	92	<62	<50	<53	<64	<60	<55	<57
1,2-Dichlorobenzene	14,000	280	11,000,000 (C)	39,000,000	100,000,000,000	19,000,000 (C)	<62	<50	<53	<64	<60	<55	<57
1,3-Dichlorobenzene	170	680	26,000	79,000	200,000,000	200,000 (C)	<62	<50	<53	<64	<60	<55	<57
1,4-Dichlorobenzene	1,700	360	19,000	77,000	450,000,000	400,000	<62	<50	<53	<64	<60	<55	<57
Dichlorodifluoromethane	95,000	ID	900,000	53,000,000	3,300,000,000,000	52,000,000 (C)	<120	<100	<110	<130	<120	<110	<110
1,1-Dichloroethane	18,000	15,000	230,000	2,100,000	33,000,000,000	27,000,000 (C)	<62	<50	<53	<64	<60	<55	<57
1,2-Dichloroethane	100	120 (X)	2,100	6,200	120,000,000	91,000	<62	<50	<53	<64	<60	<55	<57
1,1-Dichloroethene	140	2,600	62	1,100	62,000,000	200,000	<62	<50	<53	<64	<60	<55	<57
cis-1,2-Dichloroethene	1,400	12,000	22,000	180,000	2,300,000,000	2,500,000 (C)	<62	<50	<53	<64	<60	<55	<57
trans-1,2-Dichloroethene	2,000	9,400 (X)	23,000	280,000	4,700,000,000	3,800,000 (C)	<62	<50	<53	<64	<60	<55	<57
1,2-Dichloropropane	100	180 (X)	4,000	25,000	270,000,000	140,000	<62	<50	<53	<64	<60	<55	<57
cis-1,3-Dichloropropene	NCL	NCL	NCL	NCL	NCL	NCL	<62	<50	<53	<64	<60	<55	<57
trans-1,3-Dichloropropene	NCL	NCL	NCL	NCL	NCL	NCL	<62	<50	<53	<64	<60	<55	<57
1,3-Dichloropropene (Calculated: cis + trans)	1,500	360	87,000	720,000	10,000,000,000	22,000,000 (C)	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	170	100 (X)	1,000	18,000	780,000,000	10,000	<62	<50	<53	<64	<60	<55	<57
2-Hexanone	20,000	ID	990,000	1,100,000	2,700,000,000	32,000,000 (C)	<620	<500	<530	<640	<600	<550	<570
Isopropylbenzene	91,000	3,200	400,000 (C)	1,700,000	5,800,000,000	25,000,000 (C)	<62	<50	<53	<64	<60	<55	<57
Methyl acetate	NCL	NCL	NCL	NCL	NCL	NCL	<62	<50	<53	<64	<60	<55	<57
Methyl tertiary butyl ether (MTBE)	800	2,000 (X)	9,900,000 (C)	25,000,000	200,000,000,000	1,500,000	<62	<50	<53	<64	<60	<55	<57
4-Methyl-2-pentanone	36,000	ID	37,000,000 (C)	45,000,000	140,000,000,000	56,000,000 (C)	<620	<500	<530	<640	<600	<550	<570
Methylcyclohexane	NCL	NCL	NCL	NCL	NCL	NCL	<310	<250	<270	<320	<300	<270	<280
Methylene chloride	100	940 (X)	45,000	210,000	6,600,000,000	1,300,000	<62	<50	<53	<64	<60	<55	<57
Styrene	2,700	530 (X)	250,000	970,000	5,500,000,000	400,000	<62	<50	<53	<64	<60	<55	<57
1,1,2,2-Tetrachloroethane	170	64 (X)	4,300	10,000	54,000,000	53,000	<62	<50	<53	<64	<60	<55	<57
Tetrachloroethene	100	220 (X)	11,000	170,000	2,700,000,000	200,000 (C)	<62	<50	<53	<64	<60	<55	<57
Toluene	16,000	5,400	330,000 (C)	2,800,000	27,000,000,000	50,000,000 (C)	<62	<50	<53	<64	<60	<55	<57
1,1,2-Trichloro-1,2,2-Trifluoroethane	9,000,000 (C)	1,700	5,100,000 (C)	180,000,000	5,100,000,000,000	1,000,000,000 (C,D)	<62	<50	<53	<64	<60	<55	<57
1,2,4-Trichlorobenzene	4,200	4700 (X)	9,600,000 (C)	28,000,000	25,000,000,000	990,000 (DD)	<62	<50	<53	<64	<60	<55	<57
1,1,1-Trichloroethane	4,000	1,800	250,000	3,800,000	67,000,000,000	500,000,000 (C)	<62	<50	<53	<64	<60	<55	<57
1,1,2-Trichloroethane	100	240 (X)	4,600	17,000	190,000,000	180,000	<62	<50	<53	<64	<60	<55	<57
Trichloroethene	100	580 (X)	1,000	11,000	130,000,000	110,000 (DD)	<62	<50	<53	<64	<60	<55	<57
Trichlorofluoromethane	52,000	NA	2,800,000 (C)	92,000,000	3,800,000,000,000	79,000,000 (C)	<62	<50	<53	<64	<60	<55	<57
Vinyl chloride	40	40 (X)	270	4,200	350,000,000	3,800	<62	<50	<53	<64	<60	<55	<57
Xylenes (total)	5,600	980	6,300,000 (C)	46,000,000	290,000,000,000	410,000,000 (C)	<120	<100	<110	<130	<120	<110	<110
m+p - Xylenes	NCL	NCL	NCL	NCL	NCL	NCL	<62	<50	<53	<64	<60	<55	<57
o - Xylenes	NCL	NCL	NCL	NCL	NCL	NCL	<62	<50	<53	<64	<60	<55	<57
Trihalomethanes (Calculation: Bromodichloromentane + Bromoform + Chloroform + Dibromochloromethane)	1,600 (W)	NCL	NCL	NCL	NCL	NCL	ND	ND	ND	ND	ND	ND	ND

TABLE 2
SUMMARY OF SOIL SAMPLE ANALYSIS - SVOCS
Lamoraeux Farms Site
Algoma Township, Kent County, Michigan

Sample Location	Part 201 Generic Residential Soil Cleanup Criteria – Drinking Water Protection	Part 201 Generic Groundwater Cleanup Criteria – Groundwater Surface Water Interface	Part 201 Generic Residential Soil Cleanup Criteria – Soil Volatilization to Indoor Air Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Infinite Source Volatile Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Particulate Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Direct Contact	WV-SB-01	WV-SB-02	WV-SB-03a	WV-SB-04	WV-SB-04	WV-SB-05	WV-SB-06	WV-SB-07	WV-SB-08	WV-SB-09	WV-SB-10	WV-SB-11
Sample Name							WV-SB-01 (7-9)	WV-SB-02 (7-9)	WV-SB-03a (2-4)	WV-SB-04 (1-3)	WV-SB-04 (1-3) DUP	WV-SB-05 (5-7)	WV-SB-06 (2-4)	WV-SB-07 (7-9)	WV-SB-08 (6-8)	WV-SB-09 (7-9)	WV-SB-10 (6-8)	WV-SB-11 (8-10)
Depth Interval (Feet below ground surface)							7 - 9	7 - 9	2 - 4	1 - 3	1 - 3	5 - 7	2 - 4	7 - 9	6 - 8	7 - 9	6 - 8	8 - 10
Laboratory Sample ID(s)							TI19030-006	TI19030-001	TI19030-008	TI19030-010	TI19030-011	TI19030-013	TI25013-001	TI19030-005	TI19030-003	TI20083-001	TI20083-003	TI26013-001
Sample Date							9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/24/2018	9/18/2018	9/18/2018	9/19/2018	9/19/2018	9/25/2018
Parameter (µg/kg)																		
Acenaphthene	300,000	8,700	190,000,000	81,000,000	14,000,000,000	41,000,000	<14	<13	<14	<14	<14	<13	<72	<14	<14	<13	<14	<13
Acenaphthylene	5,900	ID	1,600,000	2,200,000	2,300,000,000	1,600,000	<14	<13	<14	<14	<14	<13	<72	<14	<14	<13	<14	<13
Acetophenone	30,000	ID	120,000,000 (C)	44,000,000	33,000,000,000	47,000,000 (C)	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
Anthracene	41,000	ID	1,000,000,000 (D)	1,400,000,000	67,000,000,000	230,000,000	<14	<13	<14	<14	<14	<13	<72	<14	<14	<13	<14	<13
Atrazine	60	150	NLV	NLV	ID	71,000 (DD)	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
Benzidine	1,000 (M)	1,000 (M)	NLV	NLV	46,000	1,000 (M)	<360	<340	<350	<350	<350	<340	<1,800	<360	<360	<340	<360	<330
Benzo(a)anthracene	NLL	NLL	NLV	NLV	ID	20,000	<14	<13	<14	<14	<14	<13	<72	<14	<14	<13	<14	<13
Benzo(a)pyrene	NLL	NLL	NLV	NLV	1,500,000	2,000	<14	<13	<14	<14	<14	<13	<72	<14	<14	<13	<14	<13
Benzo(b)fluoranthene	NLL	NLL	ID	ID	ID	20,000	<14	<13	<14	<14	<14	<13	<72	<14	<14	<13	<14	<13
Benzo(g,h,i)perylene	NLL	NLL	NLV	NLV	800,000,000	2,500,000	<14	<13	<14	<14	<14	<13	<72	<14	<14	<13	<14	<13
Benzo(k)fluoranthene	NLL	NLL	NLV	NLV	ID	200,000	<14	<13	<14	<14	<14	<13	<72	<14	<14	<13	<14	<13
Butyl benzyl phthalate	2,200,000 (C)	13,000 (X)	NLV	NLV	47,000,000,000	36,000,000 (C)	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
Caprolactam	120,000	NA	NLV	NLV	670,000,000	53,000,000 (DD)	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
Carbazole	9,400	1,100	NLV	NLV	62,000,000	530,000	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
4-Chloro-3-methyl phenol	5,800	280	NLV	NLV	ID	4,500,000	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
bis(2-Chloroethyl)ether	100	100 (M)	8,300	3,800	9,400,000	13,000	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
2-Chloronaphthalene	620,000	NA	ID	ID	ID	56,000,000	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
2-Chlorophenol	900	360	430,000	960,000	1,200,000,000	1,400,000	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
Chrysene	NLL	NLL	ID	ID	ID	2,000,000	<14	<13	<14	<14	<14	<13	<72	<14	<14	<13	<14	<13
Dibenzo(a,h)anthracene	NLL	NLL	NLV	NLV	ID	2,000	<14	<13	<14	<14	<14	<13	<72	<14	<14	<13	<14	<13
Dibenzofuran	ID	1,700	2,000,000	130,000	6,700,000	ID	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
3,3'-Dichlorobenzidine	2,000 (M)	2,000 (M)	NLV	NLV	6,500,000	6,600	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
2,4-Dichlorophenol	1,500	330 (M)	NLV	NLV	5,100,000,000	660,000 (DD)	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
Diethylphthalate	110,000	2,200	NLV	NLV	3,300,000,000	170,000,000 (C)	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
Dimethyl phthalate	1,500,000 (C)	NA	NLV	NLV	3,300,000,000	1,000,000,000 (C,D)	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
2,4-Dimethylphenol	7,400	7,600	NLV	NLV	4,700,000,000	11,000,000	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
Di-n-butyl phthalate	960,000 (C)	11,000	NLV	NLV	3,300,000,000	27,000,000 (C)	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
4,6-Dinitro-2-methylphenol	830 (M)	NA	NLV	NLV	130,000,000	79,000	<360	<340	<350	<350	<350	<340	<1,800	<360	<360	<340	<360	<330
2,4-Dinitrotoluene	430	NA	NLV	NLV	16,000,000	48,000	<140	<130	<140	<140	<140	<130	<720	<140	<140	<130	<140	<130
Di-n-octylphthalate	100,000,000	ID	NLV	NLV	31,000,000,000	6,900,000	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
1,2-Diphenylhydrazine(as azobenzene)	4,200	ID	6,100,000	630,000	100,000,000	140,000	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
bis(2-Ethylhexyl)phthalate	NLL	NLL	NLV	NLV	700,000,000	2,800,000	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
Fluoranthene	730,000	5,500	1,000,000,000 (D)	740,000,000	9,300,000,000	46,000,000	<14	<13	<14	<14	<14	<13	<72	<14	<14	<13	<14	<13
Fluorene	390,000	5,300	580,000,000	130,000,000	9,300,000,000	27,000,000	<14	<13	<14	<14	<14	<13	<72	<14	<14	<13	<14	<13
Hexachlorobenzene	1,800	350	41,000	17,000	6,800,000	8,900	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
Hexachlorobutadiene	26,000	91	130,000	130,000	140,000,000	100,000	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
Hexachlorocyclopentadiene	320,000	ID	30,000	50,000	13,000,000	2,300,000 (C)	<360	<340	<350	<350	<350	<340	<1,800	<360	<360	<340	<360	<330
Hexachloroethane	430	310 (X)	40,000	550,000	230,000,000	230,000	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
Indeno(1,2,3-c,d)pyrene	NLL	NLL	NLV	NLV	ID	20,000	<14	<13	<14	<14	<14	<13	<72	<14	<14	<13	<14	<13
Isophorone	15,000	6,200 (X)	NLV	NLV	12,000,000,000	4,800,000 (C)	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
2-Methylnaphthalene	57,000	4,200	2,700,000	1,500,000	670,000,000	8,100,000	<14	<13	<14	<14	<14	<13	<72	<14	<14	<13	<14	<13
2-Methylphenol	NCL	NCL	NCL	NCL	NCL	NCL	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
3+4-Methylphenol	NCL	NCL	NCL	NCL	NCL	NCL	<140	<130	<140	<140	<140	<130	<720	<140	<140	<130	<140	<130
Naphthalene	35,000	730	250,000	300,000	200,000,000	16,000,000	<14	<13	<14	<14	<14	<13	<72	<14	<14	<13	<14	<13
Nitrobenzene	330 (M)	330 (X)	91,000	54,000	47,000,000	100,000	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
2-Nitrophenol	400	ID	NLV	NLV	ID	630,000	<140	<130	<140	<140	<140	<130	<720	<140	<140	<130	<140	<130
N-Nitrosodi-n-propylamine	330 (M)	NA	NLV	NLV	1,600,000	1,200	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
N-Nitrosodiphenylamine (Diphenylamine)	5,400	NA	NLV	NLV	2,200,000,000	1,700,000	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
Pentachlorophenol	22	17,000 (G,X)	NLV	NLV	100,000,000	90,000	<360	<340	<350	<350	<350	<340	<1,800	<360	<360	<340	<360	<330
Phenanthrene	56,000	2,100	2,800,000	160,000	6,700,000	1,600,000	<14	<13	<14	<14	<14	<13	<72	<14	<14	<13	<14	<13
Phenol	88,000	9,000	NLV	NLV	40,000,000,000	40,000,000 (C, DD)	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
Pyrene	480,000	ID	1,000,000,000 (D)	650,000,000	6,700,000,000	29,000,000	<14	<13	<14	<14	<14	<13	<72	<14	<14	<13	<14	<13
2,4,5-Trichlorophenol	39,000	NA	NLV	NLV	23,000,000,000	23,000,000	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67
2,4,6-Trichlorophenol	2,400	330 (M)	NLV	NLV	1,000,000,000	710,000	<73	<69	<71	<70	<71	<68	<370	<73	<73	<68	<74	<67

TABLE 2
SUMMARY OF SOIL SAMPLE ANALYSIS - SVOCS
Lamoraeux Farms Site
Algoma Township, Kent County, Michigan

Sample Location	Part 201 Generic Residential Soil Cleanup Criteria – Drinking Water Protection	Part 201 Generic Groundwater Cleanup Criteria – Groundwater Surface Water Interface	Part 201 Generic Residential Soil Cleanup Criteria – Soil Volatilization to Indoor Air Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Infinite Source Volatile Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Particulate Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Direct Contact	WV-SB-12	WV-SB-13	WV-SB-14	WV-SB-14	WV-SB-15	WV-SB-16	WV-SB-17	WV-SB-18	WV-SB-19	WV-SB-20	WV-SB-21	WV-SB-22
Sample Name							WV-SB-12 (7-9)	WV-SB-13 (3-5)	WV-SB-14 (8-10)	WV-SB-14 (8-10) DUP	WV-SB-15 (1-3)	WV-SB-16 (4-6)	WV-SB-17 (1-3)	WV-SB-18 (1-3)	WV-SB-19 (1-3)	WV-SB-20 (6-8)	WV-SB-21 (7-9)	WV-SB-22 (0-2)
Depth Interval (Feet below ground surface)							7 - 9	3 - 5	8 - 10	8 - 10	1 - 3	4 - 6	1 - 3	1 - 3	1 - 3	6 - 8	7 - 9	0 - 2
Laboratory Sample ID(s)							TI20083-014	TI25013-002	TI20083-007	TI20083-008	TI20083-010	TI20083-005	TI25013-015	TI25013-003	TI25013-005	TI25013-007	TI25013-010	TI25013-013
Sample Date							9/19/2018	9/24/2018	9/19/2018	9/19/2018	9/19/2018	9/19/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018
Parameter (µg/kg)																		
Acenaphthene	300,000	8,700	190,000,000	81,000,000	14,000,000,000	41,000,000	<13	<14	<13	<13	<14	<14	<13	<14	<13	<13	<13	<14
Acenaphthylene	5,900	ID	1,600,000	2,200,000	2,300,000,000	1,600,000	<13	<14	<13	<13	<14	<14	<13	<14	<13	<13	<13	<14
Acetophenone	30,000	ID	120,000,000 (C)	44,000,000	33,000,000,000	47,000,000 (C)	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
Anthracene	41,000	ID	1,000,000,000 (D)	1,400,000,000	67,000,000,000	230,000,000	<13	<14	<13	<13	<14	<14	<13	<14	<13	<13	<13	<14
Atrazine	60	150	NLV	NLV	ID	71,000 (DD)	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
Benzidine	1,000 (M)	1,000 (M)	NLV	NLV	46,000	1,000 (M)	<330	<350	<340	<330	<360	<350	<340	<360	<330	<340	<340	<360
Benzo(a)anthracene	NLL	NLL	NLV	NLV	ID	20,000	<13	<14	<13	<13	<14	<14	<13	<14	<13	<13	<13	<14
Benzo(a)pyrene	NLL	NLL	NLV	NLV	1,500,000	2,000	<13	<14	<13	<13	<14	<14	<13	<14	<13	<13	<13	<14
Benzo(b)fluoranthene	NLL	NLL	ID	ID	ID	20,000	<13	<14	<13	<13	<14	<14	<13	<14	<13	<13	<13	<14
Benzo(g,h,i)perylene	NLL	NLL	NLV	NLV	800,000,000	2,500,000	<13	<14	<13	<13	<14	<14	<13	<14	<13	<13	<13	<14
Benzo(k)fluoranthene	NLL	NLL	NLV	NLV	ID	200,000	<13	<14	<13	<13	<14	<14	<13	<14	<13	<13	<13	<14
Butyl benzyl phthalate	2,200,000 (C)	13,000 (X)	NLV	NLV	47,000,000,000	36,000,000 (C)	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
Caprolactam	120,000	NA	NLV	NLV	670,000,000	53,000,000 (DD)	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
Carbazole	9,400	1,100	NLV	NLV	62,000,000	530,000	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
4-Chloro-3-methyl phenol	5,800	280	NLV	NLV	ID	4,500,000	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
bis(2-Chloroethyl)ether	100	100 (M)	8,300	3,800	9,400,000	13,000	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
2-Chloronaphthalene	620,000	NA	ID	ID	ID	56,000,000	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
2-Chlorophenol	900	360	430,000	960,000	1,200,000,000	1,400,000	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
Chrysene	NLL	NLL	ID	ID	ID	2,000,000	<13	<14	<13	<13	<14	<14	<13	<14	<13	<13	<13	<14
Dibenzo(a,h)anthracene	NLL	NLL	NLV	NLV	ID	2,000	<13	<14	<13	<13	<14	<14	<13	<14	<13	<13	<13	<14
Dibenzofuran	ID	1,700	2,000,000	130,000	6,700,000	ID	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
3,3'-Dichlorobenzidine	2,000 (M)	2,000 (M)	NLV	NLV	6,500,000	6,600	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
2,4-Dichlorophenol	1,500	330 (M)	NLV	NLV	5,100,000,000	660,000 (DD)	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
Diethylphthalate	110,000	2,200	NLV	NLV	3,300,000,000	170,000,000 (C)	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
Dimethyl phthalate	1,500,000 (C)	NA	NLV	NLV	3,300,000,000	1,000,000,000 (C,D)	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
2,4-Dimethylphenol	7,400	7,600	NLV	NLV	4,700,000,000	11,000,000	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
Di-n-butyl phthalate	960,000 (C)	11,000	NLV	NLV	3,300,000,000	27,000,000 (C)	<67	19 [J]	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
4,6-Dinitro-2-methylphenol	830 (M)	NA	NLV	NLV	130,000,000	79,000	<330	<350	<340	<330	<360	<350	<340	<360	<330	<340	<340	<360
2,4-Dinitrotoluene	430	NA	NLV	NLV	16,000,000	48,000	<130	<140	<130	<130	<140	<140	<130	<140	<130	<130	<130	<140
Di-n-octylphthalate	100,000,000	ID	NLV	NLV	31,000,000,000	6,900,000	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
1,2-Diphenylhydrazine(as azobenzene)	4,200	ID	6,100,000	630,000	100,000,000	140,000	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
bis(2-Ethylhexyl)phthalate	NLL	NLL	NLV	NLV	700,000,000	2,800,000	<67	36 [J]	<69	<67	<73	<70	<68	<73	<67	<68	<68	37 [J]
Fluoranthene	730,000	5,500	1,000,000,000 (D)	740,000,000	9,300,000,000	46,000,000	<13	<14	<13	<13	<14	<14	<13	<14	<13	<13	<13	<14
Fluorene	390,000	5,300	580,000,000	130,000,000	9,300,000,000	27,000,000	<13	<14	<13	<13	<14	<14	<13	<14	<13	<13	<13	<14
Hexachlorobenzene	1,800	350	41,000	17,000	6,800,000	8,900	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
Hexachlorobutadiene	26,000	91	130,000	130,000	140,000,000	100,000	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
Hexachlorocyclopentadiene	320,000	ID	30,000	50,000	13,000,000	2,300,000 (C)	<330	<350	<340	<330	<360	<350	<340	<360	<330	<340	<340	<360
Hexachloroethane	430	310 (X)	40,000	550,000	230,000,000	230,000	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
Indeno(1,2,3-c,d)pyrene	NLL	NLL	NLV	NLV	ID	20,000	<13	<14	<13	<13	<14	<14	<13	<14	<13	<13	<13	<14
Isophorone	15,000	6,200 (X)	NLV	NLV	12,000,000,000	4,800,000 (C)	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
2-Methylnaphthalene	57,000	4,200	2,700,000	1,500,000	670,000,000	8,100,000	<13	<14	<13	<13	<14	<14	<13	<14	<13	<13	<13	<14
2-Methylphenol	NCL	NCL	NCL	NCL	NCL	NCL	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
3+4-Methylphenol	NCL	NCL	NCL	NCL	NCL	NCL	<130	<140	<130	<130	<140	<140	<130	<140	<130	<130	<130	<140
Naphthalene	35,000	730	250,000	300,000	200,000,000	16,000,000	<13	<14	<13	<13	<14	<14	<13	<14	<13	<13	<13	<14
Nitrobenzene	330 (M)	330 (X)	91,000	54,000	47,000,000	100,000	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
2-Nitrophenol	400	ID	NLV	NLV	ID	630,000	<130	<140	<130	<130	<140	<140	<130	<140	<130	<130	<130	<140
N-Nitrosodi-n-propylamine	330 (M)	NA	NLV	NLV	1,600,000	1,200	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
N-Nitrosodiphenylamine (Diphenylamine)	5,400	NA	NLV	NLV	2,200,000,000	1,700,000	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
Pentachlorophenol	22	17,000 (G,X)	NLV	NLV	100,000,000	90,000	<330	<350	<340	<330	<360	<350	<340	<360	<330	<340	<340	<360
Phenanthrene	56,000	2,100	2,800,000	160,000	6,700,000	1,600,000	<13	<14	<13	<13	<14	<14	<13	<14	<13	<13	<13	<14
Phenol	88,000	9,000	NLV	NLV	40,000,000,000	40,000,000 (C, DD)	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
Pyrene	480,000	ID	1,000,000,000 (D)	650,000,000	6,700,000,000	29,000,000	<13	<14	<13	<13	<14	<14	<13	<14	<13	<13	<13	<14
2,4,5-Trichlorophenol	39,000	NA	NLV	NLV	23,000,000,000	23,000,000	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74
2,4,6-Trichlorophenol	2,400	330 (M)	NLV	NLV	1,000,000,000	710,000	<67	<70	<69	<67	<73	<70	<68	<73	<67	<68	<68	<74

