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GEOTECHNICAL
ENVIRONMENTAL
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The Widdicomb Building
601 Fifth Street NW
Suite 102
Grand Rapids, MI 49504
T: 616.956.6123
F: 616.288.3327
www.rosewestra.com
www.gza.com

Sent Via Email: hendershotta@michigan.gov

File No. 16.0062335.52 T2
August 2, 2018

Ms. Abigail Hendershott
District Supervisor – Remediation and Redevelopment Division
Michigan Department of Environmental Quality (MDEQ)
350 Ottawa Avenue NW #10
Grand Rapids, MI 49503

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

Dear Ms. Hendershott:

On behalf of Wolverine World Wide, Inc. (Wolverine), this letter is a monthly progress report 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 includes off-site remedial investigation information available since the submittal of the June 29, 2018 *House Street CSM Progress Report*.

This progress report also includes information to supplement the June 11 and July 11, 2018 U.S. EPA Monthly Progress Reports. **Attachment A** includes the MPRs and associated boring log submittals.

INVESTIGATION ACTIONS

R&W/GZA has been diligently working to complete the U.S. EPA RWP Sections 3.2 through 3.6 (and corresponding MDEQ PFAS sampling as described in the June 8, 2018 Source Investigation Work Plan [SIWP]). However, several items have slowed work progress at the site. Specifically, significant earthwork and vegetation clearing for access to numerous locations; relocation efforts of several borings; and, most notedly, the addition of at least 9 tiered locations (and as many as 13, depending on pending analytical data) around areas where the presence of waste was not previously known. In addition, the delineation of the WB-1/WB-2 areas have expanded well beyond what was expected. Over 100 boring locations have already been drilled for this delineation alone.

Through the date of this letter, the following tasks have been completed:

- RWP Section 3.4 – Systematic Sampling Across the Site
- RWP Section 3.3 – Biased Sampling at the Remaining Potential Disposal Areas
- RWP Section 3.6 – Soil Gas (installations and first round of sampling completed)

- RWP Section 3.5 – Monitoring Well Sampling (first round of well sampling completed)

Currently, R&W/GZA has the following scheduled for the next reporting period:

Continued efforts to sample temporary (shallow/perched) wells located throughout the Site. As of July 26, 2018, at least 26 temporary wells were installed on the Site. The majority of these remain to be sampled. Sampling will commence on these the week of August 6. If additional temporary wells are installed, they will be sampled later in the month of August.

Continued drilling of the tiered waste locations utilizing three drilling rigs. We believe these efforts may take as long as three additional weeks beyond the current schedule (i.e., continue through the end of August).

ANALYTICAL DATA RECIEVED

Non-PFAS constituents from the on-Site RWP implementation are summarized in the MPRs included in Attachment A. PFAS on-Site soil and groundwater (from temporary wells only) analytical results through July 27, 2018 are summarized in Tables 1 and 2, respectively.

PFAS data from MW-18S and MW-18D is summarized in Table 3.

These tables include Michigan's generic residential cleanup criteria for selected exposure pathways. They are provided for reference only, not to imply they will be the basis of any future removal, remediation, or closure actions.

The lab reports and geographic information system (GIS) data for these samples have been submitted to the MDEQ through AECOM.

MAPPING

Figure 1 illustrates an updated map of the permanent groundwater monitoring wells which have been installed and approximate locations of those for which we are in the process of gaining access.

R&W/GZA recently obtained access to drill at 2805 Rogue River Road NE. Drilling has not yet been scheduled.

Figure 2 illustrates the estimated extent of PFOS+PFOA above 10 ppt and above 70 ppt, including MW-18 cluster data.

Figures showing the on-Site soil boring locations are included in the EPA submittals enclosed as Attachment A.

ANTICIPATED ACTIONS AND SCHEDULE FOR NEXT REPORTING PERIOD

During the next reporting period, R&W/GZA anticipates continuing to pursue access to the pending well installation locations. Assuming access is granted, drilling will likely resume in September.

A full round of static water levels will be completed in August or September.

The on-Site EPA RWP and MDEQ SIWP investigation will continue on the Site. During the next reporting period we expect to receive significant amounts of Site data.

If you have any questions, please feel free to contact us.

