



Rose & Westra
A Division of GZA



GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION
MANAGEMENT

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MEMORANDUM

To: Abby Hendershott, EGLE

From: Lori Powers, Rose & Westra, a Division of GZA GeoEnvironmental, Inc.

Date: December 2, 2019

File No.: 16.0062335.52 / 16.0062335.53

Re: Wolverine World Wide, Inc. (Wolverine) – House Street Disposal Area
Monthly Progress Report

This EGLE Monthly Progress Report (MPR) is being submitted on behalf of Wolverine. This EGLE MPR is completed as agreed upon in Mr. John Byl's July 9, 2018 letter entitled *Response to May 29 Correspondence regarding Tannery Meeting Summary and Action Items*.

This progress report also includes information to supplement the November 11, 2019 U.S. EPA MPR (attached).

SITE INVESTIGATION ACTIONS

Continued effort for access to off-site drilling locations. Boring logs for locations PMW-12, PMW-24, and PMW-29 are included with this update.

Access was gained to drill at location PMW-13. Drilling will likely start in December.

Fence installation was completed.

SITE ANALYTICAL DATA RECEIVED

PFAS data received since the last update is summarized on the attached table. This is limited to vertical aquifer profiling data from location PMW-29.

SITE MAPPING

A revised RI map is underway. Additional surveying of recently installed well locations was completed the week of November 25, 2019.

SITE ANTICIPATED ACTIONS AND SCHEDULE FOR NEXT REPORTING PERIOD

R&W/GZA will continue to make efforts to gain access to locations PMW-22 and PMW-16 for possible additional well installation.

Continue to implement TCRA actions at the Tannery and House Street sites. Capping of the five chrome TCLP areas will likely commence December 9.



OFF-SITE SUMMARY

On November 22, draft scopes of work for parcels on the south side of House Street were submitted to EGLE, EPA, MDOT, and the property owners and their counsel for review and approval prior to implementing any removal actions. R&W/GZA is also working on approval for waste disposal. Revised waste profiles and approval are underway.

R&W/GZA and Wolverine are evaluating possible actions at the Imperial Pine Parcel (7900 Imperial Pine Drive NE). As you know, R&W/GZA met with EGLE and EPA at this site to discuss next steps including possible erosion control measures. R&W/GZA met with the property owner on November 25 to discuss and review next steps. Erosion control will be placed the week of December 2.

J:\62000\623xx\62335.52 - House St Pre-Inv\MDEQ Updates\November 2019 Update\WWW-House Street-MDEQMonthlyUpdate-1222019-F.docx

TABLE 1
SUMMARY OF VERTICAL AQUIFER PROFILING GROUNDWATER SAMPLE ANALYSIS - PFAS
1855 House Street NE
Plainfield Twp, Kent Co, MI

Sample Location	Part 201 Generic Residential Groundwater Cleanup Criteria – Drinking Water ²	Part 201 Generic Groundwater Cleanup Criteria – Groundwater Surface Water Interface ²	Part 201 Generic Residential Groundwater Cleanup Criteria – Groundwater Volatilization to Indoor Air Inhalation ²	U.S. EPA Residential Tap Water Regional Removal Management Levels ³	HS-PMW-29	HS-PMW-29	HS-PMW-29	HS-PMW-29	HS-PMW-29
					HS-GW-MW29 (11-15)	HS-GW-MW29 (21-25)	HS-GW-MW29 (31-35)	HS-GW-MW29 (41-45)	HS-GW-MW29 (46-50)
Sample Name					11 - 15	21 - 25	31 - 35	41 - 45	46 - 50
Depth Interval (feet below ground surface)					UJ08016-001	UJ08016-002	UJ08016-003	UJ08016-004	UJ08016-005
Laboratory Sample ID(s)					10/01/2019	10/01/2019	10/01/2019	10/01/2019	10/02/2019
Sample Date									
Parameter (µg/L)									
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NCL	NCL	NCL	NCL	<0.0036	<0.0035	<0.0035	<0.0036	<0.0036
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NCL	NCL	NCL	NCL	<0.0036	<0.0035	<0.0035	<0.0036	<0.0036
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NCL	NCL	NCL	NCL	<0.0036	<0.0035	<0.0035	<0.0036	<0.0036
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NCL	NCL	NCL	NCL	<0.0071	<0.007	<0.007	<0.0071	<0.0073
Perfluorobutane sulfonic acid (PFBS)	NCL	NCL	NCL	1,200	0.015	<0.0035	<0.0035	<0.0036	<0.0036
Perfluorodecane sulfonic acid (PFDS)	NCL	NCL	NCL	NCL	<0.0036	<0.0035	<0.0035	<0.0036	<0.0036
Perfluoroheptane sulfonic acid (PFHpS)	NCL	NCL	NCL	NCL	<0.0036	<0.0035	<0.0035	<0.0036	<0.0036
Perfluoro-1-nonanesulfonate (PFNS)	NCL	NCL	NCL	NCL	<0.0071	<0.007	<0.007	<0.0071	<0.0073
Perfluorooctane sulfonamide (FOSA)	NCL	NCL	NCL	NCL	<0.0036	<0.0035	<0.0035	<0.0036	<0.0036
Perfluoro-1-pentanesulfonate (PFPeS)	NCL	NCL	NCL	NCL	<0.0036	<0.0035	<0.0035	<0.0036	<0.0036
Perfluorohexane sulfonic acid (PFHxS)	NCL	NCL	NCL	NCL	0.017	<0.0035	<0.0035	<0.0036	<0.0036
Perfluorobutanoic acid (PFBA)	NCL	NCL	NCL	NCL	<0.0036	<0.0035	<0.0035	<0.0036	<0.0036
Perfluorodecanoic acid (PFDA)	NCL	NCL	NCL	NCL	<0.0036	<0.0035	<0.0035	<0.0036	<0.0036
Perfluorododecanoic acid (PFDoDA)	NCL	NCL	NCL	NCL	<0.0036	<0.0035	<0.0035	<0.0036	<0.0036
Perfluoroheptanoic acid (PFHpA)	NCL	NCL	NCL	NCL	<0.0036	<0.0035	<0.0035	<0.0036	<0.0036
Perfluorohexanoic acid (PFHxA)	NCL	NCL	NCL	NCL	<0.0036	<0.0035	<0.0035	<0.0036	<0.0036
Perfluorononanoic acid (PFNA)	NCL	NCL	NCL	NCL	<0.0036	<0.0035	<0.0035	<0.0036	<0.0036
Perfluorooctanoic acid (PFOA)	0.07 (JJ)	12	ID	NCL	0.0091	<0.0017	<0.0018	<0.0018	<0.0018
Perfluorooctane sulfonic acid (PFOS)	0.07 (JJ)	0.012	NLV	NCL	0.053	<0.0035	<0.0035	<0.0036	<0.0036
PFOA + PFOS (Calculated)	0.07	NCL	NCL	NCL	0.062	ND	ND	ND	ND
Perfluoropentanoic acid (PFPeA)	NCL	NCL	NCL	NCL	<0.0036	<0.0035	<0.0035	<0.0036	<0.0036
Perfluorotetradecanoic acid (PFTeDA)	NCL	NCL	NCL	NCL	<0.0036	<0.0035	<0.0035	<0.0036	<0.0036
Perfluorotridecanoic acid (PFTrDA)	NCL	NCL	NCL	NCL	<0.0036	<0.0035	<0.0035	<0.0036	<0.0036
Perfluoroundecanoic acid (PFUnDA)	NCL	NCL	NCL	NCL	<0.0036	<0.0035	<0.0035	<0.0036	<0.0036
Total PFAS (Calculated)	NCL	NCL	NCL	NCL	0.094	ND	ND	ND	ND