TABLE 2
SUMMARY OF SOIL SAMPLE ANALYSIS - SVOCS
Lamoraeux Farms Site
Algoma Township, Kent County, Michigan

Sample Location	Part 201 Generic Residential Soil Cleanup Criteria – Drinking Water Protection	Part 201 Generic Groundwater Cleanup Criteria – Groundwater Surface Water Interface	Part 201 Generic Residential Soil Cleanup Criteria – Soil Volatilization to Indoor Air Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Infinite Source Volatile Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Particulate Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Direct Contact	WV-SB-23	WV-SB-24	WV-SB-25	WV-SB-26	WV-SB-27	WV-SB-28	WV-SB-29
Sample Name							WV-SB-23 (4-6)	WV-SB-24 (7-9)	WV-SB-25 (1-3)	WV-SB-26 (6-8)	WV-SB-27 (7-9)	WV-SB-28 (0-2)	WV-SB-29 (2-4)
Depth Interval (Feet below ground surface)							4 - 6	7 - 9	1 - 3	6 - 8	7 - 9	0 - 2	2 - 4
Laboratory Sample ID(s)							TI26013-009	TI26013-011	TI26013-012	TI26013-016	TI26013-006	TI26013-003	TI26013-014
Sample Date							9/26/2018	9/26/2018	9/26/2018	9/26/2018	9/25/2018	9/25/2018	9/26/2018
Parameter (µg/kg)													
Acenaphthene	300,000	8,700	190,000,000	81,000,000	14,000,000,000	41,000,000	<15	<14	<14	<14	<15	<14	<15
Acenaphthylene	5,900	ID	1,600,000	2,200,000	2,300,000,000	1,600,000	<15	<14	<14	<14	<15	<14	<15
Acetophenone	30,000	ID	120,000,000 (C)	44,000,000	33,000,000,000	47,000,000 (C)	<78	<74	<75	<73	<75	<72	<77
Anthracene	41,000	ID	1,000,000,000 (D)	1,400,000,000	67,000,000,000	230,000,000	<15	<14	<14	<14	<15	<14	<15
Atrazine	60	150	NLV	NLV	ID	71,000 (DD)	<78	<74	<75	<73	<75	<72	<77
Benzidine	1,000 (M)	1,000 (M)	NLV	NLV	46,000	1,000 (M)	<390	<370	<370	<360	<370	<360	<380
Benzo(a)anthracene	NLL	NLL	NLV	NLV	ID	20,000	<15	<14	<14	<14	<15	<14	<15
Benzo(a)pyrene	NLL	NLL	NLV	NLV	1,500,000	2,000	<15	<14	<14	<14	<15	<14	<15
Benzo(b)fluoranthene	NLL	NLL	ID	ID	ID	20,000	<15	<14	<14	<14	<15	<14	<15
Benzo(g,h,i)perylene	NLL	NLL	NLV	NLV	800,000,000	2,500,000	<15	<14	<14	<14	<15	<14	<15
Benzo(k)fluoranthene	NLL	NLL	NLV	NLV	ID	200,000	<15	<14	<14	<14	<15	<14	<15
Butyl benzyl phthalate	2,200,000 (C)	13,000 (X)	NLV	NLV	47,000,000,000	36,000,000 (C)	<78	<74	<75	<73	<75	<72	<77
Caprolactam	120,000	NA	NLV	NLV	670,000,000	53,000,000 (DD)	<78	<74	<75	<73	<75	<72	<77
Carbazole	9,400	1,100	NLV	NLV	62,000,000	530,000	<78	<74	<75	<73	<75	<72	<77
4-Chloro-3-methyl phenol	5,800	280	NLV	NLV	ID	4,500,000	<78	<74	<75	<73	<75	<72	<77
bis(2-Chloroethyl)ether	100	100 (M)	8,300	3,800	9,400,000	13,000	<78	<74	<75	<73	<75	<72	<77
2-Chloronaphthalene	620,000	NA	ID	ID	ID	56,000,000	<78	<74	<75	<73	<75	<72	<77
2-Chlorophenol	900	360	430,000	960,000	1,200,000,000	1,400,000	<78	<74	<75	<73	<75	<72	<77
Chrysene	NLL	NLL	ID	ID	ID	2,000,000	<15	<14	<14	<14	<15	<14	<15
Dibenzo(a,h)anthracene	NLL	NLL	NLV	NLV	ID	2,000	<15	<14	<14	<14	<15	<14	<15
Dibenzofuran	ID	1,700	2,000,000	130,000	6,700,000	ID	<78	<74	<75	<73	<75	<72	<77
3,3'-Dichlorobenzidine	2,000 (M)	2,000 (M)	NLV	NLV	6,500,000	6,600	<78	<74	<75	<73	<75	<72	<77
2,4-Dichlorophenol	1,500	330 (M)	NLV	NLV	5,100,000,000	660,000 (DD)	<78	<74	<75	<73	<75	<72	<77
Diethylphthalate	110,000	2,200	NLV	NLV	3,300,000,000	170,000,000 (C)	<78	<74	<75	<73	<75	<72	<77
Dimethyl phthalate	1,500,000 (C)	NA	NLV	NLV	3,300,000,000	1,000,000,000 (C,D)	<78	<74	<75	<73	<75	<72	<77
2,4-Dimethylphenol	7,400	7,600	NLV	NLV	4,700,000,000	11,000,000	<78	<74	<75	<73	<75	<72	<77
Di-n-butyl phthalate	960,000 (C)	11,000	NLV	NLV	3,300,000,000	27,000,000 (C)	<78	<74	<75	<73	<75	<72	<77
4,6-Dinitro-2-methylphenol	830 (M)	NA	NLV	NLV	130,000,000	79,000	<390	<370	<370	<360	<370	<360	<380
2,4-Dinitrotoluene	430	NA	NLV	NLV	16,000,000	48,000	<150	<140	<140	<140	<150	<140	<150
Di-n-octylphthalate	100,000,000	ID	NLV	NLV	31,000,000,000	6,900,000	<78	<74	<75	<73	<75	<72	<77
1,2-Diphenylhydrazine(as azobenzene)	4,200	ID	6,100,000	630,000	100,000,000	140,000	<78	<74	<75	<73	<75	<72	<77
bis(2-Ethylhexyl)phthalate	NLL	NLL	NLV	NLV	700,000,000	2,800,000	<78	<74	<75	<73	<75	<72	<77
Fluoranthene	730,000	5,500	1,000,000,000 (D)	740,000,000	9,300,000,000	46,000,000	<15	<14	<14	<14	<15	<14	<15
Fluorene	390,000	5,300	580,000,000	130,000,000	9,300,000,000	27,000,000	<15	<14	<14	<14	<15	<14	<15
Hexachlorobenzene	1,800	350	41,000	17,000	6,800,000	8,900	<78	<74	<75	<73	<75	<72	<77
Hexachlorobutadiene	26,000	91	130,000	130,000	140,000,000	100,000	<78	<74	<75	<73	<75	<72	<77
Hexachlorocyclopentadiene	320,000	ID	30,000	50,000	13,000,000	2,300,000 (C)	<390	<370	<370	<360	<370	<360	<380
Hexachloroethane	430	310 (X)	40,000	550,000	230,000,000	230,000	<78	<74	<75	<73	<75	<72	<77
Indeno(1,2,3-c,d)pyrene	NLL	NLL	NLV	NLV	ID	20,000	<15	<14	<14	<14	<15	<14	<15
Isophorone	15,000	6,200 (X)	NLV	NLV	12,000,000,000	4,800,000 (C)	<78	<74	<75	<73	<75	<72	<77
2-Methylnaphthalene	57,000	4,200	2,700,000	1,500,000	670,000,000	8,100,000	<15	<14	<14	<14	<15	<14	<15
2-Methylphenol	NCL	NCL	NCL	NCL	NCL	NCL	<78	<74	<75	<73	<75	<72	<77
3+4-Methylphenol	NCL	NCL	NCL	NCL	NCL	NCL	<150	<140	<140	<140	<150	<140	<150
Naphthalene	35,000	730	250,000	300,000	200,000,000	16,000,000	<15	<14	<14	<14	<15	<14	<15
Nitrobenzene	330 (M)	330 (X)	91,000	54,000	47,000,000	100,000	<78	<74	<75	<73	<75	<72	<77
2-Nitrophenol	400	ID	NLV	NLV	ID	630,000	<150	<140	<140	<140	<150	<140	<150
N-Nitrosodi-n-propylamine	330 (M)	NA	NLV	NLV	1,600,000	1,200	<78	<74	<75	<73	<75	<72	<77
N-Nitrosodiphenylamine (Diphenylamine)	5,400	NA	NLV	NLV	2,200,000,000	1,700,000	<78	<74	<75	<73	<75	<72	<77
Pentachlorophenol	22	17,000 (G,X)	NLV	NLV	100,000,000	90,000	<390	<370	<370	<360	<370	<360	<380
Phenanthrene	56,000	2,100	2,800,000	160,000	6,700,000	1,600,000	<15	<14	<14	<14	<15	<14	<15
Phenol	88,000	9,000	NLV	NLV	40,000,000,000	40,000,000 (C, DD)	<78	<74	<75	<73	<75	<72	<77
Pyrene	480,000	ID	1,000,000,000 (D)	650,000,000	6,700,000,000	29,000,000	<15	<14	<14	<14	<15	<14	<15
2,4,5-Trichlorophenol	39,000	NA	NLV	NLV	23,000,000,000	23,000,000	<78	<74	<75	<73	<75	<72	<77
2,4,6-Trichlorophenol	2,400	330 (M)	NLV	NLV	1,000,000,000	710,000	<78	<74	<75	<73	<75	<72	<77

TABLE 3
SUMMARY OF SOIL SAMPLE ANALYSIS - Metals
Lamoraeux Farms Site
Algoma Township, Kent County, Michigan

Sample Location	Statewide Default Background	Part 201 Generic Residential Soil Cleanup Criteria – Drinking Water Protection	Part 201 Generic Groundwater Cleanup Criteria – Groundwater Surface Water Interface	Part 201 Generic Residential Soil Cleanup Criteria – Soil Volatilization to Indoor Air Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Infinite Source Volatile Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Particulate Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Direct Contact	WV-SB-01	WV-SB-02	WV-SB-03a	WV-SB-04	WV-SB-04	WV-SB-05	WV-SB-06	WV-SB-07	WV-SB-08	WV-SB-09	WV-SB-10	WV-SB-11
Sample Name								WV-SB-01 (7-9)	WV-SB-02 (7-9)	WV-SB-03a (2-4)	WV-SB-04 (1-3)	WV-SB-04 (1-3) DUP	WV-SB-05 (5-7)	WV-SB-06 (2-4)	WV-SB-07 (7-9)	WV-SB-08 (6-8)	WV-SB-09 (7-9)	WV-SB-10 (6-8)	WV-SB-11 (8-10)
Depth Interval (Feet below ground surface)								7 - 9	7 - 9	2 - 4	1 - 3	1 - 3	5 - 7	2 - 4	7 - 9	6 - 8	7 - 9	6 - 8	8 - 10
Laboratory Sample ID(s)								TI19030-006	TI19030-001	TI19030-008	TI19030-010	TI19030-011	TI19030-013	TI25013-001	TI19030-005	TI19030-003	TI20083-001	TI20083-003	TI26013-001
Sample Date								9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/24/2018	9/18/2018	9/18/2018	9/19/2018	9/19/2018	9/25/2018
Parameter (µg/kg)																			
Aluminum	6,900,000	1,000	NA	NLV	NLV	ID	50,000,000 (DD)	***9,800,000***	2,800,000	4,100,000	5,900,000	5,300,000	1,100,000	***8,900,000***	6,500,000	3,500,000	2,200,000	4,700,000	1,100,000
Antimony	NA	4,300	1,200 (X)	NLV	NLV	13,000,000	180,000	<530	<440	<420	<470	<490	<510	<480	<480	210 [J]	<440	<460	<510
Arsenic	5,800	4,600	4,600	NLV	NLV	720,000	7,600	1,800	5,400	5,300	3,100	3,300	480 [J]	3,200	3,200	1,300	1,700	1,500	1,400
Barium	75,000	1,300,000	660,000 (G)	NLV	NLV	330,000,000	37,000,000	24,000	11,000	13,000	18,000	17,000	4,900	24,000	18,000	12,000	8,200	17,000	3,400
Beryllium	NA	51,000	320,000 (G)	NLV	NLV	1,300,000	410,000	250	140	190	240	220	71 [J]	460	250	170	120	230	<100
Boron	NA	10,000	80,000 (X)	NLV	NLV	ID	48,000,000 (DD)	3,700 [J]	6,000 [J]	10,000 [J]	6,400 [J]	7,200 [J]	2,800 [J]	<13,000	5,100 [J]	6,000 [J]	4,700 [J]	8,500 [J]	<13,000
Cadmium	1,200	6,000	3,000 (G,X)	NLV	NLV	1,700,000	550,000	<140	43 [J]	34 [J]	29 [J]	37 [J]	<130	48 [J]	<130	<130	33 [J]	28 [J]	<130
Chromium, Total	18,000	NCL	NCL	NCL	NCL	NCL	NCL	10,000	6,300	7,900	8,800	7,800	2,100	15,000	9,100	5,500	6,500	7,100	3,200
Chromium VI	NA	30,000	3,300	NLV	NLV	260,000	2,500,000	<1,100	<1,000	<1,100	<1,100	<1,100	<1,000	<1,100	<1,100	<1,100	<1,000	<1,100	<1,000
Chromium III (Calculated: Total - Chromium VI)	NA	1,000,000,000 (D)	100,0000,000 (G,X)	NLV	NLV	330,000,000	790,000,000	10,000	6,300	7,900	8,800	7,800	2,100	15,000	9,100	5,500	6,500	7,100	3,200
Cobalt	6,800	800	2,000	NLV	NLV	13,000,000	2,600,000	2,500	2,600	3,300	2,800	2,900	790 [J]	5,200	2,600	1,900	2,100	2,500	1,000 [J]
Copper	32,000	5,800,000	100,000 (G)	NLV	NLV	130,000,000	20,000,000	3,200	6,800	8,000	5,700	6,600	1,400	9,900	4,100	3,700	4,700	5,000	2,400 [B]
Iron	12,000,000	6,000	NA	NLV	NLV	ID	160,000,000	8,200,000 [B]	8,800,000 [B]	9,500,000 [B]	8,300,000 [B]	8,700,000 [B]	2,200,000 [B]	12,000,000	7,700,000 [B]	5,500,000 [B]	7,100,000	7,200,000	2,300,000
Lead	21,000	700,000	2,500,000 (G,X)	NLV	NLV	100,000,000	400,000	3,800	3,000	8,700	4,700	4,100	1,000	6,800	4,300	2,300	2,300	2,600	1,400
Magnesium	NA	8,000,000	NA	NLV	NLV	6,700,000,000	1,000,000,000 (D)	1,800,000	***41,000,000***	***41,000,000***	***21,000,000***	***23,000,000***	7,800,000	1,600,000	***16,000,000***	***21,000,000***	***38,000,000***	***25,000,000***	***8,700,000***
Mercury	130	1,700	50 (M)	48,000	52,000	20,000,000	160,000	<83	<85	<82	<84	<79	<80	<82	<83	<88	<83	<89	<83
Molybdenum	NA	1,500	2,400 (X)	NLV	NLV	ID	2,600,000	<2,700	<2,200	<2,100	<2,300	<2,400	<2,500	<2,400	<2,400	<2,400	<2,200	<2,300	<2,600
Nickel	20,000	100,000	100,000 (G)	NLV	NLV	13,000,000	40,000,000	6,000	6,900	7,900	7,200	7,000	1,800	12,000	5,800	4,600	5,500	6,200	2,400
Selenium	410	4,000	400	NLV	NLV	130,000,000	2,600,000	<1,400	<1,200	<1,100	<1,200	<1,300	<1,300	<1,300	<1,300	<1,300	<1,100	<1,200	<1,300
Silver	1,000	4,500	100 (M)	NLV	NLV	6,700,000	2,500,000	<270	<220	<210	<230	<240	<250	<240	<240	<240	<220	<230	<260
Sodium	NCL	NCL	NCL	NCL	NCL	NCL	NCL	<110,000	90,000	62,000 [J]	<94,000	<97,000	<100,000	<97,000	<96,000	<97,000	42,000 [J]	36,000 [J]	<100,000
Thallium	NA	2,300	1,400 (X)	NLV	NLV	13,000,000	35,000	67 [J]	140	56 [J]	58 [J]	75 [J]	<130	130	61 [J]	61 [J]	38 [J]	43 [J]	86 [J]
Titanium	NCL	NCL	NCL	NCL	NCL	NCL	NCL	270,000	170,000	220,000	220,000	200,000	83,000	330,000	200,000	190,000	200,000	230,000	83,000
Vanadium	NA	72,000	430,000	NLV	NLV	ID	750,000 (DD)	17,000	9,100	12,000	14,000	13,000	3,500	24,000	14,000	8,900	11,000	11,000	5,200
Zinc	47,000	2,400,000	230,000 (G)	NLV	NLV	ID	170,000,000	15,000	19,000	21,000	18,000	21,000	4,700	25,000	13,000	11,000	13,000	13,000	7,400 [B]

TABLE 3
SUMMARY OF SOIL SAMPLE ANALYSIS - Metals
Lamoraeux Farms Site
Algoma Township, Kent County, Michigan

Sample Location	Statewide Default Background	Part 201 Generic Residential Soil Cleanup Criteria – Drinking Water Protection	Part 201 Generic Groundwater Cleanup Criteria – Groundwater Surface Water Interface	Part 201 Generic Residential Soil Cleanup Criteria – Soil Volatilization to Indoor Air Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Infinite Source Volatile Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Particulate Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Direct Contact	WV-SB-12	WV-SB-13	WV-SB-14	WV-SB-14	WV-SB-15	WV-SB-16	WV-SB-17	WV-SB-18	WV-SB-19	WV-SB-20	WV-SB-21	WV-SB-22
Sample Name								WV-SB-12 (7-9)	WV-SB-13 (3-5)	WV-SB-14 (8-10)	WV-SB-14 (8-10) DUP	WV-SB-15 (1-3)	WV-SB-16 (4-6)	WV-SB-17 (1-3)	WV-SB-18 (1-3)	WV-SB-19 (1-3)	WV-SB-20 (6-8)	WV-SB-21 (7-9)	WV-SB-22 (0-2)
Depth Interval (Feet below ground surface)								7 - 9	3 - 5	8 - 10	8 - 10	1 - 3	4 - 6	1 - 3	1 - 3	1 - 3	6 - 8	7 - 9	0 - 2
Laboratory Sample ID(s)								TI20083-014	TI25013-002	TI20083-007	TI20083-008	TI20083-010	TI20083-005	TI25013-015	TI25013-003	TI25013-005	TI25013-007	TI25013-010	TI25013-013
Sample Date								9/19/2018	9/24/2018	9/19/2018	9/19/2018	9/19/2018	9/19/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018
Parameter (µg/kg)																			
Aluminum	6,900,000	1,000	NA	NLV	NLV	ID	50,000,000 (DD)	3,500,000	***8,600,000***	6,600,000	6,000,000	***22,000,000***	1,300,000	3,500,000	4,200,000	2,600,000	4,400,000	***8,500,000***	***9,500,000***
Antimony	NA	4,300	1,200 (X)	NLV	NLV	13,000,000	180,000	<450	<500	250 [J]	<430	<490	<450	<520	<450	190 [J]	<480	<510	<430
Arsenic	5,800	4,600	4,600	NLV	NLV	720,000	7,600	2,100	3,100	2,400	2,200	4,700	570	660	1,600	830	2,700	2,400	2,500
Barium	75,000	1,300,000	660,000 (G)	NLV	NLV	330,000,000	37,000,000	8,200	32,000	21,000	20,000	60,000	4,400	17,000	14,000	6,200	20,000	28,000	30,000
Beryllium	NA	51,000	320,000 (G)	NLV	NLV	1,300,000	410,000	180	460	310	270	750	80 [J]	150	170	100	280	400	320
Boron	NA	10,000	80,000 (X)	NLV	NLV	ID	48,000,000 (DD)	7,400 [J]	2,900 [J]	4,600 [J]	4,500 [J]	***13,000***	2,400 [J]	<13,000	<12,000	<12,000	<13,000	<13,000	<11,000
Cadmium	1,200	6,000	3,000 (G,X)	NLV	NLV	1,700,000	550,000	27 [J]	36 [J]	<100	<110	29 [J]	<120	<130	25 [J]	<120	38 [J]	<130	21 [J]
Chromium, Total	18,000	NCL	NCL	NCL	NCL	NCL	NCL	8,000	17,000	8,300	7,400	24,000	2,900	5,800	6,800	4,900	7,500	12,000	12,000
Chromium VI	NA	30,000	3,300	NLV	NLV	260,000	2,500,000	<1,000	<1,100	<1,000	<1,000	<1,100	<1,100	<1,000	<1,100	<1,000	<1,000	<1,100	<1,100
Chromium III (Calculated: Total - Chromium VI)	NA	1,000,000,000 (D)	100,0000,000 (G,X)	NLV	NLV	330,000,000	790,000,000	8,000	17,000	8,300	7,400	24,000	2,900	5,800	6,800	4,900	7,500	12,000	12,000
Cobalt	6,800	800	2,000	NLV	NLV	13,000,000	2,600,000	2,200	5,100	2,500	2,300	5,600	860 [J]	1,400	2,300	1,300	2,200	3,300	3,200
Copper	32,000	5,800,000	100,000 (G)	NLV	NLV	130,000,000	20,000,000	6,300	11,000	6,000	5,500	14,000	1,600	1,800	2,800	1,700	5,900	6,500	5,500
Iron	12,000,000	6,000	NA	NLV	NLV	ID	160,000,000	7,000,000	12,000,000	7,100,000	6,400,000	***17,000,000***	3,200,000	3,900,000	5,900,000	3,900,000	7,600,000	9,500,000	9,300,000
Lead	21,000	700,000	2,500,000 (G,X)	NLV	NLV	100,000,000	400,000	3,100	5,400	3,400	3,200	8,100	1,200	2,000	3,100	1,800	3,400	4,300	4,900
Magnesium	NA	8,000,000	NA	NLV	NLV	6,700,000,000	1,000,000,000 (D)	***23,000,000***	***8,800,000***	1,500,000	1,300,000	4,700,000	***12,000,000***	530,000	700,000	650,000	3,400,000	1,100,000	960,000
Mercury	130	1,700	50 (M)	48,000	52,000	20,000,000	160,000	<85	<89	<83	<81	34 [J]	<85	<84	<90	<82	<79	<88	<86
Molybdenum	NA	1,500	2,400 (X)	NLV	NLV	ID	2,600,000	<2,200	<2,500	<2,000	<2,100	<2,400	<2,300	<2,600	<2,300	<2,300	<2,400	<2,600	<2,100
Nickel	20,000	100,000	100,000 (G)	NLV	NLV	13,000,000	40,000,000	5,800	13,000	6,100	5,600	18,000	2,000	3,900	4,900	3,500	8,500	8,600	8,700
Selenium	410	4,000	400	NLV	NLV	130,000,000	2,600,000	<1,200	<1,300	<1,000	<1,100	<1,300	<1,200	<1,300	<1,200	<1,200	<1,300	<1,300	<1,100
Silver	1,000	4,500	100 (M)	NLV	NLV	6,700,000	2,500,000	<220	<250	<200	<210	<240	<230	<260	<230	<230	<240	<260	<210
Sodium	NCL	NCL	NCL	NCL	NCL	NCL	NCL	33,000 [J]	36,000 [J]	<80,000	<85,000	<98,000	<90,000	<100,000	<90,000	<92,000	<97,000	<100,000	<86,000
Thallium	NA	2,300	1,400 (X)	NLV	NLV	13,000,000	35,000	34 [J]	120 [J]	68 [J]	49 [J]	150	<120	34 [J]	50 [J]	44 [J]	74 [J]	88 [J]	93 [J]
Titanium	NCL	NCL	NCL	NCL	NCL	NCL	NCL	190,000	340,000	200,000	190,000	300,000	140,000	120,000	190,000	140,000	160,000	240,000	210,000
Vanadium	NA	72,000	430,000	NLV	NLV	ID	750,000 (DD)	11,000	23,000	13,000	12,000	31,000	5,900	7,700	12,000	8,200	13,000	18,000	19,000
Zinc	47,000	2,400,000	230,000 (G)	NLV	NLV	ID	170,000,000	13,000	24,000	14,000	12,000	28,000	5,300	10,000	11,000	7,300	17,000	18,000	18,000

TABLE 3
SUMMARY OF SOIL SAMPLE ANALYSIS - Metals
Lamoraeux Farms Site
Algoma Township, Kent County, Michigan