Very truly yours,

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

Mark A. Westra
Associate Principal

Loretta J. Powers
Senior Project Manager

maw/ljp

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

Attachment A – U.S. EPA Submittals
Attachment B – Tables 1, 2, and 3
Attachment C – Figures 1 and 2

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Attachment A – U.S. EPA Submittals

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MEMORANDUM

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

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

Date: June 11, 2018

File No.: 16.0062335.52 Task 003

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

This Monthly Progress Report (MPR) is being provided at the request of the U.S. EPA to support the May 29, 2018 Extent of Contamination Study Removal Work Plan (RWP). The RWP was prepared in response to the U.S. EPA Region 5 Unilateral Administrative Order for Removal Actions[1] (UAO) effective February 1, 2018, associated with the Former Wolverine Tannery and House Street Disposal Area. This MPR is submitted pursuant to Paragraph 25 of the UAO.

Per Paragraph 25 of the UAO, this MPR summarizes the following items for the period of May 11 to June 8, 2018: "*. . . significant development 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.*" Subsequent to issuance of the UAO and completion of the RWP, R&W/GZA and U.S. EPA agreed that approved modifications to the RWP will also be summarized in the MPRs.

ACTIONS PERFORMED

1) May 11, 2018: Wolverine received U.S. EPA's Approval with Significant Modifications to the RWP.

2) May 29, 2018: The final RWP was submitted to the U.S. EPA. A revised FSP and QAPP were also submitted.

3) May 29, 2018 – May 31, 2018: R&W/GZA mobilized to the Site. Mobilization included tasks like clearing vegetation, staking some drilling locations, placement of signs, construction of gravel pads for work trailers, placement of work trailers, and setting equipment and supplies up for use at the Site.

4) June 1, 2018: R&W/GZA began drilling efforts for the systematic sampling across the site (i.e. 400-ft grid).

5) June 6, 2018: Media was invited to the Site to observe the RWP implementation.

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

6) June 4, 2018 – June 8, 2018: R&W/GZA continued drilling and sampling within the 400-ft grid scheme. This boring scheme is identified as HS-SB-201 through HS-SB-228. During this period 20 borings were completed, and 40 soil samples were collected, not including duplicates and matrix spike/matrix spike duplicates.

7) No perched groundwater samples were submitted for laboratory analysis. While a perched groundwater sample was collected from HS-SB-206, it was put on hold for analysis. This well will be resampled.

8) During this reporting period R&W/GZA also worked on coordination of data exchange, contractor selection and approval (paragraph 14 of the UAO), and sampling logistics with the EPA and its contractor.

Table 1 summarizes the borings completed and associated samples collected during this reporting period. The completed locations are also shown on attached Figure F (notes added 06/11/2018).

ANALYTICAL DATA RECIEVED

No analytical data was received during this reporting period.

ANTICIPATED ACTIONS AND SCHEDULE FOR NEXT REPORTING PERIOD

During the next reporting period, June 9 to July 8, 2018, R&W/GZA anticipates completing the 400-ft grid drilling (i.e. HS-SB-200 series) and perched water sampling. We anticipate this will take approximately 5 or fewer working days. Once this task (RWP Section 3.4) is complete, drilling will begin in the potential disposal areas (RWP Section 3.3; boring). The length of effort will be estimated once it begins. If waste materials are identified, the schedule will have to be adjusted to accommodate more drilling in these areas.

If drilling for RWP Section 3.3 is completed prior to the end of the next reporting period, RWP Section 3.2 will begin (biased sampling at the areas observed with waste).

Additionally, boring logs from this reporting period will be completed. We anticipate data from the HS-SB-200 series will begin to arrive mid-June. This data will be evaluated as received to determine if any additional borings are needed in the corresponding areas and submitted with the next monthly progress report.

IDENTIFIED PROBLEMS AND RESOLUTIONS

Eight (8) HS-SB-200 series borings (HS-SB-201, -203, -204, -207, -208, -211, -213, -217) were relocated due to inaccessibility, dense vegetation, or safety concerns. The approximate relocations are shown on the attached Figure F (notes added 06/11/2018). In each case START and/or U.S. EPA representatives approved the location. The locations will be mapped in the next MPR.