NOTES:

1. Concentration and criteria units are micrograms per Liter ($\mu\text{g/L}$) or parts per billion (ppb). Calculated criteria and concentrations are rounded to two significant digits. "ND" indicates the parameters used in the calculation were not detected.
2. Michigan Part 201 Groundwater Cleanup Criteria are based on "Table 1, Groundwater: Residential and Nonresidential 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 299.44 and 299.49, effective December 30, 2013; updated June 25, 2018.
Abbreviations Include:
"ID" indicates insufficient data to develop criterion.
"NCL" indicates no criterion listed in EGLE Table 1.
"NLV" indicates the substance is not likely to volatilize under most conditions.
Footnotes Include:
(JJ) - Compliance with the drinking water criteria shall require comparing the sum of the PFOA and PFOS groundwater concentrations to the drinking water criterion of 0.07 $\mu\text{g/L}$.
3. U.S. EPA Residential Tap Water Regional Removal Management Levels (RMLs) were based on "Generic RML Tables," updated November 2018.
4. Bold, italic number with thick line border or italic parameter name indicates that parameter was detected above the Michigan Part 201 Groundwater Cleanup Criteria. U.S. EPA RMLs are provided for reference only and results detected above the EPA RMLs are not bolded or italicized. The perched groundwater is not likely representative of aquifer conditions at the Site and the RMLs are based on tap water.
5. Abbreviations include:
"< RL" indicates the parameter was analyzed for but not detected above the method detection limit; RL = Reporting Limit.
6. Depth interval presented for VAP temporary wells is the top of the screen interval to the bottom of the screen interval in feet below ground surface.



GZA
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Wolverine World Wide, Inc.

House Street

Belmont, Michigan

Boring No.: HS-MW-12A

Page: 1 of 1

File No.: 16.0062335.52

Check: JTM/JMG

Contractor: Stearns Drilling Company

Foreman: Jerry Huntoon

Logged by: J. Markosky

Date Start/Finish:

Boring Location:

GS Elev.: Datum:

**Auger/
Casing**

Sampler

GROUNDWATER READINGS

Type: Hollow Stem Auger Split Spoon

O.D. / I.D.: 8.0" / 4.25" 2.0" / 1 3/8"

Hammer Wt.: 140lbs NA

Hammer Fall: 30" NA

TOC Elev.: NA NA

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data				PROTECTIVE CASING	
1						See HS-MW-12D for detailed soil descriptions.		1	<p>PROTECTIVE CASING</p> <p>Bentonite/Grout</p> <p>Silica Sand Filter Pack Top of Well Screen</p> <p>2-Inch Dia. 5-Foot PVC Screen (0.010" Slot)</p> <p>Bottom of Well Screen</p>	
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20					Bottom of Borehole at 20.0 Feet					
21										
22										
23										
24										

REMARKS

1. Monitoring well HS-MW-12A was installed in borehole upon completion. Well screen set from approximately 15.0 to 20.0 feet below ground surface.

BORING WELL 62355.52 HOUSE STREET COMPLETE.GPJ GZA CORP.GDT 11/25/19



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House Street

Belmont, Michigan

Boring No.: HS-MW-12B

Page: 1 of 2

File No.: 16.0062335.52

Check: JTM/JMG

Contractor: Stearns Drilling Company

Foreman: Jerry Huntoon

Logged by: J. Markosky

Date Start/Finish:

Boring Location:

GS Elev.: Datum:

**Auger/
Casing**

Sampler

GROUNDWATER READINGS

Type: Hollow Stem Auger Split Spoon

O.D. / I.D.: 8.0" / 4.25" 2.0" / 1 3/8"