Sample Location	Statewide Default Background	Part 201 Generic Residential Soil Cleanup Criteria – Drinking Water Protection	Part 201 Generic Groundwater Cleanup Criteria – Groundwater Surface Water Interface	Part 201 Generic Residential Soil Cleanup Criteria – Soil Volatilization to Indoor Air Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Infinite Source Volatile Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Particulate Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Direct Contact	WV-SB-23	WV-SB-24	WV-SB-25	WV-SB-26	WV-SB-27	WV-SB-28	WV-SB-29
Sample Name								WV-SB-23 (4-6)	WV-SB-24 (7-9)	WV-SB-25 (1-3)	WV-SB-26 (6-8)	WV-SB-27 (7-9)	WV-SB-28 (0-2)	WV-SB-29 (2-4)
Depth Interval (Feet below ground surface)								4 - 6	7 - 9	1 - 3	6 - 8	7 - 9	0 - 2	2 - 4
Laboratory Sample ID(s)								TI26013-009	TI26013-011	TI26013-012	TI26013-016	TI26013-006	TI26013-003	TI26013-014
Sample Date								9/26/2018	9/26/2018	9/26/2018	9/26/2018	9/25/2018	9/25/2018	9/26/2018
Parameter (µg/kg)														
Aluminum	6,900,000	1,000	NA	NLV	NLV	ID	50,000,000 (DD)	***18,000,000***	***11,000,000***	***7,900,000***	3,400,000	***9,500,000***	***8,600,000***	***15,000,000***
Antimony	NA	4,300	1,200 (X)	NLV	NLV	13,000,000	180,000	<520	<550	<550	<550	<570	<510	<550
Arsenic	5,800	4,600	4,600	NLV	NLV	720,000	7,600	5,300	3,700	2,700	2,800	***7,100***	2,900	4,300
Barium	75,000	1,300,000	660,000 (G)	NLV	NLV	330,000,000	37,000,000	73,000	38,000	20,000	9,100	37,000	31,000	57,000
Beryllium	NA	51,000	320,000 (G)	NLV	NLV	1,300,000	410,000	130	100 [J]	84 [J]	55 [J]	97 [J]	74 [J]	130
Boron	NA	10,000	80,000 (X)	NLV	NLV	ID	48,000,000 (DD)	3,400 [J]	2,800 [J]	<14,000	<14,000	3,100 [J]	<13,000	3,600 [J]
Cadmium	1,200	6,000	3,000 (G,X)	NLV	NLV	1,700,000	550,000	44 [J]	<140	<140	39 [J]	34 [J]	47 [J]	34 [J]
Chromium, Total	18,000	NCL	NCL	NCL	NCL	NCL	NCL	26,000	17,000	13,000	260,000	16,000	12,000	21,000
Chromium VI	NA	30,000	3,300	NLV	NLV	260,000	2,500,000	<1,200	<1,100	<1,100	<1,100	<1,200	<1,100	<1,200
Chromium III (Calculated: Total - Chromium VI)	NA	1,000,000,000 (D)	100,0000,000 (G,X)	NLV	NLV	330,000,000	790,000,000	26,000	17,000	13,000	260,000	16,000	12,000	21,000
Cobalt	6,800	800	2,000	NLV	NLV	13,000,000	2,600,000	***7,500***	4,700	4,500	4,000	4,900	3,500	6,700
Copper	32,000	5,800,000	100,000 (G)	NLV	NLV	130,000,000	20,000,000	20,000 [B]	13,000 [B]	8,100 [B]	14,000 [B]	11,000 [B]	6,700 [B]	16,000 [B]
Iron	12,000,000	6,000	NA	NLV	NLV	ID	160,000,000	***17,000,000***	11,000,000	8,300,000	11,000,000	11,000,000	8,300,000	***15,000,000***
Lead	21,000	700,000	2,500,000 (G,X)	NLV	NLV	100,000,000	400,000	8,300	5,600	4,800	3,100	5,600	5,500	7,300
Magnesium	NA	8,000,000	NA	NLV	NLV	6,700,000,000	1,000,000,000 (D)	2,900,000	1,800,000	1,300,000	***14,000,000***	***10,000,000***	1,200,000	2,300,000
Mercury	130	1,700	50 (M)	48,000	52,000	20,000,000	160,000	23 [J]	<90	<90	<90	<89	<84	<91
Molybdenum	NA	1,500	2,400 (X)	NLV	NLV	ID	2,600,000	<2,600	<2,800	<2,700	***120,000***	<2,800	<2,600	<2,700
Nickel	20,000	100,000	100,000 (G)	NLV	NLV	13,000,000	40,000,000	20,000	13,000	8,500	18,000	14,000	9,400	18,000
Selenium	410	4,000	400	NLV	NLV	130,000,000	2,600,000	***530 [J]***	<1,400	<1,400	<1,400	<1,500	<1,300	***540 [J]***
Silver	1,000	4,500	100 (M)	NLV	NLV	6,700,000	2,500,000	<260	<280	<270	<270	<280	<260	<270
Sodium	NCL	NCL	NCL	NCL	NCL	NCL	NCL	<100,000	<110,000	<110,000	51,000 [J]	70,000 [J]	<100,000	<110,000
Thallium	NA	2,300	1,400 (X)	NLV	NLV	13,000,000	35,000	160	130 [J]	69 [J]	36 [J]	130 [J]	100 [J]	140
Titanium	NCL	NCL	NCL	NCL	NCL	NCL	NCL	340,000	350,000	290,000	180,000	280,000	220,000	330,000
Vanadium	NA	72,000	430,000	NLV	NLV	ID	750,000 (DD)	37,000	25,000	21,000	25,000	26,000	18,000	31,000
Zinc	47,000	2,400,000	230,000 (G)	NLV	NLV	ID	170,000,000	37,000 [B]	24,000 [B]	17,000 [B]	12,000 [B]	23,000 [B]	21,000 [B]	33,000 [B]

TABLE 4
SUMMARY OF SOIL SAMPLE ANALYSIS - General Chemistry
Lamoraeux Farms Site
Algoma Township, Kent County, Michigan

Sample Location	Part 201 Generic Residential Soil Cleanup Criteria – Drinking Water Protection	Part 201 Generic Groundwater Cleanup Criteria – Groundwater Surface Water Interface	Part 201 Generic Residential Soil Cleanup Criteria – Soil Volatilization to Indoor Air Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Infinite Source Volatile Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Particulate Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Direct Contact	WV-SB-01	WV-SB-02	WV-SB-03a	WV-SB-04	WV-SB-04	WV-SB-05	WV-SB-06	WV-SB-07	WV-SB-08	WV-SB-09	WV-SB-10	WV-SB-11
Sample Name							WV-SB-01 (7-9)	WV-SB-02 (7-9)	WV-SB-03a (2-4)	WV-SB-04 (1-3)	WV-SB-04 (1-3) DUP	WV-SB-05 (5-7)	WV-SB-06 (2-4)	WV-SB-07 (7-9)	WV-SB-08 (6-8)	WV-SB-09 (7-9)	WV-SB-10 (6-8)	WV-SB-11 (8-10)
Depth Interval (Feet below ground surface)							7 - 9	7 - 9	2 - 4	1 - 3	1 - 3	5 - 7	2 - 4	7 - 9	6 - 8	7 - 9	6 - 8	8 - 10
Laboratory Sample ID(s)							11903O-006 & 18091149-04A	11903O-001 & 18091149-01A	11903O-008 & 18091149-05A	11903O-010 & 18091149-06A	11903O-011 & 18091149-07A	11903O-013 & 18091149-08A	11Z3013-001 & 18091618-01A	11903O-005 & 18091149-03A	11903O-003 & 18091149-02A	11Z0063-001 & 18091368-01A	11Z0083-003 & 18091368-02A	11Z0015-001 & 18091692-01A
Sample Date							9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/24/2018	9/18/2018	9/18/2018	9/19/2018	9/19/2018	9/25/2018
Parameter (µg/kg)																		
Acetic Acid	84,000	180,000 (G)	NLV	NLV	17,000,000,000	130,000,000	<21,000	<20,000	<20,000	<20,000	<20,000	<20,000	<21,000	<22,000	<21,000	<19,000	<20,000	<18,000
Formic Acid	200,000	ID	1,500,000	210,000	130,000,000	320,000,000 (C)	<21,000	<20,000	<20,000	<20,000	<20,000	<20,000	<21,000	<22,000	<21,000	<19,000	<20,000	<18,000
Cyanide - Total	4,000	100	NLV	NLV	250,000	12,000	100 [BJ]	50 [BJ]	41 [BJ]	74 [BJ]	72 [BJ]	39 [BJ]	48 [BJ]	6.7 [BJ]	40 [BJ]	44 [BJ]	59 [BJ]	61 [BJ]
Cyanide, Available	NCL	NCL	NCL	NCL	NCL	NCL	<43	<41	<42	<42	<43	<41	62	<44	<43	<41	<44	<41
Ammonia - N (gas diffusion)	NCL	NCL	NCL	NCL	NCL	NCL	<1,100	<1,000	<1,100	<1,100	<1,100	<1,000	<1,100	<1,100	<1,100	<1,000	<1,100	<1,000
Nitrate-Nitrite - N (soluble)	NCL	NCL	NCL	NCL	NCL	NCL	270	250	140 [J]	300	250	190 [J]	210 [J]	220	170 [J]	300	310	<210
Nitrate-Nitrite - N + Ammonia - N (Calculated)	200,000 (N)	NCL	NCL	NCL	NCL	NCL	270	250	140	300	250	190	210	220	170	300	310	ND
Chloride (soluble)	5,000,000	1,000,000 (X)	NLV	NLV	ID	500,000 (F)	2,800 [J]	8,400 [J]	7,400 [J]	3,000 [J]	3,300 [J]	3,600 [J]	<11,000	3,000 [J]	3,500 [J]	4,300 [J]	4,500 [J]	3,000 [J]
Phosphorus	1,300,000	20,000 (EE)	NLV	NLV	67,000,000	1,000,000,000 (D)	***59,000***	***160,000***	***260,000***	***210,000***	***140,000***	***48,000***	***260,000***	***76,000***	***110,000***	***170,000***	***210,000***	***47,000***
Sulfate (soluble)	5,000,000	NA	NLV	NLV	ID	ID	<11,000	<10,000	<11,000	<11,000	<11,000	<10,000	<11,000	<11,000	<11,000	<10,000	<11,000	<10,000
Sulfide (Acid Soluble)	NCL	NCL	NCL	NCL	NCL	NCL	<110,000	<100,000	<110,000	<110,000	<110,000	<100,000	<110,000	<110,000	<110,000	<100,000	<110,000	<100,000

TABLE 4
SUMMARY OF SOIL SAMPLE ANALYSIS - General Chemistry
Lamoraeux Farms Site
Algoma Township, Kent County, Michigan

Sample Location	Part 201 Generic Residential Soil Cleanup Criteria – Drinking Water Protection	Part 201 Generic Groundwater Cleanup Criteria – Groundwater Surface Water Interface	Part 201 Generic Residential Soil Cleanup Criteria – Soil Volatilization to Indoor Air Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Infinite Source Volatile Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Particulate Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Direct Contact	WV-SB-12	WV-SB-13	WV-SB-14	WV-SB-14	WV-SB-15	WV-SB-16	WV-SB-17	WV-SB-18	WV-SB-19	WV-SB-20	WV-SB-21	WV-SB-22
Sample Name							WV-SB-12 (7-9)	WV-SB-13 (3-5)	WV-SB-14 (8-10)	WV-SB-14 (8-10) DUP	WV-SB-15 (1-3)	WV-SB-16 (4-6)	WV-SB-17 (1-3)	WV-SB-18 (1-3)	WV-SB-19 (1-3)	WV-SB-20 (6-8)	WV-SB-21 (7-9)	WV-SB-22 (0-2)
Depth Interval (Feet below ground surface)							7 - 9	3 - 5	8 - 10	8 - 10	1 - 3	4 - 6	1 - 3	1 - 3	1 - 3	6 - 8	7 - 9	0 - 2
Laboratory Sample ID(s)							11Z0083-014 & 18091268-07A	11Z5013-002 & 18091618-05A	11Z0083-007 & 18091268-04A	11Z0083-008 & 18091268-05A	11Z0083-010 & 18091268-06A	11Z0083-005 & 18091268-03A	11Z5013-015 & 18091618-08A	11Z5013-003 & 18091618-02A	11Z5013-005 & 18091618-03A	11Z5013-007 & 18091618-04A	11Z5013-010 & 18091618-06A	11Z5013-013 & 18091618-07A
Sample Date							9/19/2018	9/24/2018	9/19/2018	9/19/2018	9/19/2018	9/19/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018
Parameter (µg/kg)																		
Acetic Acid	84,000	180,000 (G)	NLV	NLV	17,000,000,000	130,000,000	<19,000	<21,000	<19,000	<20,000	<23,000	<20,000	<20,000	<21,000	<21,000	<19,000	<22,000	<20,000
Formic Acid	200,000	ID	1,500,000	210,000	130,000,000	320,000,000 (C)	<19,000	<21,000	<19,000	<20,000	<23,000	<20,000	<20,000	<21,000	<21,000	<19,000	<22,000	<20,000
Cyanide - Total	4,000	100	NLV	NLV	250,000	12,000	59 [BJ]	***120 [BJ]***	59 [BJ]	57 [BJ]	79 [BJ]	39 [BJ]	29 [BJ]	<130	51 [BJ]	67 [BJ]	61 [BJ]	78 [BJ]
Cyanide, Available	NCL	NCL	NCL	NCL	NCL	NCL	<41	<47	<41	<42	<45	<42	<40	85	<41	<41	<44	<44
Ammonia - N (gas diffusion)	NCL	NCL	NCL	NCL	NCL	NCL	<1,000	<1,100	<1,000	<1,000	<1,100	<1,100	<1,000	480 [BJ]	<1,000	<1,000	<1,100	520 [J]
Nitrate-Nitrite - N (soluble)	NCL	NCL	NCL	NCL	NCL	NCL	150 [J]	510	42 [J]	73 [J]	100 [J]	130 [J]	95 [J]	46 [J]	46 [J]	140 [J]	110 [J]	120 [J]
Nitrate-Nitrite - N + Ammonia - N (Calculated)	200,000 (N)	NCL	NCL	NCL	NCL	NCL	150	510	42	73	100	130	95	530	46	140	110	640
Chloride (soluble)	5,000,000	1,000,000 (X)	NLV	NLV	ID	500,000 (F)	2,700 [J]	2,200 [J]	<10,000	<10,000	<11,000	2,400 [J]	<10,000	<11,000	<10,000	<10,000	<11,000	<11,000
Phosphorus	1,300,000	20,000 (EE)	NLV	NLV	67,000,000	1,000,000,000 (D)	***170,000***	***160,000***	***75,000***	***88,000***	***140,000***	***100,000***	***180,000***	***140,000***	***95,000***	***100,000***	***92,000***	***100,000***
Sulfate (soluble)	5,000,000	NA	NLV	NLV	ID	ID	<10,000	<11,000	<10,000	<10,000	<11,000	<11,000	<10,000	<11,000	<10,000	<10,000	<11,000	<11,000
Sulfide (Acid Soluble)	NCL	NCL	NCL	NCL	NCL	NCL	<110,000	<120,000	<100,000	<110,000	<120,000	<110,000	<100,000	<110,000	<110,000	<100,000	<110,000	<110,000

TABLE 4
SUMMARY OF SOIL SAMPLE ANALYSIS - General Chemistry
Lamoraeux Farms Site
Algoma Township, Kent County, Michigan

Sample Location	Part 201 Generic Residential Soil Cleanup Criteria – Drinking Water Protection	Part 201 Generic Groundwater Cleanup Criteria – Groundwater Surface Water Interface	Part 201 Generic Residential Soil Cleanup Criteria – Soil Volatilization to Indoor Air Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Infinite Source Volatile Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Particulate Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Direct Contact	WV-SB-23	WV-SB-24	WV-SB-25	WV-SB-26	WV-SB-27	WV-SB-28	WV-SB-29
Sample Name							WV-SB-23 (4-6)	WV-SB-24 (7-9)	WV-SB-25 (1-3)	WV-SB-26 (6-8)	WV-SB-27 (7-9)	WV-SB-28 (0-2)	WV-SB-29 (2-4)
Depth Interval (Feet below ground surface)							4 - 6	7 - 9	1 - 3	6 - 8	7 - 9	0 - 2	2 - 4
Laboratory Sample ID(s)							~~ITI26013-009 & 18091808-01A~~	~~ITI26013-011 & 18091808-02A~~	~~ITI26013-012 & 18091808-03A~~	~~ITI26013-016 & 18091808-05A~~	~~ITI26013-006 & 18091692-03A~~	~~ITI26013-003 & 18091692-02A~~	~~ITI26013-014 & 18091808-04A~~
Sample Date							9/26/2018	9/26/2018	9/26/2018	9/26/2018	9/25/2018	9/25/2018	9/26/2018
Parameter (µg/kg)													
Acetic Acid	84,000	180,000 (G)	NLV	NLV	17,000,000,000	130,000,000	<21,000	<20,000	<22,000	<21,000	<21,000	<20,000	<21,000
Formic Acid	200,000	ID	1,500,000	210,000	130,000,000	320,000,000 (C)	<21,000	<20,000	<22,000	<21,000	<21,000	<20,000	<21,000
Cyanide - Total	4,000	100	NLV	NLV	250,000	12,000	83 [BJ]	90 [BJ]	47 [BJ]	60 [BJ]	42 [BJ]	100 [BJ]	71 [BJ]
Cyanide, Available	NCL	NCL	NCL	NCL	NCL	NCL	<46	<44	<44	<41	<44	56	<44
Ammonia - N (gas diffusion)	NCL	NCL	NCL	NCL	NCL	NCL	<1,200	<1,100	<1,100	<1,100	<1,200	540 [J]	<1,200
Nitrate-Nitrite - N (soluble)	NCL	NCL	NCL	NCL	NCL	NCL	84 [J]	400	500	220	91 [J]	170 [J]	650
Nitrate-Nitrite - N + Ammonia - N (Calculated)	200,000 (N)	NCL	NCL	NCL	NCL	NCL	84	400	500	220	91	710	650
Chloride (soluble)	5,000,000	1,000,000 (X)	NLV	NLV	ID	500,000 (F)	3,400 [J]	<11,000	<11,000	3,300 [J]	3,700 [J]	2,900 [J]	<12,000
Phosphorus	1,300,000	20,000 (EE)	NLV	NLV	67,000,000	1,000,000,000 (D)	***320,000***	***510,000***	***110,000***	***110,000***	***380,000***	***210,000***	***130,000***
Sulfate (soluble)	5,000,000	NA	NLV	NLV	ID	ID	<12,000	<11,000	<11,000	<11,000	14,000	<11,000	<12,000
Sulfide (Acid Soluble)	NCL	NCL	NCL	NCL	NCL	NCL	<120,000	<110,000	<110,000	<100,000	<110,000	<110,000	<110,000

TABLE 5
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
Lamoraeux Farms Site
Algoma Township, Kent County, Michigan

Sample Location	Part 201 Generic Residential Soil Cleanup Criteria – Drinking Water Protection	Part 201 Generic Groundwater Cleanup Criteria – Groundwater Surface Water Interface	Part 201 Generic Residential Soil Cleanup Criteria – Soil Volatilization to Indoor Air Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Infinite Source Volatile Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Particulate Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Direct Contact	WV-SB-01	WV-SB-01	WV-SB-02	WV-SB-02	WV-SB-03a	WV-SB-03a	WV-SB-04	WV-SB-04	WV-SB-04	WV-SB-05	WV-SB-05	WV-SB-06
Sample Name							WV-SB-01 (7-9)	WV-SB-01 (16-18)	WV-SB-02 (7-9)	WV-SB-02 (12-14)	WV-SB-03a (2-4)	WV-SB-032 (17-19)	WV-SB-04 (1-3)	WV-SB-04 (1-3)DUP	WV-SB-04 (11-13)	WV-SB-05 (5-7)	WV-SB-05 (15-17)	WV-SB-06 (2-4)
Depth Interval (Feet below ground surface)							7 - 9	16 - 18	7 - 9	12 - 14	2 - 4	17 - 19	1 - 3	1 - 3	11 - 13	5 - 7	15 - 17	2 - 4
Laboratory Sample ID(s)							TI19030-006	TI19030-007	TI19030-001	TI19030-002	TI19030-008	TI19030-009	TI19030-010	TI19030-011	TI19030-012	TI19030-013	TI19030-014	TI25013-001
Sample Date							9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/24/2018
Parameter (µg/kg)																		
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NCL	NCL	NCL	NCL	NCL	NCL	<10	<9.9	<10	<10	<8.9	<9.5	<11	<10	<10	<9.8	<11	<10
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NCL	NCL	NCL	NCL	NCL	NCL	<10	<9.9	<10	<10	<8.9	<9.5	<11	<10	<10	<9.8	<11	<10
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NCL	NCL	NCL	NCL	NCL	NCL	<2.1	<2	<2	<2.1	<1.8	<1.9	<2.2	<2	<2	<2	<2.2	<2.1
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NCL	NCL	NCL	NCL	NCL	NCL	<2.1	<2	<2	<2.1	<1.8	<1.9	<2.2	<2	<2	<2	<2.2	<2.1
Perfluorobutane sulfonic acid (PFBS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.1	<4.9	<5	<5.2	<4.5	<4.8	<5.6	<5.1	<5.1	<4.9	<5.6	<5.2
Perfluorodecane sulfonic acid (PFDS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.1	<4.9	<5	<5.2	<4.5	<4.8	<5.6	<5.1	<5.1	<4.9	<5.6	<5.2
Perfluoroheptane sulfonic acid (PFHpS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.1	<4.9	<5	<5.2	<4.5	<4.8	<5.6	<5.1	<5.1	<4.9	<5.6	<5.2
Perfluorononane sulfonic acid (PFNS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.1	<4.9	<5	<5.2	<4.5	<4.8	<5.6	<5.1	<5.1	<4.9	<5.6	<5.2
Perfluorooctane sulfonamide (FOSA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.1	<4.9	<5	<5.2	<4.5	<4.8	<5.6	<5.1	<5.1	<4.9	<5.6	<5.2
Perfluoropentane sulfonic acid (PFPeS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.1	<4.9	<5	<5.2	<4.5	<4.8	<5.6	<5.1	<5.1	<4.9	<5.6	<5.2
Perfluorohexane sulfonic acid (PFHxS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.1	<4.9	<5	<5.2	<4.5	<4.8	<5.6	<5.1	<5.1	<4.9	<5.6	<5.2
Perfluorobutanoic acid (PFBA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.1	<4.9	<5	<5.2	<4.5	<4.8	<5.6	<5.1	<5.1	<4.9	<5.6	<5.2
Perfluorodecanoic acid (PFDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.1	<4.9	<5	<5.2	<4.5	<4.8	<5.6	<5.1	<5.1	<4.9	<5.6	<5.2
Perfluorododecanoic acid (PFDoDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.1	<4.9	<5	<5.2	<4.5	<4.8	<5.6	<5.1	<5.1	<4.9	<5.6	<5.2
Perfluoroheptanoic acid (PFHpA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.1	<4.9	<5	<5.2	<4.5	<4.8	<5.6	<5.1	<5.1	<4.9	<5.6	<5.2
Perfluorohexanoic acid (PFHxA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.1	<4.9	<5	<5.2	<4.5	<4.8	<5.6	<5.1	<5.1	<4.9	<5.6	<5.2
Perfluorononanoic acid (PFNA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.1	<4.9	<5	<5.2	<4.5	<4.8	<5.6	<5.1	<5.1	<4.9	<5.6	<5.2
Perfluorooctanoic acid (PFOA)	NCL	350 (X)	NCL	NCL	NCL	NCL	<5.1	<4.9	<5	<5.2	<4.5	<4.8	<5.6	<5.1	<5.1	<4.9	<5.6	<5.2
Perfluoropentanoic acid (PFPeA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.1	<4.9	<5	<5.2	<4.5	<4.8	<5.6	<5.1	<5.1	<4.9	<5.6	<5.2
Perfluorotetradecanoic acid (PFTeDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.1	<4.9	<5	<5.2	<4.5	<4.8	<5.6	<5.1	<5.1	<4.9	<5.6	<5.2
Perfluorotridecanoic acid (PFTrDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.1	<4.9	<5	<5.2	<4.5	<4.8	<5.6	<5.1	<5.1	<4.9	<5.6	<5.2
Perfluorooctane sulfonic acid (PFOS)	NCL	0.22 (X)	NCL	NCL	NCL	NCL	<5.1	<4.9	<5	<5.2	<4.5	<4.8	***7.1***	***6.4***	<5.1	<4.9	<5.6	<5.2
Perfluoroundecanoic acid (PFUnDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.1	<4.9	<5	<5.2	<4.5	<4.8	<5.6	<5.1	<5.1	<4.9	<5.6	<5.2

TABLE 5
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
Lamoraeux Farms Site
Algoma Township, Kent County, Michigan