Two locations, HS-SB-223 and HS-SB-225, were identified as fully inaccessible. Due to the high number of borings in the general area of these two locations as well as a high improbability of historical waste disposal in these areas (inaccessibility), U.S. EPA and R&W/GZA agreed these locations do not merit further investigation. These locations are being moved to the apparent man-made feature discussed in the following paragraph.

On June 7 a previously unidentified apparent man-made feature was identified west of HS-SB-216. This is a trench with stockpiled soils on the north side. The trench runs east-west with the western end terminating at the access/haul road, and runs approximately 15' north of HS-SB-211 (see Figure F). U.S. EPA and R&W/GZA agreed to complete two soil borings in this area. This work will be completed during the HS-SB-200 drilling phase of the

investigation and will be designated as HS-SB-223 (located in the eastern portion of the trench) and HS-SB-225 (located in the western portion of the trench near the access/haul road).

An SOP was not developed for collection of groundwater samples from temporary monitoring wells set in shallow/perched groundwater formations. On June 4 and 5, U.S. EPA and R&W/GZA agreed if a temporary well is low producing, the initial draw of water from the well will be collected for analysis with the analyte priority being the following: VOCs, PFAS, metals, SVOCs, and then miscellaneous inorganic and organic analytes (as stated in the RWP). This is not an alteration to the RWP but rather a clarification of the sampling process for low production wells.

The collection of groundwater samples from temporary wells was significantly slowing progress at the Site. Upon discussion with the U.S. EPA and START on June 6 and 7, 2018, a plan was approved to collected groundwater samples from the temporary monitoring wells installed in the 400-ft grid sampling locations at completion of this phase of drilling. Summarizing, all temporary wells will be sampled at the end of the 400-ft grid drilling.

APPROVED RWP MODIFICATIONS

Two minor RWP modifications were approved during this reporting period. These modifications are generally summarized as clarification of the TCLP metals analysis and screening intervals for the HS-SB-200 series borings.

Approved RWP Modifications (red text) will be tracked and summarized on Table 2, attached.

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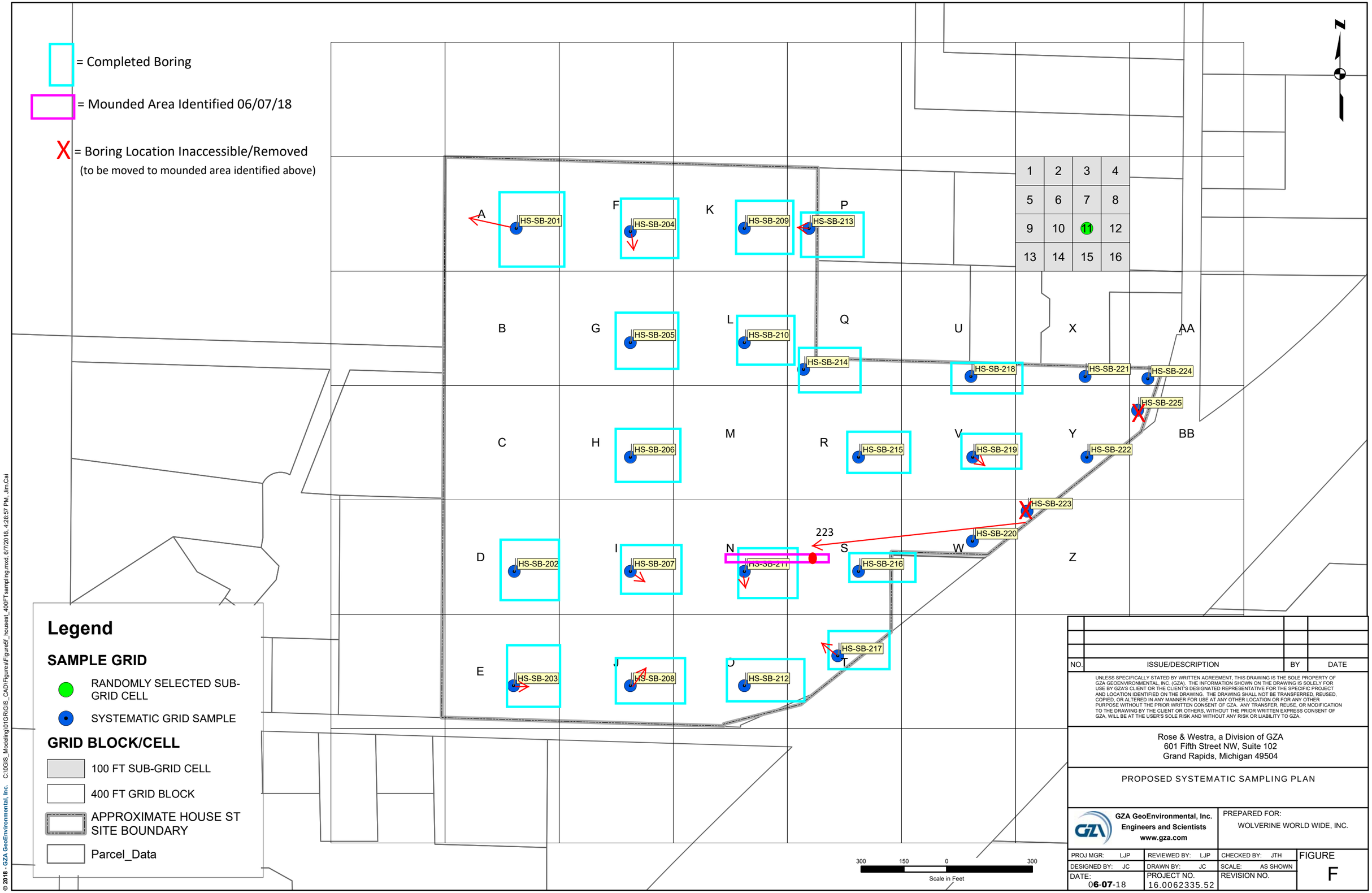
Table 1
Completed Boring Summary
1855 House Street NE, Plainfield Township, MI