Hammer Wt.: 140lbs NA

Hammer Fall: 30" NA

TOC Elev.: NA NA

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data					PROTECTIVE CASING
1						See HS-MW-12D for detailed soil descriptions.				
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
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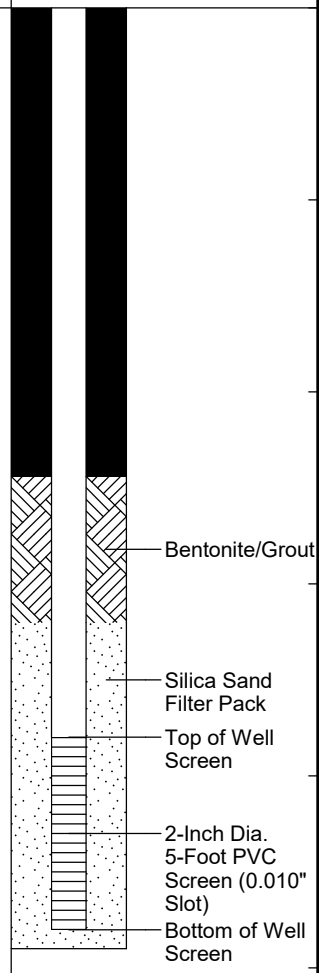
Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: HS-MW-12B

BORING WELL 62355.52 HOUSE STREET COMPLETE.GPJ GZA CORP.GDT 11/25/19



Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data					
31										
32										
33										
34										
35										
36										
37										
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41										
42										
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48										
49										
50										
51										
52										
53										
54										
55						Bottom of Borehole at 54.5 Feet		1		
56										
57										
58										
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61										
62										
63										
64										



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1. Monitoring well HS-MW-12B was installed in borehole upon completion. Well screen set from approximately 49.0 to 54.0 feet below ground surface.

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 WELL: 62355.52 HOUSE STREET COMPLETE.GPJ GZA_CORP.GDT 11/25/19



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House Street

Belmont, Michigan

Boring No.: HS-MW-12C

Page: 1 of 4

File No.: 16.0062335.52

Check: JTM/JMG

Contractor: Stearns Drilling Company

Foreman: Jerry Huntoon

Logged by: J. Markosky

Date Start/Finish:

Boring Location:

GS Elev.: Datum:

**Auger/
Casing**

Sampler

GROUNDWATER READINGS

Type: Hollow Stem Auger Split Spoon

O.D. / I.D.: 8.0" / 4.25" 2.0" / 1 3/8"

Hammer Wt.: 140lbs NA

Hammer Fall: 30" NA

TOC Elev.: NA NA

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data					PROTECTIVE CASING
1						See HS-MW-12D for detailed soil descriptions.				
2										
3										
4										
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29										

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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.: HS-MW-12C

BORING WELL 62355.52 HOUSE STREET COMPLETE.GPJ GZA CORP.GDT 11/25/19



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House Street

Belmont, Michigan

Boring No.: HS-MW-12C

Page: 2 of 4

File No.: 16.0062335.52

Check: JTM/JMG

Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed		
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data						
31											
32											
33											
34											
35											
36											
37											
38											
39											
40											
41											
42											
43											
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63											
64											
REMARKS											

BORING WELL: 62355.52 HOUSE STREET COMPLETE.GPJ GZA CORP.GDT 11/25/19

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.: HS-MW-12C



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House Street

Belmont, Michigan

Boring No.: HS-MW-12C

Page: 3 of 4

File No.: 16.0062335.52

Check: JTM/JMG

Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed		
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data						
66											
67											
68											
69											
70											
71											
72											
73											
74											
75											
76											
77											
78											
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99											
R E M A R K S											

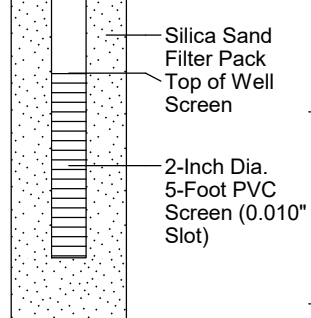
BORING WELL: 62355.52 HOUSE STREET COMPLETE.GPJ GZA_CORP.GDT 11/25/19

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.: HS-MW-12C



Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data					
101										
102										
103										
104										
105										
106										
107										
108										
109										
110										
111										
112										
113										
114										
115										
116										
117										
118										
119										
120										
121										
122										
123										
124										
125										
126										
127										
128										
129										
130										
131						Bottom of Borehole at 130.4 Feet		1		
132										
133										
134										



**R
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1. Monitoring well HS-MW-12C was installed in borehole upon completion. Well screen set from approximately 124.0 to 128.8 feet below ground surface.

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 WELL: 62355.52 HOUSE STREET COMPLETE.GPJ GZA CORP.GDT 11/25/19



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Wolverine World Wide, Inc.

House Street

Belmont, Michigan

Boring No.: HS-MW-12D

Page: 1 of 6

File No.: 16.0062335.52

Check: JTM/JMG

Contractor: Stearns Drilling Company

Foreman: Jerry Huntoon

Logged by: J. Markosky

Date Start/Finish: 9-3-19 / 9-20-19

Boring Location:

GS Elev.: Datum:

Auger/
Casing

Sampler

GROUNDWATER READINGS

Type: Hollow Stem Auger Split Spoon

O.D. / I.D.: 8.0" / 4.25" 2.0" / 1 3/8"