Sample Location	Part 201 Generic Residential Soil Cleanup Criteria – Drinking Water Protection	Part 201 Generic Groundwater Cleanup Criteria – Groundwater Surface Water Interface	Part 201 Generic Residential Soil Cleanup Criteria – Soil Volatilization to Indoor Air Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Infinite Source Volatile Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Particulate Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Direct Contact	WV-SB-06	WV-SB-07	WV-SB-07	WV-SB-08	WV-SB-08	WV-SB-09	WV-SB-09	WV-SB-10	WV-SB-10	WV-SB-11	WV-SB-11	WV-SB-12
Sample Name							WV-SB-06 (10-12)	WV-SB-07 (7-9)	WV-SB-07 (13-15)	WV-SB-08 (6-8)	WV-SB-08 (14-16)	WV-SB-09 (7-9)	WV-SB-09 (17-19)	WV-SB-10 (6-8)	WV-SB-10 (16-18)	WV-SB-11 (8-10)	WV-SB-11 (16-18)	WV-SB-12 (7-9)
Depth Interval (Feet below ground surface)							10 - 12	7 - 9	13 - 15	6 - 8	14 - 16	7 - 9	17 - 19	6 - 8	16 - 18	8 - 10	16 - 18	7 - 9
Laboratory Sample ID(s)							TI20083-012	TI19030-005	TI19030-016	TI19030-003	TI19030-004	TI20083-001	TI20083-002	TI20083-003	TI20083-004	TI26013-001	TI26013-002	TI20083-014
Sample Date							9/19/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/19/2018	9/19/2018	9/19/2018	9/19/2018	9/25/2018	9/25/2018	9/19/2018
Parameter (µg/kg)																		
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NCL	NCL	NCL	NCL	NCL	NCL	<11	<11	<11	<9.6	<9.9	<9.9	<11	<11	<9.7	<10	<10	<11
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NCL	NCL	NCL	NCL	NCL	NCL	<11	<11	<11	<9.6	<9.9	<9.9	<11	<11	<9.7	<10	<10	<11
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NCL	NCL	NCL	NCL	NCL	NCL	<2.3	<2.2	<2.1	<1.9	<2	<2	<2.2	<2.2	<1.9	<2.1	<2.1	<2.1
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NCL	NCL	NCL	NCL	NCL	NCL	<2.3	<2.2	<2.1	<1.9	<2	<2	<2.2	<2.2	<1.9	<2.1	<2.1	<2.1
Perfluorobutane sulfonic acid (PFBS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.6	<5.6	<5.3	<4.8	<5	<5	<5.4	<5.6	<4.9	<5.2	<5.2	<5.3
Perfluorodecane sulfonic acid (PFDS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.6	<5.6	<5.3	<4.8	<5	<5	<5.4	<5.6	<4.9	<5.2	<5.2	<5.3
Perfluoroheptane sulfonic acid (PFHpS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.6	<5.6	<5.3	<4.8	<5	<5	<5.4	<5.6	<4.9	<5.2	<5.2	<5.3
Perfluorononane sulfonic acid (PFNS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.6	<5.6	<5.3	<4.8	<5	<5	<5.4	<5.6	<4.9	<5.2	<5.2	<5.3
Perfluorooctane sulfonamide (FOSA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.6	<5.6	<5.3	<4.8	<5	<5	<5.4	<5.6	<4.9	<5.2	<5.2	<5.3
Perfluoropentane sulfonic acid (PFPeS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.6	<5.6	<5.3	<4.8	<5	<5	<5.4	<5.6	<4.9	<5.2	<5.2	<5.3
Perfluorohexane sulfonic acid (PFHxS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.6	<5.6	<5.3	<4.8	<5	<5	<5.4	<5.6	<4.9	<5.2	<5.2	<5.3
Perfluorobutanoic acid (PFBA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.6	<5.6	<5.3	<4.8	<5	<5	<5.4	<5.6	<4.9	<5.2	<5.2	<5.3
Perfluorodecanoic acid (PFDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.6	<5.6	<5.3	<4.8	<5	<5	<5.4	<5.6	<4.9	<5.2	<5.2	<5.3
Perfluorododecanoic acid (PFDoDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.6	<5.6	<5.3	<4.8	<5	<5	<5.4	<5.6	<4.9	<5.2	<5.2	<5.3
Perfluoroheptanoic acid (PFHpA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.6	<5.6	<5.3	<4.8	<5	<5	<5.4	<5.6	<4.9	<5.2	<5.2	<5.3
Perfluorohexanoic acid (PFHxA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.6	<5.6	<5.3	<4.8	<5	<5	<5.4	<5.6	<4.9	<5.2	<5.2	<5.3
Perfluorononanoic acid (PFNA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.6	<5.6	<5.3	<4.8	<5	<5	<5.4	<5.6	<4.9	<5.2	<5.2	<5.3
Perfluorooctanoic acid (PFOA)	NCL	350 (X)	NCL	NCL	NCL	NCL	<5.6	<5.6	<5.3	<4.8	<5	<5	<5.4	<5.6	<4.9	<5.2	<5.2	<5.3
Perfluoropentanoic acid (PFPeA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.6	<5.6	<5.3	<4.8	<5	<5	<5.4	<5.6	<4.9	<5.2	<5.2	<5.3
Perfluorotetradecanoic acid (PFTeDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.6	<5.6	<5.3	<4.8	<5	<5	<5.4	<5.6	<4.9	<5.2	<5.2	<5.3
Perfluorotridecanoic acid (PFTrDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.6	<5.6	<5.3	<4.8	<5	<5	<5.4	<5.6	<4.9	<5.2	<5.2	<5.3
Perfluorooctane sulfonic acid (PFOS)	NCL	0.22 (X)	NCL	NCL	NCL	NCL	<5.6	<5.6	<5.3	<4.8	<5	<5	<5.4	<5.6	<4.9	<5.2	<5.2	<5.3
Perfluoroundecanoic acid (PFUnDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.6	<5.6	<5.3	<4.8	<5	<5	<5.4	<5.6	<4.9	<5.2	<5.2	<5.3

TABLE 5
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
Lamoraeux Farms Site
Algoma Township, Kent County, Michigan

Sample Location	Part 201 Generic Residential Soil Cleanup Criteria – Drinking Water Protection	Part 201 Generic Groundwater Cleanup Criteria – Groundwater Surface Water Interface	Part 201 Generic Residential Soil Cleanup Criteria – Soil Volatilization to Indoor Air Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Infinite Source Volatile Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Particulate Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Direct Contact	WV-SB-12	WV-SB-13	WV-SB-13	WV-SB-14	WV-SB-14	WV-SB-14	WV-SB-15	WV-SB-15	WV-SB-16	WV-SB-16	WV-SB-17	WV-SB-17
Sample Name							WV-SB-12 (14-16)	WV-SB-13 (3-5)	WV-SB-13 (15-17)	WV-SB-14 (8-10)	WV-SB-14 (8-10) DUP	WV-SB-14 (12-14)	WV-SB-15 (1-3)	WV-SB-15 (18-20)	WV-SB-16 (4-6)	WV-SB-16 (14-16)	WV-SB-17 (1-3)	WV-SB-17 (18-20)
Depth Interval (Feet below ground surface)							14 - 16	3 - 5	15 - 17	8 - 10	8 - 10	12 - 14	1 - 3	18 - 20	4 - 6	14 - 16	1 - 3	18 - 20
Laboratory Sample ID(s)							TI25013-009	TI25013-002	TI20083-013	TI20083-007	TI20083-008	TI20083-009	TI20083-010	TI20083-011	TI20083-005	TI20083-006	TI25013-015	TI26013-005
Sample Date							9/24/2018	9/24/2018	9/19/2018	9/19/2018	9/19/2018	9/19/2018	9/19/2018	9/19/2018	9/19/2018	9/19/2018	9/24/2018	9/25/2018
Parameter (µg/kg)																		
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NCL	NCL	NCL	NCL	NCL	NCL	<9.7	<9.7	<10	<9.2	<9.8	<11	<11	<10	<10	<8.9	<10	<9.4
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NCL	NCL	NCL	NCL	NCL	NCL	<9.7	<9.7	<10	<9.2	<9.8	<11	<11	<10	<10	<8.9	<10	<9.4
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NCL	NCL	NCL	NCL	NCL	NCL	<1.9	<1.9	<2	<1.8	<2	<2.2	<2.1	<2.1	<2	<1.8	<2.1	<1.9
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NCL	NCL	NCL	NCL	NCL	NCL	<1.9	<1.9	<2	<1.8	<2	<2.2	<2.1	<2.1	<2	<1.8	<2.1	<1.9
Perfluorobutane sulfonic acid (PFBS)	NCL	NCL	NCL	NCL	NCL	NCL	<4.8	<4.8	<5	<4.6	<4.9	<5.5	<5.3	<5.2	<5.1	<4.4	<5.2	<4.7
Perfluorodecane sulfonic acid (PFDS)	NCL	NCL	NCL	NCL	NCL	NCL	<4.8	<4.8	<5	<4.6	<4.9	<5.5	<5.3	<5.2	<5.1	<4.4	<5.2	<4.7
Perfluoroheptane sulfonic acid (PFHpS)	NCL	NCL	NCL	NCL	NCL	NCL	<4.8	<4.8	<5	<4.6	<4.9	<5.5	<5.3	<5.2	<5.1	<4.4	<5.2	<4.7
Perfluorononane sulfonic acid (PFNS)	NCL	NCL	NCL	NCL	NCL	NCL	<4.8	<4.8	<5	<4.6	<4.9	<5.5	<5.3	<5.2	<5.1	<4.4	<5.2	<4.7
Perfluorooctane sulfonamide (FOSA)	NCL	NCL	NCL	NCL	NCL	NCL	<4.8	<4.8	<5	<4.6	<4.9	<5.5	<5.3	<5.2	<5.1	<4.4	<5.2	<4.7
Perfluoropentane sulfonic acid (PFPeS)	NCL	NCL	NCL	NCL	NCL	NCL	<4.8	<4.8	<5	<4.6	<4.9	<5.5	<5.3	<5.2	<5.1	<4.4	<5.2	<4.7
Perfluorohexane sulfonic acid (PFHxS)	NCL	NCL	NCL	NCL	NCL	NCL	<4.8	<4.8	<5	<4.6	<4.9	<5.5	<5.3	<5.2	<5.1	<4.4	<5.2	<4.7
Perfluorobutanoic acid (PFBA)	NCL	NCL	NCL	NCL	NCL	NCL	<4.8	<4.8	<5	<4.6	<4.9	<5.5	<5.3	<5.2	<5.1	<4.4	<5.2	<4.7
Perfluorodecanoic acid (PFDA)	NCL	NCL	NCL	NCL	NCL	NCL	<4.8	<4.8	<5	<4.6	<4.9	<5.5	<5.3	<5.2	<5.1	<4.4	<5.2	<4.7
Perfluorododecanoic acid (PFDoDA)	NCL	NCL	NCL	NCL	NCL	NCL	<4.8	<4.8	<5	<4.6	<4.9	<5.5	<5.3	<5.2	<5.1	<4.4	<5.2	<4.7
Perfluoroheptanoic acid (PFHpA)	NCL	NCL	NCL	NCL	NCL	NCL	<4.8	<4.8	<5	<4.6	<4.9	<5.5	<5.3	<5.2	<5.1	<4.4	<5.2	<4.7
Perfluorohexanoic acid (PFHxA)	NCL	NCL	NCL	NCL	NCL	NCL	<4.8	<4.8	<5	<4.6	<4.9	<5.5	<5.3	<5.2	<5.1	<4.4	<5.2	<4.7
Perfluorononanoic acid (PFNA)	NCL	NCL	NCL	NCL	NCL	NCL	<4.8	<4.8	<5	<4.6	<4.9	<5.5	<5.3	<5.2	<5.1	<4.4	<5.2	<4.7
Perfluorooctanoic acid (PFOA)	NCL	350 (X)	NCL	NCL	NCL	NCL	<4.8	<4.8	<5	<4.6	<4.9	<5.5	<5.3	<5.2	<5.1	<4.4	<5.2	<4.7
Perfluoropentanoic acid (PFPeA)	NCL	NCL	NCL	NCL	NCL	NCL	<4.8	<4.8	<5	<4.6	<4.9	<5.5	<5.3	<5.2	<5.1	<4.4	<5.2	<4.7
Perfluorotetradecanoic acid (PFTeDA)	NCL	NCL	NCL	NCL	NCL	NCL	<4.8	<4.8	<5	<4.6	<4.9	<5.5	<5.3	<5.2	<5.1	<4.4	<5.2	<4.7
Perfluorotridecanoic acid (PFTrDA)	NCL	NCL	NCL	NCL	NCL	NCL	<4.8	<4.8	<5	<4.6	<4.9	<5.5	<5.3	<5.2	<5.1	<4.4	<5.2	<4.7
Perfluorooctane sulfonic acid (PFOS)	NCL	0.22 (X)	NCL	NCL	NCL	NCL	<4.8	<4.8	<5	<4.6	<4.9	<5.5	<5.3	<5.2	<5.1	<4.4	<5.2	<4.7
Perfluoroundecanoic acid (PFUnDA)	NCL	NCL	NCL	NCL	NCL	NCL	<4.8	<4.8	<5	<4.6	<4.9	<5.5	<5.3	<5.2	<5.1	<4.4	<5.2	<4.7

TABLE 5
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
Lamoraeux Farms Site
Algoma Township, Kent County, Michigan

Sample Location	Part 201 Generic Residential Soil Cleanup Criteria – Drinking Water Protection	Part 201 Generic Groundwater Cleanup Criteria – Groundwater Surface Water Interface	Part 201 Generic Residential Soil Cleanup Criteria – Soil Volatilization to Indoor Air Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Infinite Source Volatile Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Particulate Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Direct Contact	WV-SB-18	WV-SB-18	WV-SB-19	WV-SB-19	WV-SB-20	WV-SB-20	WV-SB-21	WV-SB-21	WV-SB-21	WV-SB-22	WV-SB-22	WV-SB-23
Sample Name							WV-SB-18 (1-3)	WV-SB-18 (11-13)	WV-SB-19 (1-3)	WV-SB-19 (18-20)	WV-SB-20 (6-8)	WV-SB-20 (11-13)	WV-SB-21 (7-9)	WV-SB-21 (12-14)	WV-SB-21 (12-14)DUP	WV-SB-22 (0-2)	WV-SB-22 (13-15)	WV-SB-23 (4-6)
Depth Interval (Feet below ground surface)							1 - 3	11 - 13	1 - 3	18 - 20	6 - 8	11 - 13	7 - 9	12 - 14	12 - 14	0 - 2	13 - 15	4 - 6
Laboratory Sample ID(s)							TI25013-003	TI25013-004	TI25013-005	TI25013-006	TI25013-007	TI25013-008	TI25013-010	TI25013-011	TI25013-012	TI25013-013	TI25013-014	TI26013-009
Sample Date							9/24/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018	9/24/2018	9/26/2018
Parameter (µg/kg)																		
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NCL	NCL	NCL	NCL	NCL	NCL	<10	<11	<10	<10	<9.6	<9.7	<10	<10	<10	<11	<11	<11
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NCL	NCL	NCL	NCL	NCL	NCL	<10	<11	<10	<10	<9.6	<9.7	<10	<10	<10	<11	<11	<11
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NCL	NCL	NCL	NCL	NCL	NCL	<2	<2.1	<2.1	<2.1	<1.9	<1.9	<2	<2	<2.1	<2.3	<2.1	<2.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NCL	NCL	NCL	NCL	NCL	NCL	<2	<2.1	<2.1	<2.1	<1.9	<1.9	<2	<2	<2.1	<2.3	<2.1	<2.2
Perfluorobutane sulfonic acid (PFBS)	NCL	NCL	NCL	NCL	NCL	NCL	<5	<5.3	<5.2	<5.2	<4.8	<4.8	<5.1	<5	<5.2	<5.7	<5.4	<5.5
Perfluorodecane sulfonic acid (PFDS)	NCL	NCL	NCL	NCL	NCL	NCL	<5	<5.3	<5.2	<5.2	<4.8	<4.8	<5.1	<5	<5.2	<5.7	<5.4	<5.5
Perfluoroheptane sulfonic acid (PFHpS)	NCL	NCL	NCL	NCL	NCL	NCL	<5	<5.3	<5.2	<5.2	<4.8	<4.8	<5.1	<5	<5.2	<5.7	<5.4	<5.5
Perfluorononane sulfonic acid (PFNS)	NCL	NCL	NCL	NCL	NCL	NCL	<5	<5.3	<5.2	<5.2	<4.8	<4.8	<5.1	<5	<5.2	<5.7	<5.4	<5.5
Perfluorooctane sulfonamide (FOSA)	NCL	NCL	NCL	NCL	NCL	NCL	<5	<5.3	<5.2	<5.2	<4.8	<4.8	<5.1	<5	<5.2	<5.7	<5.4	<5.5
Perfluoropentane sulfonic acid (PFPeS)	NCL	NCL	NCL	NCL	NCL	NCL	<5	<5.3	<5.2	<5.2	<4.8	<4.8	<5.1	<5	<5.2	<5.7	<5.4	<5.5
Perfluorohexane sulfonic acid (PFHxS)	NCL	NCL	NCL	NCL	NCL	NCL	<5	<5.3	<5.2	<5.2	<4.8	<4.8	<5.1	<5	<5.2	<5.7	<5.4	<5.5
Perfluorobutanoic acid (PFBA)	NCL	NCL	NCL	NCL	NCL	NCL	<5	<5.3	<5.2	<5.2	<4.8	<4.8	<5.1	<5	<5.2	<5.7	<5.4	<5.5
Perfluorodecanoic acid (PFDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5	<5.3	<5.2	<5.2	<4.8	<4.8	<5.1	<5	<5.2	<5.7	<5.4	<5.5
Perfluorododecanoic acid (PFDoDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5	<5.3	<5.2	<5.2	<4.8	<4.8	<5.1	<5	<5.2	<5.7	<5.4	<5.5
Perfluoroheptanoic acid (PFHpA)	NCL	NCL	NCL	NCL	NCL	NCL	<5	<5.3	<5.2	<5.2	<4.8	<4.8	<5.1	<5	<5.2	<5.7	<5.4	<5.5
Perfluorohexanoic acid (PFHxA)	NCL	NCL	NCL	NCL	NCL	NCL	<5	<5.3	<5.2	<5.2	<4.8	<4.8	<5.1	<5	<5.2	<5.7	<5.4	<5.5
Perfluorononanoic acid (PFNA)	NCL	NCL	NCL	NCL	NCL	NCL	<5	<5.3	<5.2	<5.2	<4.8	<4.8	<5.1	<5	<5.2	<5.7	<5.4	<5.5
Perfluorooctanoic acid (PFOA)	NCL	350 (X)	NCL	NCL	NCL	NCL	<5	<5.3	<5.2	<5.2	<4.8	<4.8	<5.1	<5	<5.2	<5.7	<5.4	<5.5
Perfluoropentanoic acid (PFPeA)	NCL	NCL	NCL	NCL	NCL	NCL	<5	<5.3	<5.2	<5.2	<4.8	<4.8	<5.1	<5	<5.2	<5.7	<5.4	<5.5
Perfluorotetradecanoic acid (PFTeDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5	<5.3	<5.2	<5.2	<4.8	<4.8	<5.1	<5	<5.2	<5.7	<5.4	<5.5
Perfluorotridecanoic acid (PFTrDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5	<5.3	<5.2	<5.2	<4.8	<4.8	<5.1	<5	<5.2	<5.7	<5.4	<5.5
Perfluorooctane sulfonic acid (PFOS)	NCL	0.22 (X)	NCL	NCL	NCL	NCL	<5	<5.3	<5.2	<5.2	<4.8	<4.8	<5.1	<5	<5.2	<5.7	<5.4	<5.5
Perfluoroundecanoic acid (PFUnDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5	<5.3	<5.2	<5.2	<4.8	<4.8	<5.1	<5	<5.2	<5.7	<5.4	<5.5

TABLE 5
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
Lamoraeux Farms Site
Algoma Township, Kent County, Michigan

Sample Location	Part 201 Generic Residential Soil Cleanup Criteria – Drinking Water Protection	Part 201 Generic Groundwater Cleanup Criteria – Groundwater Surface Water Interface	Part 201 Generic Residential Soil Cleanup Criteria – Soil Volatilization to Indoor Air Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Infinite Source Volatile Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Particulate Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Direct Contact	WV-SB-23	WV-SB-24	WV-SB-24	WV-SB-25	WV-SB-25	WV-SB-26	WV-SB-26	WV-SB-27	WV-SB-27	WV-SB-28	WV-SB-28	WV-SB-29
Sample Name							WV-SB-23 (15-17)	WV-SB-24 (7-9)	WV-SB-24 (12-14)	WV-SB-25 (1-3)	WV-SB-25 (13-15)	WV-SB-26 (6-8)	WV-SB-26 (18-20)	WV-SB-27 (7-9)	WV-SB-27 (13-15)	WV-SB-28 (0-2)	WV-SB-28 (15-17)	WV-SB-29 (2-4)
Depth Interval (Feet below ground surface)							15 - 17	7 - 9	12 - 14	1 - 3	13 - 15	6 - 8	18 - 20	7 - 9	13 - 15	0 - 2	15 - 17	2 - 4
Laboratory Sample ID(s)							TI26013-010	TI26013-011	TI26013-018	TI26013-012	TI26013-013	TI26013-016	TI26013-017	TI26013-006	TI26013-007	TI26013-003	TI26013-004	TI26013-014
Sample Date							9/26/2018	9/26/2018	9/26/2018	9/26/2018	9/26/2018	9/26/2018	9/26/2018	9/25/2018	9/25/2018	9/25/2018	9/25/2018	9/26/2018
Parameter (µg/kg)																		
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NCL	NCL	NCL	NCL	NCL	NCL	<11	<10	<11	<10	<11	<11	<9.6	<11	<9.5	<11	<11	<11
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NCL	NCL	NCL	NCL	NCL	NCL	<11	16	<11	<10	<11	<11	<9.6	<11	<9.5	<11	<11	<11
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NCL	NCL	NCL	NCL	NCL	NCL	<2.2	<2.1	<2.1	<2	<2.1	<2.2	<1.9	<2.2	<1.9	<2.2	<2.3	<2.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NCL	NCL	NCL	NCL	NCL	NCL	<2.2	<2.1	<2.1	<2	<2.1	<2.2	<1.9	<2.2	<1.9	<2.2	<2.3	<2.2
Perfluorobutane sulfonic acid (PFBS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.4	<5.1	<5.4	<5	<5.3	<5.4	<4.8	<5.6	<4.7	<5.5	<5.6	<5.6
Perfluorodecane sulfonic acid (PFDS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.4	<5.1	<5.4	<5	<5.3	<5.4	<4.8	<5.6	<4.7	<5.5	<5.6	<5.6
Perfluoroheptane sulfonic acid (PFHpS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.4	<5.1	<5.4	<5	<5.3	<5.4	<4.8	<5.6	<4.7	<5.5	<5.6	<5.6
Perfluorononane sulfonic acid (PFNS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.4	<5.1	<5.4	<5	<5.3	<5.4	<4.8	<5.6	<4.7	<5.5	<5.6	<5.6
Perfluorooctane sulfonamide (FOSA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.4	<5.1	<5.4	<5	<5.3	<5.4	<4.8	<5.6	<4.7	<5.5	<5.6	<5.6
Perfluoropentane sulfonic acid (PFPeS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.4	<5.1	<5.4	<5	<5.3	<5.4	<4.8	<5.6	<4.7	<5.5	<5.6	<5.6
Perfluorohexane sulfonic acid (PFHxS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.4	<5.1	<5.4	<5	<5.3	<5.4	<4.8	<5.6	<4.7	<5.5	<5.6	<5.6
Perfluorobutanoic acid (PFBA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.4	<5.1	<5.4	<5	<5.3	<5.4	<4.8	<5.6	<4.7	<5.5	<5.6	<5.6
Perfluorodecanoic acid (PFDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.4	<5.1	<5.4	<5	<5.3	<5.4	<4.8	<5.6	<4.7	<5.5	<5.6	<5.6
Perfluorododecanoic acid (PFDoDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.4	<5.1	<5.4	<5	<5.3	<5.4	<4.8	<5.6	<4.7	<5.5	<5.6	<5.6
Perfluoroheptanoic acid (PFHpA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.4	<5.1	<5.4	<5	<5.3	<5.4	<4.8	<5.6	<4.7	<5.5	<5.6	<5.6
Perfluorohexanoic acid (PFHxA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.4	<5.1	<5.4	<5	<5.3	<5.4	<4.8	<5.6	<4.7	<5.5	<5.6	<5.6
Perfluorononanoic acid (PFNA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.4	<5.1	<5.4	<5	<5.3	<5.4	<4.8	<5.6	<4.7	<5.5	<5.6	<5.6
Perfluorooctanoic acid (PFOA)	NCL	350 (X)	NCL	NCL	NCL	NCL	<5.4	<5.1	<5.4	<5	<5.3	<5.4	<4.8	<5.6	<4.7	<5.5	<5.6	<5.6
Perfluoropentanoic acid (PFPeA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.4	<5.1	<5.4	<5	<5.3	<5.4	<4.8	<5.6	<4.7	<5.5	<5.6	<5.6
Perfluorotetradecanoic acid (PFTeDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.4	<5.1	<5.4	<5	<5.3	<5.4	<4.8	<5.6	<4.7	<5.5	<5.6	<5.6
Perfluorotridecanoic acid (PFTrDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.4	<5.1	<5.4	<5	<5.3	<5.4	<4.8	<5.6	<4.7	<5.5	<5.6	<5.6
Perfluorooctane sulfonic acid (PFOS)	NCL	0.22 (X)	NCL	NCL	NCL	NCL	<5.4	<5.1	<5.4	<5	<5.3	<5.4	<4.8	<5.6	<4.7	<5.5	<5.6	<5.6
Perfluoroundecanoic acid (PFUnDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.4	<5.1	<5.4	<5	<5.3	<5.4	<4.8	<5.6	<4.7	<5.5	<5.6	<5.6

TABLE 5
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
Lamoraeux Farms Site
Algoma Township, Kent County, Michigan

Sample Location	Part 201 Generic Residential Soil Cleanup Criteria – Drinking Water Protection	Part 201 Generic Groundwater Cleanup Criteria – Groundwater Surface Water Interface	Part 201 Generic Residential Soil Cleanup Criteria – Soil Volatilization to Indoor Air Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Infinite Source Volatile Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Particulate Soil Inhalation	Part 201 Generic Residential Soil Cleanup Criteria – Direct Contact	WV-SB-29
Sample Name							WV-SB-29 (12-14)
Depth Interval (Feet below ground surface)							12 - 14
Laboratory Sample ID(s)							TI26013-015
Sample Date							9/26/2018
Parameter (µg/kg)							
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NCL	NCL	NCL	NCL	NCL	NCL	<11
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NCL	NCL	NCL	NCL	NCL	NCL	<11
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NCL	NCL	NCL	NCL	NCL	NCL	<2.1
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NCL	NCL	NCL	NCL	NCL	NCL	<2.1
Perfluorobutane sulfonic acid (PFBS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.3
Perfluorodecane sulfonic acid (PFDS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.3
Perfluoroheptane sulfonic acid (PFHpS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.3
Perfluorononane sulfonic acid (PFNS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.3
Perfluorooctane sulfonamide (FOSA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.3
Perfluoropentane sulfonic acid (PFPeS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.3
Perfluorohexane sulfonic acid (PFHxS)	NCL	NCL	NCL	NCL	NCL	NCL	<5.3
Perfluorobutanoic acid (PFBA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.3
Perfluorodecanoic acid (PFDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.3
Perfluorododecanoic acid (PFDoDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.3
Perfluoroheptanoic acid (PFHpA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.3
Perfluorohexanoic acid (PFHxA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.3
Perfluorononanoic acid (PFNA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.3
Perfluorooctanoic acid (PFOA)	NCL	350 (X)	NCL	NCL	NCL	NCL	<5.3
Perfluoropentanoic acid (PFPeA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.3
Perfluorotetradecanoic acid (PFTeDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.3
Perfluorotridecanoic acid (PFTrDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.3
Perfluorooctane sulfonic acid (PFOS)	NCL	0.22 (X)	NCL	NCL	NCL	NCL	<5.3
Perfluoroundecanoic acid (PFUnDA)	NCL	NCL	NCL	NCL	NCL	NCL	<5.3

NOTES FOR TABLES 1 - 5
SUMMARY OF SOIL SAMPLE ANALYSIS
Lamoraeux Farms Site
Algoma Township, Kent County, Michigan

NOTES:

1. Concentration and criteria units are micrograms per kilogram (µg/kg) or parts per billion (ppb). Calculated criteria and concentrations are rounded to two significant digits and "ND" indicates the parameters used in the calculation were not detected.