Boring Location	Drilling Start Date	Drilling End Date	Total Depth (ft)	Samples Intervals Selected for Analysis (ft)		PID Readings for Samples Analyzed		XRF Readings for Samples Analyzed								Additional Notes
								Arsenic		Chromium		Mercury		Lead		
				S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	
HS-SB-201	6-Jun-18	6-Jun-18	20	2-4	10-12	3.4	4.0	6	1	52	11	<	<	10	5	
HS-SB-202	4-Jun-18	4-Jun-18	20	6-8	8-10	1.2	ND	6	4.3	38.7	22	<	2.1	6.4	5.4	Duplicate collected at HS-SB-202 (8-10) DUP
HS-SB-203	4-Jun-18	4-Jun-18	20	8-10	16-18	0.6	1.2	70	25	2.3	1.4	<	<	6.1	4.2	
HS-SB-204	6-Jun-18	6-Jun-18	20	4-6	10-12	2.6	2.5	5.5	3.3	35.9	16.7	<	<	4.2	6.8	
HS-SB-205	1-Jun-18	1-Jun-18	20	10-12	18-20	6.9	5.0	3.4	1.9	28.3	11.6	<	<	2.9	<	
HS-SB-206	1-Jun-18	4-Jun-18	20	10-12	14-16	5.2	0.1	<	6.6	38.8	60	<	<	5.4	7.5	
HS-SB-207	4-Jun-18	4-Jun-18	20	2-4	8-10	1.4	1.0	12.1	3.4	65	35.5	<	2.1	13.7	7.3	
HS-SB-208	7-Jun-18	7-Jun-18	20	0-2	8-10	2.3	4.0	2.3	1.9	69	16.2	<	<	6	4.8	
HS-SB-209	5-Jun-18	5-Jun-18	20	4-6	6-8	1.0	0.7	6.8	5.5	68	64	<	<	12.3	8.6	
HS-SB-210	1-Jun-18	1-Jun-18	20	4-6	8-10	0.3	0.1	8.4 / 5.8	3.6	81 / 64	46	< / <	<	10.7 / 13.3	7.6	XRF screened as 4-5 and 5-6, Depth interval 8-10 screened 7 times as per XRF protocol. First screening used in table.
HS-SB-211	6-Jun-18	6-Jun-18	20	2-4	8-10	1.1	1.1	9.9	4	85	53	<	<	10.3	6.4	MS/MSD collected at HS-SB-211 (2-4)
HS-SB-212	7-Jun-18	7-Jun-18	20	0-2	6-8	1.2	3.2	2.3	2	129	175	<	<	6.1	5.4	Duplicate collected at HS-SB-212 (0-2) DUP
HS-SB-213	5-Jun-18	5-Jun-18	20	6-8	18-20	1.0	0.9	2.8	3	29	18.8	<	<	8.9	4.9	
HS-SB-214	6-Jun-18	6-Jun-18	20	2-4	18-20	3.3	1.2	9.5	14.4	73	79	<	4.7	10.9	7.3	
HS-SB-215	7-Jun-18	7-Jun-18	20	0-2	10-12	1.3	1.3	7.2	8.2	51.7	38.4	<	<	8.6	8	
HS-SB-216	7-Jun-18	7-Jun-18	20	2-4	8-10	1.7	1.9	6.2	3.9	53.4	32.9	<	<	8.9	9.4	
HS-SB-217	8-Jun-18	8-Jun-18	20	2-4	12-14	3.4	2.5	6.5	1.7	46.4	7.4	<	<	8.9	3.5	MS/MSD collected at HS-SB-217 (0-2)
HS-SB-218	5-Jun-18	5-Jun-18	20	2-4	14-16	0.7	1.2	7.3	6.5	59	66	<	<	11.9	7.6	
HS-SB-219	8-Jun-18	8-Jun-18	20	4-6	10-12	0.9	1.1	3.5	4.8	70	40	3.8	<	12.4	4.7	
HS-SB-223	8-Jun-18	8-Jun-18	20	2-4	10-12	0.4	0.4	1.9	<	13.7	12.1	<	<	3.3	2.8	