Hammer Wt.: 140lbs NA

Hammer Fall: 30" NA

TOC Elev.: NA NA

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (6")	Test Data					PROTECTIVE CASING
1	1	24/12	0-2	1-1 3-3	0.0 ppm	Black, TOPSOIL. Changing at 0.5 feet to: Loose, light brown, fine SAND, some Silt, dry.	0.5' TOPSOIL SAND	1		
2	2	24/8	2-4	2-3 2-3	0.0 ppm	Loose, light brown, fine to medium SAND, little Silt, dry.				
3										
4	3	24/14	4-6	3-4 4-5	0.0 ppm	Loose, light brown, fine to medium SAND, little Silt, dry.				
5										
6	4	24/16	6-8	2-3 3-3	0.0 ppm	Loose, light brown, fine to medium SAND, little Silt, moist.				
7										
8	5	24/18	8-10	1-2 2-2	0.0 ppm	Loose, brown, fine to medium SAND, little Silt, damp.				
9										
10	6	24/22	10-12	1-3 4-5	0.0 ppm	Loose, brown, fine to medium SAND, little Silt, wet.				
11										
12	7	24/14	12-14	2-2 1-2	0.0 ppm	Loose, brown, fine to medium SAND, some Silt, wet.				
13										
14	8	24/11	14-16	WOH-1 5-8	0.0 ppm	Loose, brown, fine to medium SAND, little Silt, wet.		2		
15								3		
16	9	24/16	16-18	4-5 8-9	0.0 ppm	Loose, brown, fine to medium SAND, little Silt, wet.				
17										
18	10	24/24	18-20	1-4 9-10	0.0 ppm	Loose, brown, fine to medium SAND, little Silt, wet.				
19										
20	11	24/23	20-22	3-4 7-11	0.0 ppm	Loose, brown, fine to medium SAND, little Silt, wet.				
21										
22	12	24/20	22-24	3-6 9-12	0.0 ppm	Medium dense, brown, fine to medium SAND, little Silt, trace Gravel, wet.				
23										
24	13	24/20	24-26	4-6 10-9	0.0 ppm	Medium dense, brown, fine to medium SAND, little Silt, trace Gravel, wet.		4		
25										
26	14	24/23	26-28	1-2 2-3	0.0 ppm	Loose, brown, fine to medium SAND, little Silt, trace Gravel, wet.				
27										
28	15	24/24	28-30	1-3 3-5	0.0 ppm	Loose, brown, fine to medium SAND, some Silt, wet.				
29										

REMARKS

- Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings are shown in parts per million (ppm) of isobutylene. Background was measured at 0.0 ppm.
- Groundwater was encountered at approximately 14.0 feet below ground surface.
- Temporary well set at 15.0 to 20.0 feet below ground surface. Purged 55.0 gallons. Groundwater sample submitted for laboratory analysis.
- Temporary well set at 25.0 to 30.0 feet below ground surface. Purged 50.0 gallons. Groundwater sample submitted for laboratory analysis.

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.: HS-MW-12D

BORING WELL: 62355.52 HOUSE STREET COMPLETE.GPJ GZA CORP.GDT 11/25/19



Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed			
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (6")	Test Data							
31	16	24/24	30-32	1-3 3-5	0.0 ppm	Loose, brown, fine to medium SAND, some Silt, wet.	SAND	5				
32	17	24/20	32-34	2-5 5-6	0.0 ppm	Loose, brown, fine to medium SAND, some Silt, wet.						
34	18	24/18	34-36	1-2 3-5	0.0 ppm	Loose, brown, fine to medium SAND, some Silt, wet.						
36	19	24/9	36-38	3-8 12-14	0.0 ppm	Medium dense, brown, fine to medium SAND, some Silt, wet.						
38	20	24/20	38-40	2-4 5-10	0.0 ppm	Loose, brown and gray, fine to medium SAND, some Silt, wet.						
40	21	24/24	40-42	1-3 5-6	0.0 ppm	Loose, brown and gray, fine to medium SAND, some Silt, wet. Changing at 41.6 feet to: Gray, Silty CLAY, some fine Sand, wet.	41.8' Silty CLAY	6				
42	22	24/24	42-44	4-8 10-13	0.0 ppm	Gray, Silty CLAY, some fine to medium Sand, dry.	44' SILT & CLAY					
44	23	24/24	44-46	3-11 11-13	0.0 ppm	Very stiff, gray, SILT & CLAY, little fine Sand, wet.	46' SAND					
46	24	24/2	46-48	1-1 1-2	0.0 ppm	Very loose, brown and gray, fine to medium SAND, little Silt, wet.		7				
48	25	24/20	48-50	2-5 8-12	0.0 ppm	Medium dense, brown, fine to medium SAND, trace Silt, wet. Changing at 49.0 feet to: Medium dense, brown, fine to medium SAND, trace Silt with layers of interbedded Silty Clay, wet.						
50	26	24/14	50-52	1-7 11-14	0.0 ppm	Medium dense, brown, fine to medium SAND, little Silt with interbedded Silty Clay, wet.						
52	27	24/0	52-54	9-30 43-29	0.0 ppm	NO RECOVERY.						
54	28	24/24	54-56	4-9 11-12	0.0 ppm	Medium dense, brown, fine to medium SAND, little Silt, wet. Changing at 54.5 feet to: Gray, Silty CLAY, trace fine Sand, dry.	54.5' Silty CLAY					
56	29	24/24	56-58	8-13 13-15	0.0 ppm	Very stiff, gray, Silty CLAY, little fine Sand, dry.						
58	30	24/24	58-60	4-8 10-10	0.0 ppm	Very stiff, gray, Silty CLAY, little fine Sand, dry.						
60	31	24/24	60-62	6-8 9-11	0.0 ppm	Very stiff, gray, Silty CLAY, little fine Sand, dry.						
62	32	24/24	62-64	4-10 10-11	0.0 ppm	Very stiff, gray, Silty CLAY, little fine Sand, dry.						
64	33	24/24	64-66	6-11 15-16	0.0 ppm	Very stiff, gray, Silty CLAY, little fine Sand,						

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5. Temporary well set at 35.0 to 40.0 feet below ground surface. Purged 70.0 gallons. Groundwater sample submitted for laboratory analysis.
6. 10.0 inch casing set to 42.6 feet below ground surface.
7. Temporary well set at 49.0 to 54.0 feet below ground surface. Purged 75.0 gallons. Groundwater sample submitted for laboratory analysis.

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.



Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed					
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (6")	Test Data									
66	34	24/24	66-68	3-9 10-10	0.0 ppm	dry. Very stiff, gray, Silty CLAY, trace fine Sand, dry.	Silty CLAY							
67														
68	35	24/24	68-70	6-6 9-11	0.0 ppm	Very stiff, gray, Silty CLAY, trace fine Sand, dry.								
69														
70	36	24/24	70-72	2-2 2-5	0.0 ppm	Very stiff, gray, Silty CLAY, trace fine Sand, dry. Changing at 71.0 feet to: Gray, fine SAND, some Silt, wet.	71' SAND							
71														
72	37	24/16	72-74	1-1 2-2	0.0 ppm	Very loose, gray and brown, fine to medium SAND, some Silt, wet.								
73														
74	38	24/20	74-76	3-3 7-11	0.0 ppm	Loose, gray and brown, fine SAND, some Silt, wet.								
75														
76	39	24/24	76-78	2-3 5-7	0.0 ppm	Loose, gray and brown, fine SAND, some Silt, wet.								
77														
78	40	24/13	78-80	1-1 4-5	0.0 ppm	Loose, gray and brown, fine SAND, some Silt, wet.								
79														
80	41	24/24	80-82	1-1 3-5	0.0 ppm	Loose, gray and brown, fine SAND, some Silt, wet.								
81														
82	42	24/18	82-84	1-3 8-11	0.0 ppm	Medium dense, gray and brown, fine to medium SAND, some Silt, wet. Changing at 83.3 feet to: Gray and brown, fine to medium SAND, some Silt, little Gravel, wet.								
83														
84	43	24/20	84-86	2-5 6-7	0.0 ppm	Medium dense, brown, fine to coarse SAND, some Gravel, trace Silt, wet.								
85														
86	44	24/24	86-88	2-4 12-20	0.0 ppm	Medium dense, brown, fine to coarse SAND, some Gravel, trace Silt, wet.								
87														
88	45	24/17	88-90	3-5 9-13	0.0 ppm	Medium dense, brown, fine to coarse SAND, little Gravel, little Silt, wet.								
89														
90	46	24/92	90-92	1-4 7-14	0.0 ppm	Medium dense, brown, fine to coarse SAND, little Gravel, little Silt, wet.								
91														
92	47	24/7	92-94	1-1 2-8	0.0 ppm	Very loose, brown, fine to coarse SAND, little Gravel, little Silt, wet.								
93														
94	48	24/11	94-96	3-10 14-22	0.0 ppm	Medium dense, brown, fine to coarse SAND, little Gravel, little Silt, wet.								
95														
96	49	24/12	96-98	1-3 6-7	0.0 ppm	Loose, brown and gray, fine to coarse SAND, little Silt, trace Gravel, wet.								
97														
98	50	24/15	98-100	3-3 12-17	0.0 ppm	Medium dense, brown and gray, fine to coarse SAND, little Silt, trace Gravel, wet.								
99														
REMARKS											8. Temporary well set at 75.0 to 80.0 feet below ground surface. Purged 80.0 gallons. Groundwater sample submitted for laboratory analysis.			
											9. Temporary well set at 85.0 to 90.0 feet below ground surface. Purged 55.0 gallons. Groundwater sample submitted for laboratory analysis.			
REMARKS											10. Temporary well set at 95.0 to 100.0 feet below ground surface. Purged 85.0 gallons. Groundwater sample submitted for laboratory analysis.			
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.: HS-MW-12D			

BORING WELL: 62355.52 HOUSE STREET COMPLETE.GPJ_GZA_CORP.GDT 11/25/19



Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed			
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (6")	Test Data							
101	51	24/5	100-102	1-4 4-8	0.0 ppm	Loose, brown and gray, fine to coarse SAND, little Silt, little Gravel, wet.	SAND	11				
102	52	24/12	102-104	3-10 15-15	0.0 ppm	Medium dense, brown, fine to coarse SAND, little Silt, little Gravel, wet.						
103												
104	53	24/14	104-106	2-5 10-19	0.0 ppm	Medium dense, brown, fine to coarse SAND, little Silt, little Gravel, wet.						
105												
106	54	24/8	106-108	1-3 3-11	0.0 ppm	Loose, brown, fine to coarse SAND, little Silt, wet.						
107												
108	55	24/16	108-110	1-2 5-12	0.0 ppm	Loose, brown, fine to coarse SAND, little Silt, wet. Changing at 108.4 feet to: Brown, fine to medium SAND, little Silt, wet.						
109												
110	56	24/15	110-112	1-3 3-9	0.0 ppm	Loose, brown, fine to medium SAND, little Silt, wet.						
111												
112	57	24/16	112-114	1-12 20-24	0.0 ppm	Dense, brown, fine to medium SAND, little Silt, wet.		12				
113												
114	58	24/13	114-116	1-5 11-16	0.0 ppm	Medium dense, brown, fine to medium SAND, little Silt, trace Gravel, wet.						
115												
116	60	24/23	116-118	3-14 25-38	0.0 ppm	Dense, brown, fine to medium SAND, little Silt, trace Gravel, wet. Changing at 117.8 feet to: Brown, fine to coarse SAND, some Gravel, little Silt, wet.						
117												
118	61	24/9	118-120	12-19 17-17	0.0 ppm	Dense, brown, fine to coarse SAND, some Silt, little Gravel, wet.						
119												
120	62	24/8	120-122	3-5 13-15	0.0 ppm	Medium dense, brown, fine to coarse SAND, little Silt, little Gravel, wet.						
121												
122	63	24/12	122-124	5-9 14-22	0.0 ppm	Medium dense, brown, fine to coarse SAND, little Silt, little Gravel, wet.			13			
123												
124	64	24/14	124-126	6-15 23-26	0.0 ppm	Dense, brown, fine to coarse SAND, some Gravel, little Silt, wet.						
125												
126	65	24/7	126-128	7-17 24-16	0.0 ppm	Dense, brown, fine to coarse SAND, some Gravel, little Silt, wet.						
127												
128	66	24/9	128-130	7-18 45-41	0.0 ppm	Very dense, brown, fine to coarse SAND, some Gravel, little Silt, wet.						
129												
130	67	12/12	130-131	17-50/6"	0.0 ppm	Very dense, brown, fine to coarse SAND, some Gravel, little Silt, wet.						
131												
132	68	24/9	132-134	30-33 14-10	0.0 ppm	Dense, brown, fine to coarse SAND, some Gravel, little Silt, wet.						
133												
134	70	24/20	134-136	15-30 30-21	0.0 ppm	Very dense, brown, fine to coarse SAND,						