2. Michigan Part 201 Groundwater Cleanup Criteria are based on "Table 2, Soil: Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Tier I Risk Based Screening Levels,"
   Michigan Administrative Code, Cleanup Criteria Requirements for Response Activity, Rules 299.46 and 299.49, effective December 30, 2013; updated June 25, 2018.
   Abbreviations Include:
   "ID" indicates insufficient data to develop criterion.
   "NA" indicates a criterion or value is not available or, in the case of background, not applicable.
   "NCL" indicates no criterion listed in MDEQ Table 2.
   "NLL" indicates the substance is not likely to leach under most soil conditions.
   "NLV" indicates the substance is not likely to volatilize under most conditions.
   Footnotes Include:
   (B) - Background, as defined in R 299.1(b), may be substituted if higher than the calculated cleanup criterion. Background levels may be less than criteria for some inorganic compounds.
   (C) - The criterion developed under R 299.20 to R 299.26 exceeds the chemical-specific soil saturation screening level (C_{sat}).
   (D) - The calculated criterion exceeds 100 percent, hence it is reduced to 100 percent or 1.0E+9 ppb.
   (F) - Criterion is based on adverse impacts to plant life and phytotoxicity.
   (G) - Groundwater surface water interface protection (GSIP) criterion depends on the pH or water hardness, or both, of the receiving surface water.
   MDEQ's Footnote (G) GSI/GSIPC Calculation spreadsheet was utilized to calculate GSI criterion presented. The Rogue River is the receiving surface water for the Site. Hardness (220 mg CaCQ/L) and pH (7.5 standard units) used in the calculations were the lowest (most-conservative) of the calculated mean and median of the Rogue River surface water samples (TA-SW-01, TA-SW-02, TA-SW-03, TA-SW-05, and TA-SW-07) collected in Rockford rounded to two significant digits and water hardness or pH for the Rogue River near Rockford published in United States Geological Survey Circular 323, "Water Resources of the Grand Rapids Area, Michigan," Table 1, 1954.
   (M) - Calculated criterion is below the analytical target detection limit, therefore, the criterion defaults to the target detection limit.
   (N) - Where leaching to groundwater is a relevant pathway, soil concentrations of all potential sources of nitrate-nitrogen (e.g., ammonia-N, nitrite-N, nitrate-N) shall not, when added together, exceed the nitrate drinking water protection criterion of 2.0E+5µg/kg.
   (P) - Total cyanide methods or method OIA-1677 shall be used to quantify cyanide concentrations for compliance with soil criteria.
   (W) - Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the drinking water protection criterion of 1,600µg/kg.
   (X) - Soil GSI protection criteria based on the human drinking water value (HDV) shall be as listed in the table in this footnote, except for those values with an asterisk. Soil GSI protection criteria for compounds with an asterisk shall be the greater of 20 times the GSI criterion or the GSI soil-water partition values using the GSI criteria developed with the procedure described in this footnote.
   (DD) - Residential direct contact criteria are protective of both prenatal and postnatal exposure.
   (EE) - The applicable GSI criteria for phosphorus is 1,000 µg/L. The footnote does not specify a GSIP criterion, however, the GSIP for phosphorus refers to Footnote EE. Conservatively, a value of 20 times the GSI criterion (20,000µg/kg) was used.

3. Bold, italic number with thick line border or italic parameter name indicates that parameter was detected above the Michigan Part 201 Soil Cleanup Criteria. For metals, bold, italic number indicates that the parameter was detected at a concentration greater than both the statewide default background, if available, and the most-restrictive Michigan Part 201 Cleanup Criteria in accordance with Footnote B.

4. Abbreviations include:
   "< RL" indicates the parameter was analyzed for but not detected above the method detection limit; RL = Reporting Limit.
   "DUP" indicates a duplicate sample.
   "B" indicates the parameter was also detected in the method blank.
   "J" indicates the parameter was detected at a concentration greater than the limit of quantitation (LOQ) but less than the detection limit (DL) and the result is estimated.

TABLE 6
SUMMARY OF SOIL SAMPLE ANALYSIS - TCLP METALS
Lamoraeux Farms Site
Algoma Township, Kent County, Michigan

Sample Location	RCRA Maximum Concentration	WV-SB-26
Sample Name		WV-SB-26(6-8)
Depth Interval (Feet below ground surface)		6 - 8
Laboratory Sample ID(s)		TI26013-016
Sample Date		09/26/2018
Parameter (µg/L)		
Chromium	5,000	<100

NOTES:

1. Concentration and criteria units are micrograms per Liter (µg/L) or parts per billion (ppb).

2. RCRA Maximum Concentration criteria are based on "Table 1, Maximum Concentration of Contaminants for the Toxicity Characteristic," 40 CFR 261.24, last amended March 13, 2002.

3. Bold, italic number with thick line border or italic parameter name indicates that parameter was detected above the RCRA Maximum Concentration.

4. Abbreviations include:

"< RL" indicates the parameter was analyzed for but not detected above the method detection limit; RL = Reporting Limit.

TABLE 7
SUMMARY OF GROUNDWATER SAMPLE ANALYSIS - METALS
Wolven Study Area
Algoma Township, Kent County, Michigan

Location	Part 201 Generic Residential Groundwater Cleanup Criteria - Drinking Water Uses	Part 201 Generic Groundwater Cleanup Criteria - Groundwater Surface Water Interface	MW-WV-1	MW-WV-2D	MW-WV-2S	MW-WV-3D	MW-WV-3D (DUP)	MW-WV-3S	MW-WV-4	MW-WV-5D	MW-WV-5S	MW-WV-6D	MW-WV-6S	MW-WV-8D	MW-WV-8M	MW-WV-8S	MW-WV-9
Sample Name			MW-WV-1	MW-WV-2D	MW-WV-2S	MW-WV-3D	MW-WV-3D (DUP)	MW-WV-3S	MW-WV-4	MW-WV-5D	MW-WV-5S	MW-WV-6D	MW-WV-6S	MW-WV-8D	MW-WV-8M	MW-WV-8S	MW-WV-9
Laboratory Sample ID			TC30010-002	TC30010-009	TC30010-005	TC30010-008	TC30010-006	TC30010-007	TE25018-002	TC30010-001	TC30010-003	TD28005-001	TD28005-002	TG07028-003	TG07028-002	TG07028-001	TG07028-004
Sample Date			03/28/2018	03/29/2018	03/29/2018	03/29/2018	03/29/2018	03/29/2018	05/23/2018	03/28/2018	03/28/2018	04/25/2018	04/25/2018	07/05/2018	07/05/2018	07/05/2018	07/05/2018
Parameter (µg/L)																	
Aluminum	50	NA	***530***	***72***	***87***	***71***	***140***	***650***	***410***	***55***	<40	***57***	40	***96***	49	43	***1,300***
Antimony	6	130	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Arsenic	10	10	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	2.9	<2	<2	<2
Barium	2,000	NA	190	97	42	25	25	50	86	24	22	93	23	62	88	17	73
Beryllium	4	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cadmium	5	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Calcium	NA	NA	87,000	120,000	86,000	74,000	69,000	16,000	49,000	96,000	99,000	61,000	61,000	46,000	150,000	99,000	66,000
Chromium	NA	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Cobalt	40	100	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Copper	1,000	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Iron	300	NA	***1,600***	***480***	230	230	***400***	***3,600***	***690***	250	200	***360***	110	260	***500***	***360***	***1,500***
Lead	4	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Magnesium	400,000	NA	33,000	30,000	27,000	24,000	22,000	6,300	16,000	30,000	30,000	32,000	17,000	16,000	49,000	30,000	27,000
Mercury	2	0.0013	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Molybdenum	73	3,200	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	12	<10	<10	13
Nickel	100	NA	<5	8.9	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Potassium	NA	NA	2,300	3,800	2,400	1,100	1,100	1,700	1,500	1,400	1,300	4,200	2,000	5,900	2,000	1,500	4,700
Selenium	50	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Silver	34	0.2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sodium	NA	NA	17,000	12,000	31,000	25,000	23,000	9,500	10,000	33,000	24,000	210,000	290,000	15,000	230,000	67,000	8,900
Thallium	2	3.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	4.5	27	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Zinc	2,400	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

TABLE 8
SUMMARY OF GROUNDWATER ANALYTICAL DATA - PFAS
Wolven Study Area
Algoma Township, Kent County, Michigan

LOCATION	PART 201 GENERIC RESIDENTIAL GROUNDWATER CLEANUP CRITERIA - DRINKING WATER	PART 201 GENERIC GROUNDWATER CLEANUP CRITERIA - GROUNDWATER SURFACE WATER INTERFACE	MW-WV-1	MW-WV-2D	MW-WV-2S	MW-WV-3D	MW-WV-3D	MW-WV-3S	MW-WV-4	MW-WV-5D	MW-WV-5S	MW-WV-6D	MW-WV-6S
SAMPLE NAME			MW-WV-1	MW-WV-2D	MW-WV-2S	MW-WV-3D	MW-WV-3D (DUP)	MW-WV-3S	MW-WV-4	MW-WV-5D	MW-WV-5S	MW-WV-6D	MW-WV-6S
LB ID			TC30012-002	TC30012-006	TC30012-010	TC30012-008	TC30012-011	TC30012-009	TE25018-002	TC30012-004	TC30012-003	TD12014-001	TD12014-003
SAMPLE DATE			03/28/2018	03/29/2018	03/29/2018	03/29/2018	03/29/2018	03/29/2018	05/23/2018	03/28/2018	03/28/2018	04/11/2018	04/11/2018
Parameter (ng/l)													
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<7	<7.2	<7.4	<7.5	<7.5	<7	<3.5	<7.2	<7.1	<7.5	<7.3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<7	<7.2	<7.4	<7.5	<7.5	<7	<3.5	<7.2	<7.1	<7.5	<7.3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	<7	<7.2	<7.4	<7.5	<7.5	<7	<3.5	<7.2	<7.1	<7.5	<7.3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	NA											
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<14	<14	<15	<15	<15	<14	<7	<14	<14	<15	<15
N-Methyl perfluorooctane sulfonamidoethanol	NA	NA											
Perfluorobutane sulfonic acid (PFBS)	NA	NA	**46**	**56**	**17**	**6.4**	**6.6**	**4.9**	<3.5	**8.3**	**6**	**18**	**7.8**
Perfluorobutanoic acid (PFBA)	NA	NA	**31**	**26**	**11**	<3.7	<3.8	5.3 Q	<3.5	<3.6	<3.6	**5**	<3.6
Perfluorodecane sulfonic acid (PFDS)	NA	NA	<3.5	<3.6	<3.7	<3.7	<3.8	<3.5	<3.5	<3.6	<3.6	<3.8	<3.6
Perfluorodecanoic acid (PFDA)	NA	NA	<3.5	<3.6	<3.7	<3.7	<3.8	<3.5	<3.5	<3.6	<3.6	<3.8	<3.6
Perfluorododecanoic acid (PFDoDA)	NA	NA	<3.5	<3.6	<3.7	<3.7	<3.8	<3.5	<3.5	<3.6	<3.6	<3.8	<3.6
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	**230**	**15**	**74**	<3.7	<3.8	**9.2**	<3.5	<3.6	<3.6	<3.8	<3.6
Perfluoroheptanoic acid (PFHpA)	NA	NA	**250**	**150**	**33**	<3.7	<3.8	**11**	<3.5	<3.6	<3.6	<3.8	<3.6
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	**1,100**	**350**	**80**	**4.2**	**4.7**	**23**	<3.5	<3.6	<3.6	<3.8	<3.6
Perfluorohexanoic acid (PFHxA)	NA	NA	**100**	**81**	**23**	<3.7	<3.8	**6.1**	<3.5	<3.6	<3.6	<3.8	<3.6
Perfluorononanoic acid (PFNA)	NA	NA	**15**	<3.6	**5.8**	<3.7	<3.8	<3.5	<3.5	<3.6	<3.6	<3.8	<3.6
Perfluorooctane sulfonamide (FOSA)	NA	NA	<7	<7.2	<7.4	<7.5	<7.5	<7	<3.5	<7.2	<7.1	<7.5	<7.3
Perfluorooctane sulfonic acid (PFOS)	70	12	***7,300***	***64***	***3,200***	<3.7	<3.8	***230***	<3.5	<3.6	<3.6	<3.8	**4.8**
Perfluorooctanoic acid (PFOA)	70	12,000.00	***3,300***	***970***	***320***	<3.7	<3.8	***93***	<1.7	<3.6	<3.6	<3.8	**6.9**
Perfluoropentanoic acid (PFPeA)	NA	NA	**39**	**33**	**14**	<3.7	<3.8	<3.5	<3.5	<3.6	<3.6	<3.8	<3.6
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<7	<7.2	<7.4	<7.5	<7.5	<7	<3.5	<7.2	<7.1	<7.5	<7.3
Perfluorotridecanoic acid (PFTrDA)	NA	NA	<3.5	<3.6	<3.7	<3.7	<3.8	<3.5	<3.5	<3.6	<3.6	<3.8	<3.6
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<3.5	<3.6	<3.7	<3.7	<3.8	<3.5	<3.5	<3.6	<3.6	<3.8	<3.6
Perfluorononane sulfonic acid (PFNS)	NA	NA	<7	<7.2	<7.4	<7.5	<7.5	<7	<7	<7.2	<7.1	<7.5	<7.3
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	**140**	**140**	**18**	<3.7	<3.8	**5**	<3.5	<3.6	<3.6	<3.8	<3.6

TABLE 8
SUMMARY OF GROUNDWATER ANALYTICAL DATA - PFAS
Wolven Study Area
Algoma Township, Kent County, Michigan

LOCATION	PART 201 GENERIC RESIDENTIAL GROUNDWATER CLEANUP CRITERIA - DRINKING WATER	PART 201 GENERIC GROUNDWATER CLEANUP CRITERIA - GROUNDWATER SURFACE WATER INTERFACE	MW-WV-8D	MW-WV-8M	MW-WV-8S	MW-WV-9
SAMPLE NAME			MW-WV-8D	MW-WV-8M	MW-WV-8S	MW-WV-9
LB ID			TG07028-003	TG07028-002	TG07028-001	TG07028-004
SAMPLE DATE			07/05/2018	07/05/2018	07/05/2018	07/05/2018
Parameter (ng/l)						
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<3.5	<3.5	<3.5	<3.5
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<3.5	<3.5	<3.5	<3.5
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	<3.5	<3.5	<3.5	<3.5
N-Ethyl perfluorooctane sulfonamidoethanol	NA	NA				
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<6.9	<7	<6.9	<7
N-Methyl perfluorooctane sulfonamidoethanol	NA	NA				
Perfluorobutane sulfonic acid (PFBS)	NA	NA	<3.5	**73**	**18**	**11**
Perfluorobutanoic acid (PFBA)	NA	NA	<3.5	**8.5**	**6**	**6.3**
Perfluorodecane sulfonic acid (PFDS)	NA	NA	<3.5	<3.5	<3.5	<3.5
Perfluorodecanoic acid (PFDA)	NA	NA	<3.5	<3.5	<3.5	<3.5
Perfluorododecanoic acid (PFDoDA)	NA	NA	<3.5	<3.5	<3.5	<3.5
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	<3.5	<3.5	<3.5	**26**
Perfluoroheptanoic acid (PFHpA)	NA	NA	<3.5	**4.2**	**5.1**	**40**
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	<3.5	**10**	**16**	**110**
Perfluorohexanoic acid (PFHxA)	NA	NA	<3.5	**8.7**	**4.5**	**19**
Perfluorononanoic acid (PFNA)	NA	NA	<3.5	<3.5	<3.5	<3.5
Perfluorooctane sulfonamide (FOSA)	NA	NA	<3.5	<3.5	<3.5	**31**
Perfluorooctane sulfonic acid (PFOS)	70	12	<3.5	**4.5**	***42***	***590***
Perfluorooctanoic acid (PFOA)	70	12,000.00	**4.8**	**28**	**50**	***470***
Perfluoropentanoic acid (PFPeA)	NA	NA	<3.5	**8.1**	<3.5	**7.1**
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<3.5	<3.5	<3.5	<3.5
Perfluorotridecanoic acid (PFTrDA)	NA	NA	<3.5	<3.5	<3.5	<3.5
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<3.5	<3.5	<3.5	<3.5
Perfluorononane sulfonic acid (PFNS)	NA	NA	<6.9	<7	<6.9	<7
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	<3.5	<3.5	**4**	**33**

NOTES:
1. Concentration and criteria units for metals are micrograms per liter (µg/L) or parts per billion (ppb); "< RL" indicates the compound was analyzed for but not detected above the method detection limit; RL = Reporting Limit

2. Concentration and criteria units for PFAS are nano-grams per liter (ng/L) or parts per trillion (ppt); "< RL" indicates the compound was analyzed for but not detected above the method detection limit; RL = Reporting Limit

3. Bold indicates that compound was detected above the RL. Italic number with thick line border or italic chemical indicates that compound was detected above the Michigan Part 201 groundwater cleanup criteria.

3. Michigan Part 201 groundwater cleanup criteria protective of drinking water uses and Michigan Part 201 groundwater surface water interface criteria were based on MDEQ 's Table 1, Groundwater: Residential and Nonresidential, Part 201 Generic Cleanup Criteria and Screening Levels, June 2018.

4. The cleanup criteria of 70 ppt was established for the combined concentrations of PFOA and PFOS.

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Engineers and Scientists

Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-01
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-11-18 / 9-11-18
Boring Location: 594,329.93 N, 12,795,792.16 E
GS Elev.: 866.26' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/28	0-5		1.4 ppm	Dark brown, TOPSOIL. Changing at 0.3 feet to: Brown, fine to coarse SAND, some Gravel, trace Silt, moist. Changing at 0.9 feet to: Brown, SILT, some Gravel, trace fine Sand, moist. Changing at 2.0 feet to: Brown, SILT, trace fine Sand, moist. Changing at 2.3 feet to: NO RECOVERY.	0.3' TOPSOIL 0.9' SAND SILT 2.3' NO RECOVERY	1	None
1									
2					1.6 ppm				
3									
4									
5	2	60/50	5-10		3.3 ppm	NO RECOVERY. Changing at 5.8 feet to: Brown, fine SAND and SILT, moist. Changing at 9.0 feet to: Gray and brown, fine to coarse SAND, some Gravel, moist.	5.8' SAND and SILT		
6									
7					3.9 ppm			2	
8									
9					4.9 ppm		9' SAND		
10	3	60/44	10-15		3.7 ppm	NO RECOVERY. Changing at 11.3 feet to: Brown, fine to coarse SAND, some Gravel, dry. Changing at 12.0 feet to: Brown, fine to coarse SAND, some Gravel, moist.	10' NO RECOVERY 11.3' SAND		
11									
12					3.4 ppm				
13									
14					3.8 ppm				
15	4	60/43	15-20		4.7 ppm	NO RECOVERY. Changing at 16.4 feet to: Brown, fine to coarse SAND, some Gravel, dry. Changing at 17.0 feet to: Brown, fine to coarse SAND and GRAVEL, moist.	15' NO RECOVERY 16.4' SAND 17' SAND and GRAVEL	3	
16									
17					3.1 ppm				
18									
19					3.9 ppm				
20						Bottom of Borehole at 20.0 Feet	20'	4 5	
21									
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.3 ppm.
2. Soil sample was collected from approximately 7.0 to 9.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 16.0 to 18.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-02
Page: 1 of 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-12-18 / 9-12-18
Boring Location: 594,329.07 N, 12,795,852.16 E
GS Elev.: 871.10' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/42	0-5		4.8 ppm	Dark brown, TOPSOIL, moist. Changing at 0.4 feet to: Light brown, fine to coarse SAND, some Gravel, trace Silt, moist with light brown Silt lenses from 2.0 to 2.2 feet. Changing at 3.5 feet to: NO RECOVERY.	0.4' TOPSOIL / SAND	1	None
1									
2					5.5 ppm				
3							3.5'		
4							NO RECOVERY		
5	2	60/36	5-10			NO RECOVERY. Changing at 7.0 feet to: Light brown, fine to coarse SAND, some Gravel, trace Silt, moist.			
6									
7					3.5 ppm		7' SAND	2	
8									
9					5.0 ppm				
10	3	36/31	10-13		4.5 ppm	NO RECOVERY. Changing at 10.4 feet to: Light brown, fine to coarse SAND, some Gravel, trace Silt, moist.	10' 10.4' NO RECOVERY / SAND		
11									
12					5.2 ppm			3	
13	4	24/18	13-15		5.5 ppm	NO RECOVERY. Changing at 13.5 feet to: Light brown, fine to coarse SAND, some Gravel, trace Silt, moist.	13' 13.5' NO RECOVERY / SAND		
14									
15	5	60/32	15-20		4.6 ppm	NO RECOVERY. Changing at 17.3 feet to: Brown and white, fine to coarse SAND, some Gravel, little Rock fragments, little Silt, moist. Changing at 19.1 feet to: Brown, SILT, little fine Sand, moist. Changing at 19.4 feet to: Brown, fine to coarse SAND, some Gravel, little Silt, moist.	15' NO RECOVERY		
16									
17					3.2 ppm		17.3' SAND		
18									
19					3.8 ppm		19.1' 19.4' SILT / 20' SAND		
20						Bottom of Borehole at 20.0 Feet		4 5	
21									
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 7.0 to 9.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 12.0 to 14.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: WV-SB-02