Table 2
Approved RWP Modifications
1855 House Street NE, Plainfield Township, MI

Date	RWP Section(s)	Language Modification	Rationale	Approved By
6/1/2018	3.2, 3.3, 3.4	Sufficient soil will be collected and submitted to the laboratory so the Toxicity Characteristic Leaching Procedure, SW-846 Method 1311 (TCLP) metal analysis can be performed if the laboratory identifies total metal concentration (for the RCRA 8 metals) exceeding 20 times their maximum concentrations TCLP values for hazardous waste.	Clarification of intent.	Jeffrey Kimble, Mark Westra
6/1/2018	3.4	A drilling contractor will use a direct-push drill rig for the soil borings; soil samples will be collected continuously for field screening of metals using a portable XRF instrument and organic compounds using a MiniRAE 2000 PID and observed for the presence of waste materials. The soil samples will also be visually classified and logged. Generally, two soil samples will be collected from each boring. Two foot intervals will be used for XRF and PID screening unless visual evidence of waste is present. In such case, the screening interval will be increased to one foot.	Clarification of screening interval for systematic sampling across the Site (400 ft grid locations).	Jeffrey Kimble, Mark Westra



Notations added 06/11/2018

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MEMORANDUM

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

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

Date: July 11, 2018

File No.: 16.0062335.52 Task 003

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

This Monthly Progress Report (MPR) is being provided at the request of the U.S. EPA to support the May 29, 2018 Extent of Contamination Study Removal Work Plan (RWP). The RWP was prepared in response to the U.S. EPA Region 5 Unilateral Administrative Order for Removal Actions[1] (UAO) effective February 1, 2018, associated with the Former Wolverine Tannery and House Street Disposal Area. This MPR is submitted pursuant to Paragraph 25 of the UAO.

Per Paragraph 25 of the UAO, this MPR summarizes the following items for the period of June 9 to July 8, 2018: "*. . . significant development 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.*" Subsequent to issuance of the UAO and completion of the RWP, R&W/GZA and U.S. EPA agreed that approved modifications to the RWP will also be summarized in the MPRs.

ACTIONS PERFORMED

1) June 9 to June 11: The systematic sampling across the site (i.e. 400-ft grid; 200-series borings) and associated soil sampling was completed. This concluded the work outlined in Section 3.4 of the RWP. Several of these locations were slightly adjusted due to access. Each was individually discussed with EPA/START and moved to agreed upon locations.

2) June 12 to June 21: The biased sampling at potential disposal areas was conducted. This completed the work outlined in Section 3.3 of the RWP.