BORING WELL: 62355.52 HOUSE STREET COMPLETE.GPJ GZA CORP.GDT 11/25/19

REMARKS

- 11. Temporary well set at 105.0 to 110.0 feet below ground surface. Purged 65.0 gallons. Groundwater sample submitted for laboratory analysis.
- 12. Temporary well set at 115.0 to 120.0 feet below ground surface. Purged 100.0 gallons. Groundwater sample submitted for laboratory analysis.
- 13. Temporary well set at 125.0 to 130.0 feet below ground surface. Purged 65.0 gallons. Groundwater sample submitted for laboratory analysis.
- 14. Temporary well set at 135.0 to 140.0 feet below ground surface. Purged - gallons. Groundwater sample submitted for laboratory analysis.

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.



Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data					
136	71	24/9	136-138	18-23 21-20	0.0 ppm	some Gravel, little Silt, wet. Dense, brown, fine to coarse SAND, some Gravel, little Silt, wet.	SAND	14		
137										
138	72	24/13	138-140	10-15 16-17	0.0 ppm	Dense, brown, fine to coarse SAND, some Gravel, little Silt, wet.				
139										
140	73	17/9	140-141.4	11-39-50/5"	0.0 ppm	Very dense, brown, fine to coarse SAND, some Gravel, little Silt, wet.				
141										
142	74	17/12	142-143.4	11-34-50/5"	0.0 ppm	Very dense, brown, fine to coarse SAND, some Gravel, little Silt, wet. Changing at 142.6 feet to: Brown, fine SAND, some Silt, wet.				
143										
144	75	12/12	144-145	10-50/6"	0.0 ppm	Very dense, brown, fine SAND, some Silt, trace Gravel, wet.				
145										
146	76	18/7	146-147.5	4-15-50/6"	0.0 ppm	Very dense, brown, fine SAND, some Silt, trace Gravel, wet.				
147										
148	77	10/2	148-148.8	20-50/4"	0.0 ppm	Very dense, brown, fine to medium SAND, little Silt, wet.				
149										
150	78	6/6	150-150.5	50/6"	0.0 ppm	Very dense, brown, fine to medium SAND, little Silt, wet.				
151										
152	79	12/10	152-153	6-50/6"	0.0 ppm	Very dense, brown, fine to medium SAND, little Silt, wet.				
153										
154	80	11/11	154-154.9	29-50/5"	0.0 ppm	Very dense, brown, fine SAND, little Silt, wet.		15		Silica Sand Filter Pack
155										
156	81	11/11	156-156.9	19-50/5"	0.0 ppm	Very dense, brown, fine to medium SAND, little Silt, trace Gravel, wet.				Top of Well Screen
157										
158	82	12/11	158-159	27-50/6"	0.0 ppm	Very dense, brown, fine to medium SAND, little Silt, trace Gravel, wet.				2-Inch Dia. 5-Foot PVC Screen (0.010" Slot)
159										
160	83	18/18	160-161.5	5-19-50/6"	0.0 ppm	Very dense, brown, fine to medium SAND, little Silt, trace Gravel, wet.				Bottom of Well Screen
161										
162	84	24/20	162-164	2-8 14-14	0.0 ppm	Medium dense, brown, fine to medium SAND, little Silt, wet.				
163										
164	85	12/12	164-165	15-50/6"	0.0 ppm	Very dense, brown, fine to medium SAND, little Silt, wet.				
165										
166	86	23/14	166-167.9	3-10 30-50/5"	0.0 ppm	Dense, brown, fine to medium SAND, little Silt, wet.				
167										
168	87	23/2	168-169.9	3-13 37-50/5"	0.0 ppm	Very dense, brown, fine to medium SAND, little Silt, wet.				
169										

REMARKS

15. Temporary well set at 155.0 to 160.0 feet below ground surface. Purged 55.0 gallons. Groundwater sample submitted for laboratory analysis.
 16. Temporary well set at 165.0 to 170.0 feet below ground surface. Purged 75.0 gallons. Groundwater sample submitted for laboratory analysis.