BORING_WELL_6267781 WWW.WOLVEN AVENUE.GPJ GZA_CORP.GDT 11/30/18

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-03A
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-13-18 / 9-13-18
Boring Location: 594,310.35 N, 12,795,914.13 E
GS Elev.: 864.51' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/32	0-5		5.2 ppm	Dark brown, TOPSOIL, moist. Changing at 0.1 feet to: Brown, fine to coarse SAND, little Gravel, little Silt, moist with Rock fragments from 0.3 to 0.4 feet. Changing at 2.8 feet to: NO RECOVERY.	0.1' TOPSOIL / SAND	1	None
1									
2					4.0 ppm		2.8'	2	
3							NO RECOVERY		
4									
5	2	60/48	5-10		6.1 ppm	NO RECOVERY. Changing at 6.0 feet to: Brown, fine to coarse SAND and GRAVEL, little Silt, moist.	6' SAND and GRAVEL		
6									
7					5.3 ppm				
8									
9					5.5 ppm				
10	3	60/60	10-15		6.1 ppm	Brown, fine to coarse SAND, some Gravel, little Silt, moist. Changing at 12.0 feet to: Tan, fine SAND, trace Silt, moist with Gravel lenses from 12.5 to 1.6 feet. Changing at 14.0 feet to: Tan, fine to medium SAND, little Gravel, trace Silt, moist.	10' SAND		
11									
12					4.5 ppm				
13									
14					4.7 ppm				
15	4	60/42	15-20		2.1 ppm	NO RECOVERY. Changing at 16.5 feet to: Tan, fine SAND, trace Silt, moist. Changing at 17.0 feet to: Brown, fine to coarse SAND, some Silt, little Gravel, moist. Changing at 19.5 feet to: Tan, fine to medium SAND, trace Silt, moist.	15' NO RECOVERY 16.5' SAND		
16									
17					4.4 ppm			3	
18									
19					1.8 ppm				
20							20'		
20						Bottom of Borehole at 20.0 Feet		4 5	
21									
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 2.0 to 4.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 17.0 to 19.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-04
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-12-18 / 9-12-18
Boring Location: 594,327.34 N, 12,795,972.15 E
GS Elev.: 863.57' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/36	0-5		6.2 ppm	Dark brown, TOPSOIL, moist. Changing at 0.4 feet to: Brown, fine to medium SAND, little Silt, little Gravel, moist with Rock fragments a from 2.6 to 2.7 feet. Changing at 3.0 feet to: NO RECOVERY.	0.4' TOPSOIL SAND	1	None
1								2	
2					5.5 ppm				
3							3' NO RECOVERY		
4									
5	2	60/48	5-10		6.3 ppm	NO RECOVERY. Changing at 5.5 feet to: Tan, fine to medium SAND, moist. Changing at 9.0 feet to: Brown, fine to coarse SAND, some Silt, some Gravel and Rock fragments, moist.	5.5' SAND		
6									
7					4.3 ppm				
8									
9					7.9 ppm				
10	3	12/12	10-11		7.6 ppm	Brown and tan, fine to coarse SAND and SILT, trace Gravel, moist. Changing at 10.2 feet to: Brown, SAND and GRAVEL, some Silt, moist.	10' 10.2' SAND and SILT 11' SAND and GRAVEL		
11	4	18/18	11-12.5		7.7 ppm		11.6' SAND	3	
12						Brown, fine to coarse SAND, little Gravel, trace Silt, moist. Changing at 11.6 feet to: Brown, Clayey SILT, moist. Changing at 12.0 feet to: Brown, fine to coarse SAND and GRAVEL, moist.	12' Clayey SILT 12.5' SAND and GRAVEL		
13	5	30/16	12.5-15		4.1 ppm		13.2' NO RECOVERY		
14							SAND and SILT 14.5'		
15	6	60/46	15-20		2.1 ppm 3.3 ppm	NO RECOVERY. Changing at 13.2 feet to: Brown, fine to medium SAND and SILT, trace Gravel, trace Organic Matter (wood debris), dry (potential Sluff). Changing at 14.5 feet to: Brown, fine to coarse SAND and GRAVEL, little Silt, moist.	15' SAND and GRAVEL NO RECOVERY		
16							16.2' SAND and SILT		
17					5.5 ppm	NO RECOVERY. Changing at 16.2 feet to: Brown, SAND and SILT, little Gravel, moist. Changing at 17.0 feet to: Light brown and white, fine to coarse SAND, some Gravel, little Silt, moist. Changing at 18.0 feet to: Brown, SAND and SILT, trace Gravel, moist. Changing at 19.0 feet to: Tan, fine to medium SAND, little Silt, trace Gravel, moist.	17' SAND		
18							18' SAND and SILT		
19					7.1 ppm		19' SAND		
20							20'	4 5	
21						Bottom of Borehole at 20.0 Feet			
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 1.0 to 3.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 11.0 to 13.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: WV-SB-04

BORING_WELL_6267781 WWW.WOLVEN AVENUE.GPJ GZA_CORP.GDT 11/30/18

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-05
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-13-18 / 9-13-18
Boring Location: 594,326.49 N, 12,796,032.14 E
GS Elev.: 865.41' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/36	0-5		3.7 ppm	Dark brown, TOPSOIL, moist. Changing at 0.1 feet to: Brown, fine to coarse SAND, little Silt, little Gravel, moist. Changing at 1.6 feet to: Tan, fine to medium SAND, little Gravel, trace Silt, moist. Changing at 2.0 feet to: Tan, fine to medium SAND, trace Silt, moist. Changing a 3.0 feet to: NO RECOVERY.	0.1' TOPSOIL / SAND	1	None
1									
2					4.5 ppm				
3							3' NO RECOVERY		
4					1.5 ppm				
5	2	60/48	5-10		1,6 ppm	NO RECOVERY. Changing at 6.0 feet to: Tan, fine SAND, trace Silt, moist with brown, Sand and Silt lenses from 6.5 to 6.7 feet. Changing at 7.0 feet to: Tan, fine SAND, trace Silt, moist. Changing at 8.8 feet to: Brown, fine to coarse SAND, some Silt, little Gravel, moist. Changing at 9.8 feet to: Brown, fine to medium SAND, trace Silt, moist.		2	
6							6' SAND		
7					2.4 ppm				
8									
9					2.3 ppm				
10	3	60/60	10-15		8.7 ppm	Tan, fine SAND, trace Silt, moist. Changing at 11.4 feet to: Tan, fine to coarse SAND, little Silt, trace Gravel, moist. Changing at 12.0 feet to: Tan, fine to coarse SAND, some Gravel, little Silt, moist. Changing at 12.1 feet to: Tan, fine SAND, moist. Changing at 13.1 feet to: White and gray, SAND and GRAVEL, little Silt, moist.			
11									
12					6.4 ppm				
13							13.1' SAND and GRAVEL		
14					4.6 ppm				
15	4	60/43	15-20		13.9 ppm	NO RECOVERY. Changing at 15.4 feet to: Tan, fine to medium SAND, little to trace Silt, moist. Changing at 17.0 feet to: Brown, fine to medium SAND, little Silt, moist. Changing at 17.5 feet to: White and gray, fine to coarse SAND and GRAVEL, little Silt, moist.	15' 15.4' NO RECOVERY / SAND	3	
16									
17					7.0 ppm		17.5' SAND and GRAVEL		
18									
19					6.5 ppm				
20							20'	4	
21						Bottom of Borehole at 20.0 Feet		5	
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 5.0 to 7.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 15.0 to 17.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-06
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-11-18 / 9-11-18
Boring Location: 594,278.41 N, 12,795,761.42 E
GS Elev.: 865.34' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/33	0-5		4.6 ppm	Dark brown, TOPSOIL, moist. Changing at 0.4 feet to: Brown, fine to coarse SAND, some Silt, little Organic Matter (roots), moist. Changing at 0.7 feet to: Brown, fine SAND and SILT, moist. Changing at 2.0 feet to: Brown, SILT & CLAY, little Gravel, trace fine Sand, moist. Changing at 2.8 feet to: NO RECOVERY.	0.4' TOPSOIL 0.7' SAND SAND and SILT 2' SILT & CLAY 2.8' NO RECOVERY	1	None
1									
2					6.5 ppm			2	
3									
4									
5	2	60/24	5-10			NO RECOVERY. Changing at 8.0 feet to: Brown, SILT & CLAY, trace fine Sand, moist. Changing at 8.7 feet to: ROCK fragments. Changing at 8.9 feet to: Brown and orange, SAND and SILT, moist. Changing at 9.0 feet to: Brown, SILT & CLAY, trace fine Sand, moist.			
6									
7					5.6 ppm				
8							8' SILT & CLAY 8.7'		
9					3.9 ppm		8.9' ROCK Fragments 9' SAND and SILT 10'		
10	3	60/60	10-15		2.7 ppm	Brown, SILT, trace Clay, trace fine Sand, trace Gravel, moist. Changing at 12.3 feet to: Light brown, fine SAND and SILT, moist. Changing at 13.6 feet to: Brown, Clayey SILT, trace fine Sand, moist. Changing at 14.2 feet to: Light brown, fine to medium SAND, some Silt, moist. Changing at 13.6 feet to: Brown, Clayey SILT, trace fine Sand, moist. Changing at 14.2 feet to: Light brown, fine to medium SAND, some Silt, moist.	SILT & CLAY SILT	3	
11									
12					3.1 ppm		12.3' SAND and SILT		
13							13.6'		
14					4.2 ppm		14.2' Clayey SILT SAND		
15	4	30/30	15-17.5		3.5 ppm	Brown, SILT, trace fine Sand, little Rock fragments, moist. Changing at 15.2 feet to: Brown, fine to coarse SAND, little Gravel, moist.	15' 15.2' SILT SAND		
16									
17					5.3 ppm		17.5'		
18	5	30/26	17.5-20		2.9 ppm	NO RECOVERY. Changing at 17.8 feet to: Brown, fine to coarse SAND, trace Gravel, moist. Changing at 19.5 feet to: Brown and tan, fine to coarse SAND, trace Gravel, moist	17.8' NO RECOVERY SAND		
19					3.9 ppm				
20						Bottom of Borehole at 20.0 Feet	20'	4 5	
21									
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 2.0 to 4.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 10.0 to 12.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-07
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-11-18 / 9-11-18
Boring Location: 594,277.54 N, 12,795,821.41 E
GS Elev.: 868.08' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Info: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/39	0-5		0.9 ppm	Dark brown, TOPSOIL, some Organic Matter (leaf debris), moist. Changing at 0.5 feet to: Brown, fine to coarse SAND, some Gravel, little Silt, moist. Changing at 1.0 feet to: Brown, SAND and SILT, trace Gravel, moist. Changing at 3.2 feet to: NO RECOVERY.	0.5' TOPSOIL 1' SAND SAND and SILT 3.2' NO RECOVERY	1	None
1									
2					1.3 ppm				
3									
4									
5	2	60/40	5-10		1.8 ppm	NO RECOVERY. Changing at 6.7 feet to: Brown and orange, SAND and SILT, moist. Changing at 8.0 feet to: ROCK fragments. Changing at 8.1 feet to: Brown, fine to coarse SAND, some Gravel, little Silt, moist.	6.7' SAND and SILT 8' Rock Fragments SAND	2	
6									
7					1.8 ppm				
8									
9					1.8 ppm				
10	3	60/42	10-15		2.1 ppm	NO RECOVERY. Changing at 10.5 feet to: Brown, fine to coarse SAND, little Gravel, moist. Changing at 12.8 feet to: Tan, fine to medium SAND, trace Silt, moist. Changing at 13.8 feet to: Brown, Clayey SILT, trace fine Sand, moist. Changing at 14.6 feet to: Brown and tan, fine SAND, some Silt, moist.	10' NO RECOVERY 11.5' SAND 13.8' Clayey SILT 14.6'		
11									
12					1.9 ppm				
13								3	
14					2.6 ppm				
15	4	60/34	15-20			NO RECOVERY. Changing at 17.1 feet to: Brown, SAND and SILT, moist. Changing at 17.4 feet to: Tan, fine SAND, moist. Changing at 17.9 feet to: Brown, fine to coarse SAND, trace Gravel, moist. Changing at 19.0 feet to: Brown, fine to coarse SAND, little Gravel, moist.	15' SAND NO RECOVERY 17.1' SAND and SILT 17.4' SAND		
16									
17					2.2 ppm				
18									
19					2.7 ppm				
20							20'	4	
21						Bottom of Borehole at 20.0 Feet		5	
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 7.0 to 9.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 13.0 to 15.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: WV-SB-07

BORING_WELL_6267781 WWW.WOLVEN AVENUE.GPJ GZA_CORP.GDT 11/30/18

GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-08
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-12-18 / 9-12-18
Boring Location: 594,276.68 N, 12,795,881.40 E
GS Elev.: 869.14' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/36	0-5		5.9 ppm	Dark brown, TOPSOIL, moist. Changing at 0.4 feet to: Light brown, fine to coarse SAND, little Gravel, little Silt, moist. Changing at 2.5 feet to: Orange, fine to medium SAND, little Silt, moist. Changing at 3.0 feet to: NO RECOVERY.	0.4' TOPSOIL SAND 3'	1	None
1									
2					6.5 ppm				
3							NO RECOVERY		
4									
5	2	60/45	5-10		7.6 ppm	NO RECOVERY. Changing at 6.2 feet to: Brown, Clayey SILT, trace fine Sand, moist. Changing at 6.8 feet to: Tan, fine SAND, moist. Changing at 7.3 feet to: Light brown, SILT, moist. Changing at 7.6 feet to: Tan, fine SAND, moist. Changing at 8.2 feet to: Light brown, SILT, moist. Changing at 8.5 feet to: Tan, fine SAND, moist. Changing at 8.8 feet to: Brown, SAND and GRAVEL, little Silt, moist. Changing at 9.0 feet to: Light brown, fine to coarse SAND, some Cobbles, little Gravel, little Silt, moist. Changing at 9.8 feet to: Light brown, SILT, moist.	6.2' Clayey SILT 6.8' SAND 7.3' SILT 7.6' SAND 8.2' SILT 8.5' SAND 8.8' SAND and GRAVEL 9' SAND 9.8' SILT 10' NO RECOVERY 10.3' SILT 10.6' SAND	2	
6									
7					7.9 ppm				
8									
9					7.8 ppm				
10	3	60/56	10-15		6.1 ppm				
11									
12					6.9 ppm	NO RECOVERY. Changing at 10.3 feet to: Brown, SILT, moist. Changing at 10.6 feet to: Tan, fine to medium SAND, little Gravel, trace Silt, moist. Changing at 11.7 feet to: Tan fine to medium SAND, trace Silt, moist.			
13									
14					7.7 ppm			3	
15	4	60/48	15-20		5.0 ppm	NO RECOVERY. Changing at 16.0 feet to: Tan, fine to medium SAND, trace Silt, moist.	15' NO RECOVERY 16' SAND		
16									
17					3.8 ppm				
18									
19					5.0 ppm				
20						Bottom of Borehole at 20.0 Feet	20'	4 5	
21									
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 6.0 to 8.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 14.0 to 16.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-09
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-12-18 / 9-12-18
Boring Location: 594,275.82 N, 12,795,941.40 E
GS Elev.: 865.48' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/31	0-5		5.6 ppm	Dark brown, TOPSOIL, moist. Changing at 0.3 feet to: Brown, fine to coarse SAND and GRAVEL, some Silt, moist. Changing at 2.6 feet to: NO RECOVERY.	0.3' TOPSOIL; SAND and GRAVEL	1	None
1									
2					7.0 ppm		2.6' NO RECOVERY		
3									
4									
5	2	60/48	5-10		5.2 ppm	NO RECOVERY. Changing at 6.0 feet to: Orange and brown, fine to medium SAND, little Silt, moist. Changing at: 7.0 feet to: Brown, fine to coarse SAND and GRAVEL, little Silt, moist. Changing at 9.0 feet to: Tan, fine to medium SAND, trace Silt, moist.	6' SAND		
6							7' SAND and GRAVEL	2	
7					6.8 ppm				
8									
9					7.3 ppm		9' SAND		
10	3	60/60	10-15		6.6 ppm	Tan, fine to medium SAND, trace Silt, moist. Changing at 11.4 feet to: Tan, fine SAND, moist with Gravel lenses from 12.6 to 12.7 feet.			
11									
12					6.4 ppm				
13									
14					6.4 ppm				
15	4	30/42	15-17.5		6.5 ppm	Tan, fine to medium SAND, moist. Changing at 16.0 feet to: Brown, SILT, moist.	16' SILT		
16									
17					6.8 ppm			3	
18	5	30/30	17.5-20		5.6 ppm	Brown, SILT, moist. Changing at 17.8 feet to: Tan, fine SAND, moist.	17.8' SAND		
19									
20					6.1 ppm		20'		
21						Bottom of Borehole at 20.0 Feet		4 5	
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 7.0 to 9.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 17.0 to 19.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-10
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-13-18 / 9-13-18
Boring Location: 594,274.96 N, 12,796,001.39 E
GS Elev.: 865.94' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/36	0-5		4.8 ppm	Dark brown, TOPSOIL, moist. Changing at 0.1 feet to: Brown, fine to coarse SAND and GRAVEL, little Silt, moist. Changing at 2.0 feet to: Brown, fine to coarse SAND, some Gravel, little Silt, moist. Changing at 3.0 feet to: NO RECOVERY.	0.1' TOPSOIL SAND and GRAVEL 2' SAND 3' NO RECOVERY	1	None
1									
2					5. ppm				
3									
4									
5	2	60/54	5-10		5.2 ppm	NO RECOVERY. Changing at 5.5 feet to: Brown, fine to coarse SAND, little Silt, trace Gravel, moist with brown, Sand and Silt lense from 6.1 to 6.2 feet. Changing at 6.5 feet to: Brown, SILT, moist. Changing at 7.1 feet to: Tan, fine SAND, moist. Changing at 8.3 feet to: Brown, SAND and GRAVEL, moist.	5.5' SAND 6.5' SILT 7.1' SAND 8.3' SAND and GRAVEL	2	
6									
7					5.5 ppm				
8									
9					5.8 ppm				
10	3	60/60	10-15		6.5 ppm	Tan, fine to medium SAND, trace Silt, moist with brown, Silt lense from 13.1 to 13.3 feet.	10' SAND		
11									
12					1.8 ppm				
13									
14					2.3 ppm				
15	4	60/60	15-20		8.3 ppm	Brown, fine to coarse SAND, some Gravel, little Silt, moist Changing at 15.8 feet to: Tan, fine to medium SAND, moist with slight discoloration from 16.1 to 16.2 feet. Gravel lenses from 19.5 to 20 feet.		3	
16									
17					6.1 ppm				
18	5	30	17.5-20						
19					6.1 ppm				
20							20'	4	
						Bottom of Borehole at 20.0 Feet		5	
21									
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 6.0 to 8.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 16.0 to 18.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-11
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-14-18 / 9-14-18
Boring Location: 594,271.30 N, 12,796,079.77 E
GS Elev.: 881.31' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	60/28	0-5		1.1 ppm	Dark brown, TOPSOIL, moist. Changing at 0.1 feet to: Tan, fine to coarse SAND, little Gravel, little Silt, moist. Changing at 1.8 feet to: Tan, fine to medium SAND, trace Silt, moist. Changing at 2.3 feet to: NO RECOVERY.	0.1' TOPSOIL / SAND	1	None
2					1.7 ppm		2.3' NO RECOVERY		
5	2	60/45	5-10		2.4 ppm	NO RECOVERY. Changing at 5.2 feet to: Tan and brown, fine to medium SAND, some Silt, trace Gravel, moist with brown, Sand and Silt lense (possible TOPSOIL) from 5.8 to 5.9 feet). Changing at 7.0 feet to: Tan, fine SAND and SILT, moist. Changing at 7.6 feet to: Tan, fine to medium SAND, trace Silt, trace Gravel, moist.	6.2' SAND	2	
8					2.8 ppm				
9					1.1 ppm				
10	3	60/60	10-15		3.0 ppm	Brown and tan, fine SAND and SILT, trace Gravel, moist. Changing 11.0 feet to: Tan, fine to medium SAND, trace Silt, trace Gravel, moist. Changing at 14.0 feet to: Tan, fine to coarse SAND, little Gravel, trace Silt, moist.			
12					3.1 ppm				
14					2.7 ppm				
15	4	60/48	15-20		3.3 ppm	NO RECOVERY. Changing at 16.0 feet to: Brown, fine to medium SAND, some Silt, moist. Changing at 17.0 feet to: Brown and tan, fine to coarse SAND and GRAVEL, little Silt, moist.	15' NO RECOVERY 16' SAND	3	
17					0.9 ppm				
19					3.0 ppm		20'		
20						Bottom of Borehole at 20.0 Feet		4 5	

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 8.0 to 10.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 16.0 to 18.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-12
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-11-18 / 9-11-18
Boring Location: 594,225.42 N, 12,795,711.04 E
GS Elev.: 868.37' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/39	0-5		4.3 ppm	Dark brown, TOPSOIL, moist. Changing at 0.3 feet to: Dark brown, SAND and SILT, trace Gravel, trace Organic Matter (roots), moist. Changing at 1.0 foot to: Brown and orange, fine SAND, some Silt, little Gravel, moist. Changing at 3.0 feet to: Tan, fine to medium SAND, trace Silt, moist. Changing at 3.2 feet to: NO RECOVERY.	0.3' TOPSOIL / SAND and SILT; 1' SAND; 3.2' NO RECOVERY	1	None
1									
2					6.6 ppm				
3									
4									
5	2	60/36	5-10			NO RECOVERY. Changing at 7.0 feet to: Brown and orange, fine to medium SAND, some Silt, trace Gravel, moist. Changing at 8.0 feet to: Tan and brown, fine SAND, some Silt, moist. Changing at 9.3 feet to: Tan, fine to medium SAND, trace Silt, moist.	7' SAND		
6									
7					3.8 ppm			2	
8									
9					4.8 ppm				
10	3	60/43	10-15		4.4 ppm	NO RECOVERY. Changing at 11.4 feet to: Tan, fine to coarse SAND, moist. Changing at 12.0 feet to: Tan, fine to coarse SAND, trace Gravel, moist. Changing at 14.0 feet to: Brown, fine to coarse SAND, some Silt, trace Gravel, moist.	10' NO RECOVERY; 11.4' SAND		
11									
12					2.3 ppm				
13									
14					2.3 ppm			3	
15	4	18/18	15-16.5		2.2 ppm	Brown, fine to coarse SAND, some Silt, little Gravel, moist. Changing at 16.0 feet to: Brown, SILT, trace fine Sand, trace Gravel, moist.	16' SILT; 16.5'		
16					2.1 ppm			4	
17						Bottom of Borehole at 16.5 Feet		5	
18									
19									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 7.0 to 9.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 14.0 to 16.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-13
Page: 1 of 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-12-18 / 9-12-18
Boring Location: 594,226.02 N, 12,795,790.66 E
GS Elev.: 868.23' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	60/44	0-5		5.2 ppm	Dark brown, TOPSOIL, moist. Changing at 0.3 feet to: Brown, SILT, trace fine Sand, trace Gravel, moist. Changing at 1.8 feet to: Brown and red, Claeyey SILT, trace fine Sand, trace Gravel, moist. Changing at 3.0 feet to: Brown, SAND and GRAVEL, some Silt, moist. Changing at 3.8 feet to: NO RECOVERY.	0.3' TOPSOIL / SILT	1	None
2					3.0 ppm		1.8' Clayey SILT		
3							3' SAND and GRAVEL	2	
4					3.9 ppm		3.8' NO RECOVERY		
5	2	60/44	5-10		5.2 ppm	NO RECOVERY. Changing at 6.5 feet to: Brown, SAND and GRAVEL, some Silt, moist. Changing at 8.0 feet to: Brown, fine SAND and SILT, trace Gravel, moist. Changing at 9.0 feet to: Brown and orange, fine SAND and SILT, trace Gravel, moist.			
6							6.4' SAND and GRAVEL		
7					5.8 ppm				
8							8' SAND and SILT		
9					4.2 ppm				
10	3	60/40	10-15		1.5 ppm	NO RECOVERY. Changing at 11.8 feet to: Tan, fine to medium SAND, little Gravel, trace Silt, moist. Changing at 12.2 feet to: Brown, fine to coarse SAND and GRAVEL, little Silt, moist. Changing at 12.7 feet to: Orange, fine to medium SAND, little Silt, moist. Changing at 14.8 feet to: Brown, SILT, moist.	10' NO RECOVERY		
11							11.8'		
12					4.7 ppm		12.2' SAND		
13							12.7' SAND and GRAVEL / SAND		
14					3.4 ppm		14.8'		
15	4	30/30	15-17.5		9.0 ppm	Brown, CLAY & SILT, trace Gravel, trace fine Sand, dry.	15' SILT / CLAY & SILT	3	
16									
17					6.1 ppm				
18						Bottom of Borehole at 17.5 Feet		4 5	
19							20'		

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 3.0 to 5.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 15.0 to 17.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-14
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-11-18 / 9-11-18
Boring Location: 594,225.16 N, 12,795,850.67 E
GS Elev.: 869.54' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/36	0-5		2.2 ppm	Dark brown, TOPSOIL, moist. Changing at 0.4 feet to: Brown, fine SAND, some Silt, moist. Changing at 1.3 feet to: Brown, SAND and SILT, moist. Changing at 2.5 feet to: Brown, fine to medium SAND, some Silt, moist. Changing at 3.0 feet to: NO RECOVERY.	0.4' TOPSOIL / SAND; 1.3' SAND and SILT; 2.5' SAND; 3' NO RECOVERY	1	None
2					2.0 ppm				
5	2	60/39	5-10		3.6 ppm	NO RECOVERY. Changing at 6.8 feet to: Brown and tan, fine to medium SAND, some Silt, moist. Changing at 8.0 feet to: ROCK Fragments. Changing at 8.1 feet to: Brown, fine to medium SAND, some Silt, little Gravel, moist. Changing at 9.0 feet to: Brown and tan, fine SAND, some Silt, moist.	6.8' SAND; 8' 8.1' ROCK Fragments / SAND	2	
7					5.6 ppm				
9					2.4 ppm				
10	3	60/43	10-15		4.2 ppm	NO RECOVERY. Tan, fine SAND, trace Silt, moist. Changing at 12.0 feet to: Tan, fine to medium SAND, trace Silt, moist.	10' NO RECOVERY; 11.4' SAND	3	
12					3.7 ppm				
14					4.0 ppm				
15	4	60/36	15-20			NO RECOVERY. Changing at 17.0 feet to: Tan, fine to medium SAND, trace Silt, moist.	15' NO RECOVERY; 17' SAND		
17					1.5 ppm				
19					3.7 ppm				
20						Bottom of Borehole at 20.0 Feet	20'	4 5	

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 8.0 to 10.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 12.0 to 14.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: WV-SB-14

BORING_WELL_6267781 WWW.WOLVEN AVENUE.GPJ GZA_CORP.GDT 11/30/18

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Engineers and Scientists

Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-15
Page: 1 of 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-13-18 / 9-13-18
Boring Location: 594,216.42 N, 12,795,921.06 E
GS Elev.: 875.42' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/40	0-5		4.0 ppm	Dark brown, TOPSOIL, moist. Changing at 0.5 feet to: Brown, SAND and SILT, trace Gravel, moist. Changing at 1.3 feet to: Brown and orange, SILT & CLAY, moist. Changing at 2.3 feet to: Brown, fine to coarse SAND, little Silt, trace Gravel, moist. Changing at 3.0 feet to: Tan, fine to medium SAND, trace Silt, moist. Changing at 3.4 feet to: NO RECOVERY.	0.5' TOPSOIL 1.1' SAND and SILT SILT & CLAY 2.3' SAND 3.3' NO RECOVERY	1	None
1								2	
2					4.4 ppm				
3									
4									
5	2	60/40	5-10		3.0 ppm	NO RECOVERY. Changing at 1.7 feet to: Tan, fine to medium SAND, some Silt, moist. Changing at 7.0 feet to: Dark brown, SAND and SILT, little Organics (possible TOPSOIL). Changing at 7.2 feet to: Tan and orange, fine to medium SAND, trace Silt, moist. Changing at 8.1 feet to: Light brown, SILT, moist. Changing at 9.0 feet to: Light brown, SILT, dry. Changing at 9.5 feet to: Tan, fine to medium SAND, dry.	6.7' 7' SAND 7.2' SAND and SILT 8.1' SAND SILT 9.5'		
6									
7					1.8 ppm				
8									
9					4.9 ppm				
10	3	60/53	10-15		4.4 ppm	NO RECOVERY. Changing at 10.6 feet to: Tan, fine SAND, dry. Changing at 11.1 to: Tan and brown, SILT, dry. Changing at 12.0 feet to: Tan, fine SAND, moist.	10' SAND 10.6' NO RECOVERY 11.1' SAND SILT 12' SAND		
11									
12					3.9 ppm				
13									
14					0.4 ppm				
15	4	60/50	15-20		4.6 ppm	NO RECOVERY. Tan, fine SAND, moist with slight discoloration. Changing at 17.0 feet to: Tan, fine to medium SAND, trace Silt, moist.	15' 15.8' NO RECOVERY SAND		
16									
17					4.5 ppm				
18								3	
19					4.4 ppm				
20							20'	4	
21						Bottom of Borehole at 20.0 Feet		5	
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 1.0 to 3.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 18.0 to 20.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-16
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-13-18 / 9-13-18
Boring Location: 594,223.43 N, 12,795,970.64 E
GS Elev.: 870.26' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	60/33	0-5		1.0 ppm	Dark brown, TOPSOIL, moist. Changing at 0.1 feet to: Tan, fine to medium SAND, trace Gravel, moist. Changing at 0.5 feet to: Tan, fine SAND, moist. Changing at 2.2 feet to: Tan, fine to medium SAND, moist. Changing at 2.8 feet to: NO RECOVERY.	0.1' TOPSOIL / SAND; 2.8' NO RECOVERY	1	None
2					5.0 ppm				
3									
4								2	
5	2	60/60	5-10		3.3 ppm	Brown, SAND and SILT, dry (possible SLUFF). Changing at 5.3 feet to: Tan, fine to medium SAND, moist with slight discoloration). Changing at 5.6 feet to: Tan, fine SAND, moist. Changing at 7.5 feet to: Tan, fine to medium SAND, moist. Changing at 9.0 feet to: Brown, SILT, little fine Sand, trace Gravel, moist. Changing at 9.6 feet to: Tan, fine SAND, moist.	5' 5.3' SAND and SILT / SAND; 9' SILT; 9.6' SAND		
6									
7					3.3 ppm				
8									
9					5.9 ppm				
10	3	60/60	10-15		3.7 ppm	Tan, fine to medium SAND, trace Silt, moist with slight discoloration. Changing at 10.8 feet to: Brown, SAND and SILT, moist. Changing at 11.0 feet to: Tan, fine to medium SAND, moist. Changing at 14.0 feet to: Tan, fine to medium SAND, trace gravel, moist.	10.9' 11' SAND and SILT / SAND		
11									
12					3.3 ppm				
13									
14								3	
15	4	60/60	15-20		5.0 ppm	Light tan and white, fine SAND, trace Silt, moist with slight discoloration. Changing at 16.3 feet to: Tan, fine to medium SAND, moist.			
16									
17					3.0 ppm				
18									
19					3.7 ppm				
20							20'		
20						Bottom of Borehole at 20.0 Feet		4 5	
21									
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 4.0 to 6.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 14.0 to 16.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Engineers and Scientists

Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-17
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-14-18 / 9-14-18
Boring Location: 594,229.89 N, 12,796,053.56 E
GS Elev.: 885.96' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/30	0-5		1.8 ppm	Dark brown, SAND and SILT, moist (TOPSOIL). Changing at 0.5 feet to: Orange, fine SAND and SILT, moist. Changing at 2.0 feet to: Tan, fine SAND, little Silt, moist. Changing at 2.5 feet to: NO RECOVERY.	SAND (TOPSOIL) 1'	1	None
1							SAND	2	
2					1.8 ppm		2.5'		
3							NO RECOVERY		
4									
5	2	60/38	5-10			NO RECOVERY. Changing at 7.0 feet to: Tan, fine SAND, trace Silt, moist. Changing at 7.8 feet to: Brown, SANd and SILT, dry. Changing at 8.8 feet to: Light tan, SILT, dry. Changing at 9.4 feet to: Light brown and tan, fine SAND, trace Silt, moist.	7'		
6									
7					3.0 ppm		SAND 7.8'		
8							SAND and SILT 8.8'		
9					1.3 ppm		SILT 9.4'		
10	3	60/34	10-15			NO RECOVERY. Changing at 12.1 feet to: Tan and brown, fine SAND, little Silt, moist. Changing at 12.9 feet to: Tan, fine to coarse SAND, little Gravel, trace Silt, dry. Light brown, Silt lenses from 14.8 to 14.8 feet.	SAND 10' NO RECOVERY		
11									
12					1.9 ppm		12.1' SAND		
13									
14					3.8 ppm				
15	4	60/48	15-20		1.8 ppm	NO RECOVERY. Changing at 16.0 feet to: Light brown, fine to coarse SAND and SILT, trace Gravel, dry. Changing at 17.0 feet to: White and gray, fine to coarse SAND and SILT, trace Gravel, dry. Changing at 17.8 feet to: Light brown, fine to coarse SAND and SILT, some Gravel, dry.	15' NO RECOVERY 16'		
16							SAND and SILT		
17					3.8 ppm				
18								3	
19					3.8 ppm				
20							20'		
21						Bottom of Borehole at 20.0 Feet		4 5	
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 1.0 to 3.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 18.0 to 20.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-18
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-12-18 / 9-12-18
Boring Location: 594,174.50 N, 12,795,759.92 E
GS Elev.: 867.12' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/39	0-5		2.6 ppm	Dark brown, TOPSOIL, moist. Changing at 0.8 feet to: Brown and orange, SAND and SILT, moist. Changing at 3.0 feet to: Brown and red, CLAY & SILT, moist. Changing at 3.2 feet to: NO RECOVERY.	TOPSOIL	1	None
1							0.8' SAND and SILT	2	
2					2.9 ppm				
3							3' 3.2' CLAY & SILT NO RECOVERY		
4									
5	2	60/42	5-10		4.5 ppm	NO RECOVERY. Changing at 6.5 feet to: Brown, SILT & CLAY, trace Gravel, trace fine Sand, moist.			
6							6.5' SILT & CLAY		
7					1.8 ppm				
8									
9					3.3 ppm				
10	3	60/36	10-15		5.6 ppm	Brown, Silty CLAY, trace Gravel, dry. Changing at 13.0 feet to: Brown, CLAY & SILT, trace fine Sand, moist. Changing at 13.7 feet to: Brown, Silty CLAY, trace Gravel, dry.	10' Silty CLAY		
11								3	
12					5.6 ppm				
13					5.0 ppm		13' CLAY & SILT		
14							13.7' Silty CLAY		
15	4	30/30	15-17.5		5.0 ppm	Brown, Silty CLAY, trace Gravel, dry.			
16									
17					5.2 ppm		17.5'	4	
18						Bottom of Borehole at 17.5 Feet		5	
19									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 1.0 to 3.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 11.0 to 13.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-19
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-11-18 / 9-11-18
Boring Location: 594,173.64 N, 12,795,819.91 E
GS Elev.: 870.77' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/36	0-5		3.4 ppm	Dark brown, TOPSOIL, moist. Changing at 0.4 feet to: Brown and orange, fine SAND and SILT, moist. Changing at 2.0 feet to: Tan and orange, fine SAND, some Silt moist. Changing at 3.0 feet to: NO RECOVERY.	0.4' TOPSOIL SAND 2'	1 2	None
1									
2					3.8 ppm		NO RECOVERY		
3									
4									
5	2	60/42	5-10		4.6 ppm	NO RECOVERY. Changing at 6.5 feet to: Brown and tan, fine to medium SAND, trace Silt, moist. Changing at 7.5 feet to: Tan and orange, fine to medium SAND, some Silt, moist.	6.5' SAND		
6									
7					0.9 ppm				
8									
9					4.0 ppm				
10	3	60/48	10-15		3.5 ppm	NO RECOVERY. Changing at 11.0 feet to: Brown, SILT, trace fine Sand, trace Gravel, moist. Changing at 11.8 feet to: Brown, fine SAND, trace Silt, moist. Changing at 12.0 feet to: Tan and brown, fine to medium SAND, trace Silt, trace Gravel, moist. Changing at 13.0 feet to: Light brown, fine to coarse SAND, little Gravel, moist.	10' NO RECOVERY 11' SILT 11.8' SAND		
11									
12					3.8 ppm				
13									
14					2.2 ppm				
15	4	60/48	15-20		3.3 ppm	NO RECOVERY. Changing at 16.0 feet to: Tan, fine to medium SAND, little Gravel, trace Silt, moist.	15' NO RECOVERY 16' SAND		
16									
17					3.0 ppm				
18								3	
19					3.9 ppm				
20						Bottom of Borehole at 20.0 Feet	20'	4 5	
21									
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 1.0 to 3.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 18.0 to 20.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: WV-SB-19

BORING_WELL_6267781 WWW.WOLVEN AVENUE.GPJ GZA_CORP.GDT 11/30/18

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-20
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-13-18 / 9-13-18
Boring Location: 594,172.77 N, 12,795,879.90 E
GS Elev.: 871.54' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/32	0-5		3.0 ppm	Dark brown, TOPSOIL, moist. Changing at 0.4 feet to: Brown and orange, SAND and SILT. Changing at 2.7 feet to: NO RECOVERY.	0.4' TOPSOIL SAND and SILT 2.7' NO RECOVERY	1	None
1									
2					3.8 ppm				
3									
4									
5	2	60/40	5-10		3.0 ppm	NO RECOVERY. Changing at 6.8 feet to: Tan, fine to medium SAND and SILT, moist. Changing at 7.0 feet to: Tan and brown, fine to medium SAND, little Silt, trace Gravel, moist.	6.8' 7' SAND and SILT SAND	2	
6									
7					2.0 ppm				
8									
9					4.4 ppm				
10	3	60/45	10-15		4.5 ppm	NO RECOVERY. Changing at 11.2 feet to: Tan, fine SAND and SILT, trace Gravel, dry. Changing at 11.8 feet to: Brown, fine to coarse SAND, little Gravel, trace Silt, moist.	10' NO RECOVERY 11.2' SAND	3	
11									
12					2.7 ppm				
13									
14					3.6 ppm				
15	4	60/56	15-20		3.9 ppm	NO RECOVERY. Changing at 15.3 feet to: Brown, SAND and SILT, trace Gravel, dry. Changing at 16.3 feet to: Tan, fine to medium SAND, trace Silt, moist. Changing at 18.3 feet to: Tan, fine to medium SAND, little Gravel, trace Silt, moist. Changing at 19.0 feet to: Tan, fine to coarse SAND, little Gravel, moist.	15' 15.3' NO RECOVERY 16.3' SAND and SILT SAND		
16									
17					3.5 ppm				
18									
19					3.0 ppm				
20						Bottom of Borehole at 20.0 Feet	20'	4 5	
21									
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 6.0 to 8.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 11.0 to 13.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: WV-SB-20

BORING_WELL_6267781 WWW.WOLVEN AVENUE.GPJ GZA_CORP.GDT 11/30/18

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-21
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-17-18 / 9-17-18
Boring Location: 594,171.91 N, 12,795,939.90 E
GS Elev.: 875.33' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	60/24	0-5		1.1 ppm	Dark brown, TOPSOIL, moist. Changing at 0.4 feet to: Brown, SAND and SILT, moist. Changing at 2.0 to: NO RECOVERY.	0.4' SAND and SILT NO RECOVERY	1	None
5	2	60/42	5-10		2.0 ppm 1.5 ppm	NO RECOVERY. Changing at 5.5 feet to: Brown, SAND and SILT, moist. Changing at 7.0 feet to: Brown, Clayey SILT, little fine Sand, dry. Changing at 7.9 feet to: Brown, SAND and SILT, dry. Changing at 9.0 feet to: Brown, fine to coarse SAND, little Gravel, little Silt, dry.	6.5' 7' SAND and SILT Clayey SILT 7.9' SAND and SILT 9'	2	
9					2.0 ppm		SAND 10'		
10	3	60/32	10-15			NO RECOVERY. Changing at 12.3 feet to: Brown and tan, fine to medium SAND, little Silt, moist with brown, Silt lenses from 13.1 to 13.2 feet. Changing at 14.0 feet to: Tan, fine to medium SAND, trace Silt, moist.	NO RECOVERY 12.3'		
12					2.5 ppm		SAND	3	
14					2.8 ppm		15'		
15	4	60/51	15-20		0.8 ppm	NO RECOVERY. Changing at 15.8 feet to: Brown, fine to medium SAND, little Silt, moist. Changing at 16.7 feet to: Tan and brown, fine to coarse SAND, little Gravel, trace Silt, moist.	NO RECOVERY 15.8' SAND		
17					1.6 ppm				
19					1.6 ppm		20'		
20						Bottom of Borehole at 20.0 Feet		4 5	
21									
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 7.0 to 9.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 12.0 to 14.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: WV-SB-21

BORING_WELL_6267781 WWW.WOLVEN AVENUE.GPJ GZA_CORP.GDT 11/30/18

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-22
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-14-18 / 9-14-18
Boring Location: 594,171.05 N, 12,795,999.90 E
GS Elev.: 878.74' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/18	0-5		2.9 ppm	Dark brown, TOPSOIL, moist. Changing at 0.1 feet to: Brown and orange, Clayey SILT, trace fine Sand, moist. Changing at 2.0 feet to: NO RECOVERY.	0.1' TOPSOIL / Clayey SILT; 2' NO RECOVERY	1, 2	None
5	2	60/36	5-10		3.0 ppm	NO RECOVERY. Changing at 7.0 feet to: Orange and brown, fine to medium SAND, some Silt, moist with brown, Sand and Silt lenses from 7.2 to 7.3 feet. Changing at 7.8 feet to: Tan, fine to coarse SAND, little Gravel, little Silt, moist.	7' SAND		
10	3	60/36	10-15		2.6 ppm 1.6 ppm	NO RECOVERY. Changing at 12.7 feet to: Tan, fine to coarse SAND, dry. Changing at 13.0 feet to: Light brown, SILT, moist. Changing at 14.0 feet to: Light brown, SILT, trace fine Sand, moist.	10' NO RECOVERY; 12.7' SAND; 14' SILT	3	
15	4	60/40	15-20		2.8 ppm 2.9 ppm 3.5 ppm 2.2 ppm	Brown, fine to medium SAND, trace Gravel, trace Silt, moist. Changing at 16.8 feet to: Brown, SAND and SILT, trace Gravel, moist. Changing at 17.0 feet to: Brown, fine to medium SAND, trace Gravel, trace Silt, moist. Changing at 17.8 feet to: Tan, fine to medium SAND, moist.	15' NO RECOVERY; 16.6' 17SAND and SILT; SAND; 20'		
20						Bottom of Borehole at 20.0 Feet		4, 5	

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 0.0 to 2.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 13.0 to 15.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-23
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-12-18 / 9-12-18
Boring Location: 594,122.97 N, 12,795,729.17 E
GS Elev.: 866.37' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/50	0-5		1.3 ppm	Dark brown, TOPSOIL, moist. Changing at 0.1 feet to: Brown, fine SAND and SILT, moist. Changing at 2.0 feet to: Brown, Clayey SILT, some fine Sand, moist. Changing at 1.6 feet to: Light brown, fine SAND and SILT, moist. Changing at 4.1 feet to: NO RECOVERY.	SAND and SILT	1	None
1									
2					1.9 ppm		2' Clayey SILT		
3							3.6'		
4					1.6 ppm		4.1' SAND and SILT	2	
5	2	60/60	5-10		1.9 ppm	Brown, CLAY & SILT, little fine to medium Sand, dry. Changing at 6.4 feet to: Brown, SILT, trace fine Sand, trace Clay, trace Gravel, moist. Changing at 7.7 feet to: Brown, SILT, trace fine Sand, trace Clay, trace Gravel, moist.	5' NO RECOVERY CLAY & SILT		
6							6.4' SILT		
7					1.8 ppm		7.7'		
8							CLAY		
9					2.0 ppm				
10	3	30/30	10-12.5		3.0 ppm	Brown, Silty CLAY, trace Gravel, dry.			
11									
12					3.3 ppm		12.5'		
13	4	30/30	12.5-15		3.3 ppm	Brown, Silty CLAY, trace Gravel, dry.	Silty CLAY		
14									
15	5	24/24	15-17		2.8 ppm 2.5 ppm	Brown, Silty CLAY, trace Gravel, dry.		3	
16									
17							17'	4	
18						Bottom of Borehole at 17.0 Feet		5	
19									
20									
21									
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 4.0 to 6.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 15.0 to 17.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-24
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-12-18 / 9-12-18
Boring Location: 594,122.11 N, 12,795,789.16 E
GS Elev.: 868.85' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/36	0-5		1.0 ppm	Dark brown, TOPSOIL, moist. Changing at 0.6 feet to: Brown and orange, SAND and SILT, trace Gravel, moist. Changing at 3.0 feet to: NO RECOVERY.	0.4' TOPSOIL 0.6' SAND SAND and SILT	1	None
2					3.5 ppm				
3							3' NO RECOVERY		
5	2	60/51	5-10		2.1 ppm	NO RECOVERY. Changing at 5.8 feet to: Brown and red, SAND and SILT, moist. Changing at 7.0 feet to: Brown, SILT, some fine Sand, trace Gravel, moist. Changing at 7.2 feet to: Light tan, SILT, moist. Changing at 8.6 feet to: Tan, fine SAND, moist. Changing at 8.8 feet to: Light tan, SILT, moist.	5.8' SAND and SILT 7' SILT 7.6' SAND		
7					1.5 ppm			2	
9					2.9 ppm		9.8'		
10	3	24/24	10-12		2.9 ppm	Brown, SILT, trace Gravel, moist. Changing at 11.0 feet to: Light gray, fine to coarse SAND, some Gravel, little Silt, moist. Changing at 12.0 feet to: NO RECOVERY. Changing at 12.4 feet to: Light brown, fine to coarse SAND, little Gravel, moist.	SILT 11' SAND 12' NO RECOVERY		
12					3.2 ppm			3	
14					1.9 ppm				
15	4	60/48	15-20		1.9 ppm	NO RECOVERY. Changing at 16.0 feet to: Light brown and tan, fine to medium SAND, trace Silt, moist with traces of light brown, Silt from 17.6 to 17.8 feet.	15' NO RECOVERY 16' SAND		
17					2.7 ppm				
19					2.9 ppm		20'		
20						Bottom of Borehole at 20.0 Feet		4 5	

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 7.0 to 9.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 12.0 to 14.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-25
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-17-18 / 9-17-18
Boring Location: 594,121.25 N, 12,795,849.16 E
GS Elev.: 873.18' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/39	0-5		2.6 ppm	Dark brown, TOPSOIL, moist. Changing at 0.5 feet to: Brown, SAND and SILT, moist. Changing at 0.6 feet to: Brown, tan and orange, fine to medium SAND, little Silt, moist. Changing at 3.2 feet to: NO RECOVERY.	0.5' TOPSOIL SAND	1 2	None
1									
2					2.5 ppm		2.6'		
3							NO RECOVERY		
4									
5	2	60/36	5-10			NO RECOVERY. Changing at 9.0 feet to: Tan, fine to coarse SAND, trace Silt, moist.			
6									
7					1.6 ppm		7' SAND		
8									
9					1.6 ppm				
10	3	60/60	10-15		3.4 ppm	Tan, fine to coarse SAND, little Gravel, trace Silt, moist. Changing at 12.0 feet to: Tan, fine to coarse SAND, trace Silt, trace Gravel, moist. Changing at 14.0 feet to: Tan, fine to medium SAND, trace Silt, moist.			
11									
12					3.4 ppm				
13								3	
14					2.8 ppm				
15	4	60/60	15-20		4.3 ppm	Gray and white, fine SAND, some Silt, trace Gravel, dry. Changing at 16.7 feet to: Tan, fine to medium SAND, trace Silt, moist. Changing at 17.9 feet to: Brown, fine to coarse SAND and GRAVEL, little Silt, moist with orange, fine to medium Sand lenses at 19.9 to 20.0 feet.			
16									
17					1.6 ppm				
18							17.9' SAND and GRAVEL		
19					2.7 ppm				
20						Bottom of Borehole at 20.0 Feet	19.9' 20' SAND	4 5	
21									
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 1.0 to 3.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 13.0 to 15.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-26
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-17-18 / 9-17-18
Boring Location: 594,120.39 N, 12,795,909.15 E
GS Elev.: 876.84' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1–3	1	60/36	0-5		2.3 ppm 0.9 ppm	Dark brown, TOPSOIL, moist. Changing at 0.1 feet to: Brown, SAND and SILT, moist. Changing at 0.6 feet to: Brown, Clayey SILT, little fine Sand, moist. Changing at 1.3 feet to: Green, crushed ROCK. Changing at 1.5 feet to: Brown, Clayey SILT, little fine Sand, moist with fine Gravel lenses at 3.8 feet.	0.1' TOPSOIL 0.6' SAND and SILT 1.4' SILT 1.5' Crushed ROCK SILT	1	None
4–5							4' NO RECOVERY		
5–7	2	60/42	5-10		1.0 ppm 3.1 ppm	NO RECOVERY. Changing at 6.5 feet to: Tan, fine SAND and SILT, dry. Changing at 7.9 feet to: Tan, fine to medium SAND, moist.	6.5' 7' SAND and SILT SAND	2	
8–10					2.3 ppm		10'		
10–12	3	60/48	10-15		4.1 ppm 5.4 ppm	NO RECOVERY. Changing at 11.0 feet to: Tan, fine SAND, moist with slight discoloration. Changing at 12.0 feet to: Tan, fine SAND, moist with slight discoloration.	11' NO RECOVERY SAND		
13–15					5.3 ppm		15'		
15–19	4	60/54	15-20		3.5 ppm 4.6 ppm 4.6 ppm	NO RECOVERY. Changing at 15.5 feet to: Tan and brown, fine SAND and SILT, moist. Changing at 16.0 feet to: Tan, fine to medium SAND, moist with slight discoloration. Changing at 17.8 feet to: Brown and tan, fine to coarse SAND, little Gravel, trace Silt, moist. White rocked noted at 18.5 feet.	15.5' NO RECOVERY 16' SAND and SILT SAND	3	
20						Bottom of Borehole at 20.0 Feet	20'	4 5	
21–22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 6.0 to 8.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 18.0 to 20.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: WV-SB-26