BORING WELL: 62355.52 HOUSE STREET COMPLETE.GPJ GZA CORP.GDT 11/25/19



Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data				
171	88	18/14	170-171.5	1-16-50/6"	0.0 ppm	Very dense, brown, fine to medium SAND, little Silt, wet.	SAND	17	
172	90	12/12	172-173	11-22	0.0 ppm	Very dense, brown, fine to medium SAND, little Silt, wet.			
173									
174	91	14/14	174-175.2	26-49-50/2"	0.0 ppm	Very dense, brown, fine to medium SAND, little Silt, with small, interbedded Silty Clay layers, wet.			
175									
176	92	12/12	176-177	16-50/6"	0.0 ppm	Very dense, brown, fine SAND, some Silt, wet.			
177									
178	93	18/18	178-179.5	20-27-50/6"	0.0 ppm	Very dense, brown, fine to medium SAND, little Silt, wet. Changing at 178.9 feet to: Brown, fine SAND, some Silt, wet.			
179									
180	94	16/14	180-181.3	6-24-50/4"	0.0 ppm	Very dense, brown, fine to medium SAND, little Silt, wet.			
181									
182	95	21/21	182-183.8	12-23 44-50/3"	0.0 ppm	Very dense, brown, fine to medium SAND, little Silt, wet.		18	
183									
184	96	10/10	184-184.8	29-50/4"	0.0 ppm	Hard, gray, Silty CLAY, some fine to medium Sand, wet. Changing at 184.2 feet to: Brown and gray, fine to medium SAND, little Silt, wet.	184' 184.2' Silty CLAY SAND		
185									
186	97	17/17	186-187.4	18-29-50/5"	0.0 ppm	Very dense, brown and gray, fine to medium SAND, some Silt, wet.			
187									
188	98	24/24	188-190	9-34 44-40	0.0 ppm	Very dense, brown and gray, fine to medium SAND, some Silt, wet. Changing at 189.0 feet to: Gray, Silty CLAY, little fine Sand, wet.	189' Silty CLAY		
189									
190	99	24/24	190-192	15021-29-42	0.0 ppm	Hard, gray, Silty CLAY, some fine to medium Sand, wet. Changing at 190.5 feet to: Brown and gray, fine to medium SAND, some Silt, wet.	190.5' SAND		
191									
192	100	17/17	192-193.4	18-30-50/5"	0.0 ppm	Hard, gray, Silty CLAY, little fine Sand, dry (weathered Bedrock).	192' Silty CLAY		
193									
194						Bottom of Borehole at 194.0 Feet	194'	19	
195									
196									
197									
198									
199									
200									
201									
202									
203									
204									

BORING WELL: 62355.52 HOUSE STREET COMPLETE.GPJ GZA CORP.GDT 11/25/19

REMARKS

- 17. Temporary well set at 175.0 to 180.0 feet below ground surface. Purged 70.0 gallons. Groundwater sample submitted for laboratory analysis.
- 18. Temporary well set at 185.0 to 190.0 feet below ground surface. Purged 60.0 gallons. Groundwater sample submitted for laboratory analysis.
- 19. Monitoring well was installed in borehole upon completion. Well screen set from 154.7 to 159.5 feet below ground surface.

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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House Street

Belmont, Michigan

Boring No.: HS-MW-29A

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File No.: 16.0062335.52

Check: JTM/JMG

Contractor: Stearns Drilling Company

Foreman: Gary Geerligns

Logged by: Christopher Melby

Date Start/Finish: 10-4-19 / 10-4-19

Boring Location:

GS Elev.: Datum:

Auger/
Casing

Sampler

GROUNDWATER READINGS

Type: Hollow Stem Auger Split Spoon

O.D. / I.D.: 8.0" / 4.25" 2.0" / 1 3/8"

Hammer Wt.: 140lbs NA

Hammer Fall: 30" NA

TOC Elev.: NA NA

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed			
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data				PROTECTIVE CASING	Bentonite/Grout		
1						See HS-MW-29D for detailed soil descriptions.		1	PROTECTIVE CASING	Bentonite/Grout		
2											Silica Sand Filter Pack	Top of Well Screen
3											2-Inch Dia. 5-Foot PVC Screen (0.010" Slot)	
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14									Bottom of Borehole at 14.0 Feet			Bottom of Well Screen
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

1. Monitoring well HS-MW-29A was installed in borehole upon completion. Well screen set from approximately 4.0 to 14.0 feet below ground surface.

BORING WELL: 62355.52 HOUSE STREET COMPLETE.GPJ GZA CORP.GDT 11/25/19



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House Street

Belmont, Michigan

Boring No.: HS-MW-29B

Page: 1 of 1

File No.: 16.0062335.52

Check: JTM/JMG

Contractor: Stearns Drilling Company

Foreman: Gary Geerligns

Logged by: Christopher Melby

Date Start/Finish: 10-4-19 / 10-4-19

Boring Location:

GS Elev.: Datum:

Auger/
Casing

Sampler

Type: Hollow Stem Auger Split Spoon

O.D. / I.D.: 8.0" / 4.25" 2.0" / 1 3/8"

Hammer Wt.: 140lbs NA

Hammer Fall: 30" NA

TOC Elev.: NA NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data				PROTECTIVE CASING	
1						See HS-MW-29D for detailed soil descriptions.		<p>Bentonite/Grout</p> <p>Silica Sand Filter Pack</p> <p>Top of Well Screen</p> <p>2-Inch Dia. 5-Foot PVC Screen (0.010" Slot)</p> <p>Bottom of Well Screen</p>		
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22							Bottom of Borehole at 22.0 Feet			
23										
24										
25										
26										
27										
28										
29										

REMARKS

1. Monitoring well HS-MW-29A was installed in borehole upon completion. Well screen set from approximately 17.0 to 22.0 feet below ground surface.

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.: HS-MW-29B

BORING WELL: 62355.52 HOUSE STREET COMPLETE.GPJ GZA CORP.GDT 11/25/19



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Belmont, Michigan

Boring No.: HS-MW-29C

Page: 1 of 1

File No.: 16.0062335.52

Check: JTM/JMG

Contractor: Stearns Drilling Company

Foreman: Gary Geerligns

Logged by: Christopher Melby

Date Start/Finish: 10-2-19 / 10-3-19

Boring Location:

GS Elev.: Datum:

Auger/
Casing Sampler

Type: Hollow Stem Auger Split Spoon

O.D. / I.D.: 8.0" / 4.25" 2.0" / 1 3/8"

Hammer Wt.: 140lbs NA

Hammer Fall: 30" NA

TOC Elev.: NA NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data				PROTECTIVE CASING	
1						See HS-MW-29D for detailed soil descriptions.		1		
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
						Bottom of Borehole at 32.0 Feet				

REMARKS

1. Monitoring well HS-MW-29A was installed in borehole upon completion. Well screen set from approximately 27.0 to 32.0 feet below ground surface.