BORING_WELL_6267781 WWW.WOLVEN AVENUE.GPJ GZA_CORP.GDT 11/30/18

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-27
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-17-18 / 9-17-18
Boring Location: 594,119.52 N, 12,795,969.14 E
GS Elev.: 878.65' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/26	0-5		3.4 ppm	Dark brown, TOPSOIL, moist. Changing 0.1 feet to: Light brown, SAND and SILT, moist. Changing at 1.0 foot to: Brown and orange tint, Clayey SILT, little fine Sand, dry. Changing at 2.1 feet to: NO RECOVERY.	TOPSOIL 1' SAND and SILT 2' 2.1' SILT NO RECOVERY	1	None
1									
2					1.4 ppm				
3									
4									
5	2	60/28	5-10			NO RECOVERY. Changing at 7.7 feet to: Brown, CLAY & SILT, dry. Changing at 7.8 feet to: Brown, fine to coarse SAND, little Gravel, little Silt, moist. Changing at 9.5 feet to: Brown, SAND and SILT, moist.			
6									
7					2.9 ppm		7.7' 7.8' CLAY & SILT SAND	2	
8									
9					1.2 ppm		9.5'		
10	3	60/48	10-15		1.3 ppm	NO RECOVERY. Changing at 11.0 feet to: Brown, Clayey SILT, little to some fine to coarse Sand, moist. Changing at 11.5 feet to: Brown, Clayey SILT, trace fine Sand, trace Gravel, moist. Changing at 12.7 feet to: Light brown, fine to coarse SAND, little Gravel, little Silt, dry. Changing at 14.0 feet to: Brown and tan, fine to medium SAND, little Gravel, trace Silt, dry.	10' SAND and SILT NO RECOVERY 11' SILT		
11									
12					1.1 ppm		12.7' SAND		
13								3	
14					1.4 ppm				
15	4	60/42	15-20		1.7 ppm	NO RECOVERY. Changing at 16.5 feet to: Brown, Clayey SILT, little fine to coarse Sand, moist. Changing at 17.2 feet to: White, fine SAND, some Silt, trace Gravel, dry. Changing at 18.0 feet to: Brown, fine to coarse SAND, little Gravel, little Silt, dry. Changing at 19.0 feet to: Brown, fine to coarse SAND, little Gravel, little Silt, moist. Changing at 19.8 feet to: Orange, fine to medium SAND and SILT, moist.	15' NO RECOVERY 16.5' Clayeye SILT 17.2' SAND and SILT		
16									
17					4.2 ppm				
18							19' SAND 19.8'		
19					4.3 ppm				
20						Bottom of Borehole at 20.0 Feet	20' SAND and SILT	4 5	
21									
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 7.0 to 9.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 13.0 to 15.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Engineers and Scientists

Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-28
Page: 1 of 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-14-18 / 9-14-18
Boring Location: 594,118.66 N, 12,796,029.14 E
GS Elev.: 881.26' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/44	0-5	-1.4 ppm	1.4 ppm	Dark brown, SAND and SILT, moist. Changing at 0.5 feet to: Light brown, fine SAND and SILT, moist. Changing at 1.0 feet to: Brown, orange, Clayeye SILT, little fine Sand, moist. Changing at 2.8 feet to: Light brown, SILT, little fine Sand, dry. Changing at 3.8 feet to: NO RECOVERY.	SAND and SILT	1 2	None
1							1'		
2				-2.7 ppm	2.7 ppm		Clayey SILT		
3							2.9'		
4							SILT		
5	2	60/60	5-10	-2.7 ppm	2.7 ppm	Brown, Silty CLAY, dry, trace Rock fragments, dry.	3.8'		
6							NO RECOVERY		
7				-4.2 ppm	4.2 ppm		5'		
8							Silty CLAY		
9				-2.8 ppm	2.8 ppm				
10	3	60/60	10-15	-3.3 ppm	3.3 ppm	Brown, Silty CLAY, dry.			
11									
12				-3.9 ppm	3.9 ppm				
13									
14									
15	4	60/60	15-20	-5.0 ppm	5.0 ppm	Brown, Silty CLAY, dry.		3	
16									
17				-2.7 ppm	2.7 ppm				
18									
19				-4.2 ppm	4.2 ppm				
20							20'		
20						Bottom of Borehole at 20.0 Feet		4 5	
21									
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 0.0 to 2.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 15.0 to 17.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Engineers and Scientists

Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-29
Page: 1 **of** 1
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Bob Miller
Logged by: Sheryl Stephenson
Date Start/Finish: 9-17-18 / 9-17-18
Boring Location: 594,069.73 N, 12,795,818.41 E
GS Elev.: 870.49' **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Direct Push	MacroCore
O.D. / I.D.:	NA	2.25"
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	60/36	0-5		2.2 ppm	Dark brown, TOPSOIL, moist. Changing at 0.1 feet to: Brown, SILT, moist. Changing at 0.6 feet to: Light brown, fine to medium SAND, some Silt, trace Gravel, moist. Changing at 2.3 feet to: Brown, SILT & CLAY, trace fine Sand, moist. Changing at 3.0 feet to: NO RECOVERY.	0.1' TOPSOIL; 0.6' SILT; SAND; 2.3' SILT & CLAY; 3' NO RECOVERY	1, 2	None
1									
2					3.8 ppm				
3									
4					4.3 ppm				
5	2	60/46	5-10			NO RECOVERY. Changing at 6.2 feet to: Brown, Silty CLAY, trace fine Sand, dry. Changing at 7.6 feet to: Orange and brown, SAND and SILT, trace Gravel, moist. Changing at 9.0 feet to: Light brown, Clayey SILT, trace fine Sand, moist. Changing at 9.5 feet to: Tan, fine to medium SAND, trace Silt, moist.	6.2' Silty CLAY; 7.6' SAND and SILT; 9' Clayey SILT; 9.5' SAND		
6									
7					0.2 ppm				
8									
9					2.7 ppm				
10	3	60/48	10-15		3.8 ppm	NO RECOVERY. changing at 11.0 feet to: Tan, fine SAND, trace Silt, moist. Changing at 12.0 feet to: Tan, fine SAND, little Silt, moist. Changing at 12.5 feet to: Tan, fine to coarse SAND, trace Gravel, moist. Changing at 13.0 feet to: Light brown, SILT, moist. Changing at 13.5 feet to: Tan, fine to medium SAND, moist. Changing at 14.0 feet to: Tan, fine to medium SAND, moist. Changing at 14.7 feet to: Tan, fine SAND, moist.	10' NO RECOVERY; 11' SAND; 13' SILT; 13.5' SAND; 15'		
11									
12					4.1 ppm				
13									
14					4.2 ppm				
15	4	60/48	15-20		2.2 ppm	NO RECOVERY. Changing at 16.0 feet to: Tan, fine to medium SAND, slightly discolored, moist. Changing at 19.4 feet to: Tan, fine SAND, moist.	16' NO RECOVERY; SAND; 20'	3	
16									
17					3.0 ppm				
18									
19					3.2 ppm				
20						Bottom of Borehole at 20.0 Feet		4, 5	
21									
22									

REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.2 ppm.
2. Soil sample was collected from approximately 0.0 to 2.0 feet below ground surface and submitted for analytical laboratory testing.
3. Soil sample was collected from approximately 15.0 to 17.0 feet below ground surface and submitted for analytical laboratory testing.
4. Groundwater was not encountered during drilling or upon completion.
5. Borehole was backfilled with drill cuttings upon completion.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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Engineers and Scientists

Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-7/MW-WV7D
Page: 1 of 6
File No.: 16.0062677.81
Check: Leslie Nelson

Contractor: Jobsite Services
Foreman: Jerry Zach/Travis
Logged by: John Morehouse
Date Start/Finish: 10-23-18 / 10-25-18
Boring Location:
GS Elev.: **Datum:** NAD 83

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	12.25" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	NA	140lbs
Hammer Fall:	NA	30.0"
TOC Elev.:	NA	NA

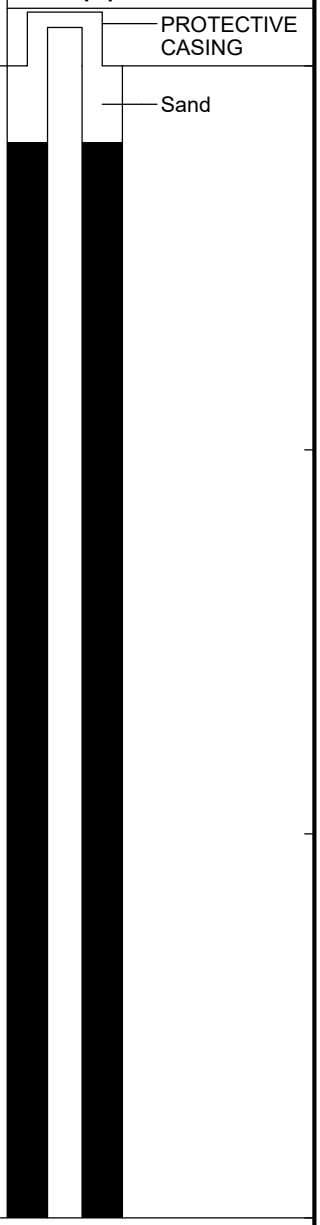
GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
NM	NM	NM	NM	NM

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks
1	1	24/20.4	0-2	2-2 2-2	ND	Very dark brown, fine grained SAND, some Silt, trace Gravel, moist. Changing at 0.4 feet to: Dark yellowish-brown to yellowish-brown, very fine grained SAND and SILT, moist. Changing at 1.7 feet to: NO RECOVERY.	SAND 0.4' SAND and SILT 1.7'	1
2	2	24/15.6	2-4	1-2 1-1	ND	Yellowish-brown, very fine grained SAND and SILT, moist. Changing at 3.3 feet to: NO RECOVERY.	2' NO RECOVERY SAND and SILT 3.3'	
3							NO RECOVERY 4'	
4	3	24/19.2	4-6	1-4 3-2	ND	Yellowish-brown to brown, CLAY & SILT, moist. Changing at 4.6 feet to: Yellowish-brown, fine to medium grained SAND, trace Silt, moist. Changing at 5.6 feet to: NO RECOVERY.	CLAY & SILT 4.6' SAND	
5							5.6'	
6	4	24/12	6-8	1-1 1-1	ND	Yellowish-brown, fine to coarse grained SAND, little Gravel, trace Silt, moist. Changing at 7.0 feet to: NO RECOVERY.	6' NO RECOVERY SAND 7'	
7							NO RECOVERY 8'	
8	5	24/6	8-10	1-1 1-1	ND	Yellowish-brown, fine to coarse grained SAND, little Gravel, trace Silt, moist. Changing at 8.5 feet to: NO RECOVERY.	SAND 8.5' NO RECOVERY	
9							10'	
10	6	24/12	10-12	1-1 2-2	ND	Yellowish-brown, fine to coarse grained SAND, little Gravel, trace Silt, moist. Changing at 10.6 feet to: Pale brown to light yellowish-brown, fine SAND, trace Silt, moist. Changing at 11.0 feet to: NO RECOVERY.	SAND 11'	
11							NO RECOVERY 12'	
12	7	24/16.8	12-14	2-3 3-3	ND	Pale brown to light yellowish-brown, fine SAND, trace Silt, moist. Changing at 12.7 feet to: Brown, fine to medium SAND, trace Silt, wet. Changing at 13.4 feet to: NO RECOVERY.	SAND 13.4'	2
13							NO RECOVERY 14'	
14	8	24/15.6	14-16	3-2 3-4	ND	Brown, fine to medium SAND, trace Silt, wet. Changing at 15.3 feet to: NO RECOVERY.	SAND	

Equipment Installed



REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 3000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million by volume (ppmv) of isobutylene. ND indicates nothing detected (<0.1 ppmv).
2. Groundwater was encountered at approximately 12.7 feet below ground surface.

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Wolverine World Wide
Wolven Avenue Area
Algoma Twp, Kent County, Michigan

Boring No.: WV-SB-7/MW-WV7D
Page: 2 **of** 6
File No.: 16.0062677.81
Check: Leslie Nelson

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
							15.3' SAND		
16	9	24/16.8	16-18	2-2 3-4	ND	Brown, fine to medium SAND, trace Silt, wet. Changing at 17.4 feet to: NO RECOVERY.	NO RECOVERY 16' SAND		
17							17.4' NO RECOVERY		
18	10	24/19.2	18-20	0-2 3-6	ND	Brown, fine to medium SAND, trace Silt, wet. Changing at 19.6 feet to: NO RECOVERY.	18' SAND		
19							19.6'		
20	11	24/16.8	20-22	5-6 5-11	ND	Brown, fine to medium SAND, trace Silt, wet. Changing at 21.4 feet to: NO RECOVERY.	20' NO RECOVERY SAND		
21							21.4'		
22	12	24/19.2	22-24	8-12 13-11	ND	Brown, fine to medium SAND, trace Silt, trace Gravel, wet. Changing at 23.6 feet to: NO RECOVERY.	NO RECOVERY 22' SAND		
23							23.6'		
24	13	24/15.6	24-26	1-1 1-1	ND	Brown, fine to medium SAND, trace Silt, trace Gravel, wet. Changing at 25.3 feet to: NO RECOVERY.	24' NO RECOVERY SAND		
25							25.3'		
26	14	24/14.4	26-28	1-1 2-0	ND	Brown, fine to medium SAND, trace Silt, trace Gravel, wet. Changing at 27.2 feet to: NO RECOVERY.	NO RECOVERY 26' SAND		
27							27.2' NO RECOVERY		
28	15	24/21.6	28-30	1-1 1-2	ND	Brown, fine to medium SAND, trace Silt, trace Gravel, wet. Changing at 29.8 feet to: NO RECOVERY.	28' SAND		
29							29.8'		
30	16	24/16.8	30-32	0-0 1-1	ND	Brown, fine to medium SAND, trace Silt, trace Gravel, wet. Changing at 31.4 feet to: NO RECOVERY.	30' NO RECOVERY SAND		
31							31.4'		
32	17	24/20.4	32-34	0-1 3-4	ND	Brown, fine to medium SAND, trace Silt,	NO RECOVERY 32' SAND		

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Boring No.: WV-SB-7/MW-WV7D
Page: 3 **of** 6
File No.: 16.0062677.81
Check: Leslie Nelson

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
33						trace Gravel, wet. Changing at 33.7 feet to: NO RECOVERY.	SAND		
							33.7'		
34	18	24/22.8	34-36	1-2 4-5	ND	Brown, fine to medium SAND, trace Silt, trace Gravel, wet. Changing at 35.9 feet to: NO RECOVERY.	34' NO RECOVERY SAND		
35							35.9'		
36	19	24/10.8	36-38	1-2 1-4	ND	Brown, fine to medium SAND, trace Silt, trace Gravel, wet. Changing at 36.9 feet to: NO RECOVERY.	36' NO RECOVERY SAND		
37							36.9' NO RECOVERY		
38	20	24/12	38-40	1-0 4-4	ND	Brown, fine to medium SAND, trace Silt, trace Gravel, wet. Changing at 38.9 feet to: Brown, GRAVEL, some fine to coarse grained Sand, trace Silt, wet. Changing at 38.9 feet to: NO RECOVERY.	38' SAND		
39							38.9' 39' GRAVEL NO RECOVERY		
40	21	24/15.6	40-42	1-1 1-2	ND	Brown, fine to medium SAND, trace Silt, trace Gravel, wet. Changing at 41.3 feet to: NO RECOVERY.	40' SAND		
41							41.3' NO RECOVERY		
42	22	24/15.6	42-44	1-1 1-1	ND	Brown, fine to medium SAND, trace Silt, trace Gravel, wet. Changing at 43.3 feet to: NO RECOVERY.	42' SAND		
43							43.3' NO RECOVERY		Bentonite Grout
44	23	24/6	44-46	1-1 1-1	ND	Brown, fine to medium SAND, trace Silt, wet. Changing at 44.3 feet to: Brown, fine to medium SAND, little coarse grained Sand, little Gravel, trace Silt, wet. Changing at 44.5 feet to: NO RECOVERY.	44' SAND 44.5'		
45							NO RECOVERY		
46	24	24/9.6	46-48	1-1 3-5	ND	Brown, fine to medium SAND, little coarse grained Sand, little Gravel, trace Silt, wet. Changing at 46.6 feet to: Brown, GRAVEL and fine to coarse grained Sand, trace Silt, wet. Changing at 46.8 feet to: NO RECOVERY.	46' SAND 46.6'		
47							46.8' GRAVEL NO RECOVERY		
48	25	24/10.8	48-50	2-3 4-7	ND	Brown, fine to medium SAND, trace coarse grained Sand, trace Gravel, trace Silt, wet. Changing at 48.9 feet to: NO RECOVERY.	48' SAND		
49							48.9' NO RECOVERY		
							50'		

REMARKS

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Boring No.: WV-SB-7/MW-WV7D
Page: 4 **of** 6
File No.: 16.0062677.81
Check: Leslie Nelson

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
51	26	24/15.6	50-52	1-1 2-2	ND	Brown, fine to medium grained SAND, trace coarse grained Sand, trace Gravel, trace Silt, wet; with thin lenses of yellowish-brown, Silty Clay, moist. Changing at 51.3 feet to: NO RECOVERY.	SAND 51.3' NO RECOVERY 52'		
52 53	27	24/15.6	52-54	0-0 2-9	ND	Brown, fine to medium grained SAND, trace coarse grained Sand, trace Gravel, trace Silt, wet. Changing at 53.2 feet to: Brown, GRAVEL and fine to coarse grained Sand, trace Silt, wet. Changing at 53.3 feet to: No RECOVERY.	SAND 53.2' 53.3' GRAVEL NO RECOVERY 54'		
54 55	28	24/10.8	54-56	1-1 2-3	ND	Brown, fine to medium grained SAND, trace coarse grained Sand, trace Silt, wet. Changing at 54.9 feet to: NO RECOVERY.	SAND 54.9' NO RECOVERY 56'		
56 57	29	24/4.8	56-58	1-0 2-4	ND	Brown, fine to medium grained SAND, trace coarse grained Sand, trace Gravel, trace Silt, wet. Changing at 56.3 feet to: Brown, GRAVEL, trace Silt, wet. Changing at 56.4 feet to: NO RECOVERY.	56.3' SAND 56.4' GRAVEL NO RECOVERY 58'		
58 59	30	24/13.2	58-60	1-2 2-3	ND	Brown, fine to medium grained SAND, trace coarse grained Sand, trace Gravel, trace Silt, wet. Changing at 59.1 feet to: NO RECOVERY.	SAND 59.1' NO RECOVERY 60'		
60 61	31	24/9.6	60-62	1-2 6-11	ND	Brown, fine to medium grained SAND, trace coarse grained Sand, trace Gravel, trace Silt, wet. Changing at 60.8 feet to: NO RECOVERY.	SAND 60.8' NO RECOVERY 62'		
62 63	32	24/18	62-64	1-4 7-11	ND	Brown, fine to medium grained SAND, trace coarse grained Sand, trace Gravel, trace Silt, wet. Changing at 63.5 feet to: NO RECOVERY.	SAND 63.5' NO RECOVERY 64'		
64 65	33	24/13.2	64-66	1-2 3-6	ND	Brown, fine to medium grained SAND, trace coarse grained Sand, trace Gravel, trace Silt, wet. Changing at 65.1 feet to: NO RECOVERY.	SAND 65.1' NO RECOVERY 66'		
66 67	34	24/16.8	66-68	2-3 5-8	ND	Brown, fine to medium grained SAND, trace coarse grained Sand, trace Gravel, trace Silt, wet. Changing at 67.4 feet to: NO RECOVERY.	SAND 67.4'		

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Wolven Avenue Area
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Boring No.: WV-SB-7/MW-WV7D
Page: 5 **of** 6
File No.: 16.0062677.81
Check: Leslie Nelson

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
68	35	24/21.6	68-70	1-1 2-3	ND	Brown, fine to medium grained SAND, trace coarse grained Sand, trace Gravel, trace Silt, wet. Changing at 69.8 feet to: NO RECOVERY.	68' NO RECOVERY SAND		
69							69.8'		
70	36	24/21.6	70-72	1-2 2-4	ND	Brown, fine to medium grained SAND, trace coarse grained Sand, trace Gravel, trace Silt, wet. Changing at 71.8 feet to: NO RECOVERY.	70' NO RECOVERY SAND		
71							71.8'		
72	37	24/12	72-74	1-0 0-1	ND	Brown, fine to medium grained SAND, trace coarse grained Sand, trace Gravel, trace Silt, wet. Changing at 73.0 feet to: NO RECOVERY.	72' NO RECOVERY SAND		
73							73' NO RECOVERY		
74	38	24/15.6	74-76	2-3 4-9	ND	Brown, fine to medium grained SAND, trace coarse grained Sand, trace Gravel, trace Silt, wet. Changing at 75.3 feet to: NO RECOVERY.	74' SAND		
75							75.3' NO RECOVERY		
76	39	24/19.2	76-78	1-2 5-6	ND	Brown, fine to medium grained SAND, trace coarse grained Sand, trace Gravel, trace Silt, wet. Changing at 77.2 feet to: Brown, fine to coarse grained SAND, some Gravel, trace Silt, wet. Changing at 77.6 feet to: NO RECOVERY.	76' SAND		
77							77.6'		
78	40	24/12	78-80	2-1 4-5	ND	Brown, fine to coarse grained SAND, some Gravel, trace Silt, wet. Changing at 79.0 feet to: NO RECOVERY.	78' NO RECOVERY SAND		
79							79' NO RECOVERY		
80	41	24/24	80-82	2-3 5-18	ND	Brown, fine to medium grained SAND, some Gravel, trace Silt, wet.	80' SAND		
81									
82	42	24/10.8	82-84	7-11 15-27	ND	Brown, GRAVEL, some fine to coarse grained SAND, wet. Changing at 82.9 feet to: NO RECOVERY.	82' GRAVEL		
83							82.9' NO RECOVERY		
84	43	24/19.2	84-86	23-27 35-25	ND	Yellowish-brown, GRAVEL, some Silty Sand, wet. Changing at 85.5 feet to: Yellowish-brown, GRAVEL, trace Silt, wet.	84' GRAVEL		

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Boring No.: WV-SB-7/MW-WV7D
Page: 6 **of** 6
File No.: 16.0062677.81
Check: Leslie Nelson

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86	44	24/8.4	86-88	6-8 19-29	ND	Changing at 85.6 feet to: NO RECOVERY. Brown, fine to coarse grained SAND, some Gravel, trace Silt, wet. Changing at 86.7 feet to: NO RECOVERY.	GRAVEL 85.6' NO RECOVERY 86' SAND 86.7' NO RECOVERY		
87									
88	45	24/24	88-90	3-4 10-17	ND	Brown, fine to coarse grained SAND, some Gravel, trace Silt, wet. Changing at 88.8 feet to: Yellowish-brown, GRAVEL, trace Silt, wet.	88' SAND 88.8' GRAVEL		
89									
90	46	24/7.2	90-92	14-35 40-50/5"	ND	Yellowish-brown, GRAVEL and fine to coarse grained SAND, little Silt, moist to wet. Changing at 90.6 feet to: NO RECOVERY.	90.6' NO RECOVERY		Filter Sand
91									
92	47	24/14.4	92-94	4-8 12-10	ND	Yellowish-brown, GRAVEL and fine to coarse grained SAND, little Silt, moist to wet. Changing at 93.0 feet to: Very dark grayish-brown, Silty CLAY, moist. Changing at 93.2 feet to: NO RECOVERY.	92' GRAVEL 93' 93.2' CLAY NO RECOVERY		2-Inch PVC Well Screen
93									
94	48	24/24	94-96	17-24 26-50	ND	Very dark grayish-brown, Silty CLAY, moist.	94' Silty CLAY		
95									
96						Bottom of Borehole at 96.0 Feet	96'	3	
97									
98									
99									
100									
101									
102									

REMARKS

3. Monitoring well was installed in borehole upon completion. Well screen set from 90.2 to 95.0 feet below ground surface.

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