BORING WELL: 62355.52 HOUSE STREET COMPLETE.GPJ GZA CORP.GDT 11/25/19



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Boring No.: HS-MW-29D

Page: 1 of 2

File No.: 16.0062335.52

Check: JTM/JMG

Contractor: Stearns Drilling Company

Foreman: Gary Geerligns

Logged by: Christopher Melby

Date Start/Finish: 10-1-19 / 10-2-19

Boring Location:

GS Elev.: Datum:

Auger/
Casing Sampler

Type: Hollow Stem Auger Split Spoon

O.D. / I.D.: 8.0" / 4.25" 2.0" / 1 3/8"

Hammer Wt.: 140lbs NA

Hammer Fall: 30" NA

TOC Elev.: NA NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data				PROTECTIVE CASING	Bentonite/Grout
1	1	60/33	0-5		0.0 ppm	Dark brown, fine to medium SAND, little Organic Matter (TOPSOIL). Changing at 1.2 feet to: Brown and gray, CLAY & SILT, little fine Sand, wet with Gravel in tip of sleeve at 2.7 feet.	1.2' SAND (TOPSOIL) SAND	1		
2										
3										
4										
5	2	60/48	5-10		0.0 ppm	Brown and gray, fine to medium SAND, little Silt, wet.				
6										
7										
8										
9										
10	3	60/60	10-15		0.0 ppm	Brown, fine to medium SAND, little Silt, wet.		2		
11										
12										
13										
14										
15	4	60/57	15-20		0.0 ppm	Brown, fine to medium SAND, little to trace Silt, wet (SM).				
16										
17										
18										
19										
20	5	60/60	20-25		0.0 ppm	Brown, fine to medium SAND, trace Silt, wet.				
21										
22										
23										
24										
25	6	60/60	25-30		0.0 ppm	Brown, fine to medium SAND, trace Silt, wet.		3		
26										
27										
28										
29										

REMARKS

- Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings are shown in parts per million (ppm) of isobutylene. Background was measured at 0.0 ppm.
- Soil sample was collected from approximately 11.0 to 15.0 feet below ground surface and submitted for analytical laboratory testing.
- Groundwater sample was collected from approximately 21.0 to 25.0 feet below ground surface and submitted for analytical laboratory analysis.

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.: HS-MW-29D

BORING WELL: 62355.52 HOUSE STREET COMPLETE.GPJ_GZA_CORP.GDT 11/25/19



Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data				
31	7	60/60	30-35		0.0 ppm	Brown, fine to medium SAND, trace Silt, wet with small Gravel layer from 33.0 to 33.4 feet.	SAND		
32							4		
33									
34									
35	8	60/60	35-40		0.0 ppm	Brown, fine to medium SAND, trace Silt, wet.			
36									
37									
38									
39									
40	9	60/60	40-45		0.0 ppm	Brown, fine to medium SAND, trace Silt, wet.			
41									
42									
43									
44									
45	10	60/60	45-50		0.0ppm	Brown, fine to medium SAND, trace Silt, wet.			
46									
47									
48									
49									
50						Bottom of Borehole at 50.0 Feet	50'		
51									
52									
53									
54									
55									
56									
57									
58									
59									
60									
61									
62									
63									
64									

REMARKS

- Groundwater sample was collected from approximately 31.0 to 35.0 feet below ground surface and submitted for analytical laboratory analysis.
- Groundwater sample was collected from approximately 41.0 to 45.0 feet below ground surface and submitted for analytical laboratory analysis.
- Soil sample was collected from approximately 46.0 to 50.0 feet below ground surface and submitted for analytical laboratory testing.
- Monitoring well was installed in borehole upon completion. Well screen set from 76.0 to 86.0 feet below ground surface.

BORING WELL: 62355.52 HOUSE STREET COMPLETE.GPJ_GZA_CORP_GDT_11/25/19



Rose & Westra
A Division of GZA



MEMORANDUM

To: Jeffrey Kimble, U.S. EPA, Region 5

From: Loretta Powers, Rose & Westra, a Division of GZA GeoEnvironmental, Inc.

Date: November 11, 2019

File No.: 16.0062335.52 Task 006

Re: Wolverine World Wide, Inc. (Wolverine) – House Street – Monthly Progress Report

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This Monthly Progress Report (MPR) is being provided at the request of the U.S. EPA to support the July 12, 2019 *Work Plan, House Street Disposal Area, Plainfield Township, Kent County, Michigan (2019 WP)*. The 2019 WP was prepared in response to the U.S. EPA Region 5 Unilateral Administrative Order for Removal Actions¹ (UAO) effective February 1, 2018, associated with the Former Wolverine Tannery and House Street Disposal Area. This MPR is, however, submitted pursuant to Paragraph 22 of the October 28, 2019 U.S. EPA Region 5 Administrative Settlement Agreement and Order on Consent for Removal Actions² (AOC). Per Paragraph 22 of the AOC, this MPR summarizes the following items for the period of October 5 to November 6, 2019: “. . . *significant developments during the preceding period, including the actions performed and any problems encountered, analytical data received during the reporting period, and the developments anticipated during the next reporting period, including a schedule of actions to be performed, anticipated problems, and planned resolutions of past or anticipated problems.*”

ACTIONS PERFORMED

- 1) Completed fence installation.
- 2) Evaluation of steps going forward on-Site is on-going, including drafting a Capping Work Plan (CWP) for the five areas of TCLP Chromium soil.

ANALYTICAL DATA RECEIVED

No new analytical data was received during this reporting period.

ANTICIPATED ACTIONS AND SCHEDULE FOR NEXT REPORTING PERIOD

During the next reporting period, November 7, 2019 to December 6, the following tasks are anticipated to begin or be completed:

¹. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Docket No. V-W-18-C-004.

² CERCLA Docket No. V-W-20-C-002.





- 1) Continue to work with EPA regarding next steps at the Site, likely including CWP submittal. This period may also include commencement of implementation of the CWP.

IDENTIFIED PROBLEMS AND RESOLUTIONS

No significant problems were identified during this reporting period.

APPROVED 2019 WP MODIFICATIONS

No modifications to the 2019 WP were made or approved during this reporting period.

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