3) June 21 to July 6: Drilling was conducted in tiered areas around WB-4 and WB-1/WB-2. The extent of waste around WB-4 was defined. Tiered drilling around WB-1/WB-2 is not yet complete. This work was and will continue to be completed under the scope of work outlined in Section 3.2 of the RWP.

4) Temporary monitoring wells were installed at all borings where perched water was encountered. This includes eleven locations.

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

Table A summarizes the borings completed and associated samples collected during this reporting period.

The completed 400-ft systematic grid and biased locations are shown on Figures 1 and 2, respectively. This includes the final locations of any adjusted borings.

The on-going WB-1/WB-2 tiered plan with completed boring locations is shown on Figure 3.

The WB-4 tiered plan with boring locations is shown on Figure 4.

Boring logs for the 400-ft systematic grid (200-series) will be submitted under separate cover by Monday, July 16, 2018.

The biased boring logs (100-series) will be submitted under separate cover by Monday, July 23, 2018.

ANALYTICAL DATA RECIEVED

The analytical data received in this reporting period is summarized on Tables 1 through 4. These tables are based on Level 2 data packages and EDDs. Level 4 data packages and validation have not yet been completed.

These tables include Michigan's generic residential cleanup criteria for selected exposure pathways. They are provided for reference only, not to imply they will be the basis of any future removal, remediation, or closure actions.

If waste samples are included in these tables, the constituent concentrations are compared to the MDEQ Part 201 generic cleanup criteria. However, it is important to note the comparison does not necessarily imply applicability of the criteria to the waste samples because the physical and chemical properties of the waste samples are expected to be different than the default values or assumptions used to derive the Generic Soil Cleanup Criteria in the Cleanup Criteria Requirements for Response Activity Rules (R299.1-299.50).

The data includes the following potential waste area biased locations: 123, 124, 125, 128, and 129.

The data includes the following 400-ft systematic locations: 201 through 225. This data in conjunction with the visual, PID, and XRF screening conducted during the drilling and soil logging indicates waste is not likely present in these systematic grid areas.

R&W/GZA is working with EPA to develop a regular schedule for GIS and lab data uploads.

ANTICIPATED ACTIONS AND SCHEDULE FOR NEXT REPORTING PERIOD

During the next reporting period, July 9 to August 3, 2018, R&W/GZA anticipates completing and/or continuing to conduct the following tasks.

1) Installation of soil gas points and first round of sampling (RWP Section 3.6);

2) The first round of groundwater sampling in the on-site permanent monitoring wells (RWP Section 3.5);

3) Sampling of the installed temporary/perched groundwater wells (upon completed of all borings);

4) Tiered drilling around the known waste areas (RWP Section 3.2); and

5) Tiered drilling around locations where waste was identified in the biased potential waste borings (these may include 101, 102, 103, 108, 109, 110, 111, 112, 113, 114, 129, 132, 135)

Additionally, boring logs from this reporting period will be completed. We anticipate remaining data from the HS-SB-100 series as well as on-going data from the tiered boring locations around known waste areas will be received during the next reporting period.

IDENTIFIED PROBLEMS AND RESOLUTIONS

As indicated in item 5 above, waste was identified in at least 9 (and as many as 13, depending on analytical data) biased potential waste borings. Based on this increased scope of work and several other limiting factors, on July 3, 2018 R&W/GZA requested a schedule extension on behalf of Wolverine. On July 9, 2018, the extension was approved by the EPA. The revised end date for first round of sample collection is August 10, 2018.

R&W/GZA and EPA discussed and concurred that in areas where waste areas appear to be converging (i.e. tiered areas overlap or are encroaching on each other), R&W/GZA with EPA/START's input can elect to encompass those areas into one and complete outlying tiers. The understanding is that the area(s) within the combined areas where tiered drilling is not conducted will be presumed to include waste.

APPROVED RWP MODIFICATIONS

No RWP modifications were made during this reporting period.

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Table A
Completed Boring Summary
1855 House Street NE
Planfield Township, Kent County, MI

Boring Location	Drilling Start Date	Drilling End Date	Total Depth (ft)	Sample Intervals Selected for Analysis (ft)			PID Readings for Samples Analyzed			XRF Results for Samples Analyzed												Comments
										As			Cr			Hg			Pb			
				S1	S2	S3	S1	S2	S3	S1	S2	S3	S1	S2	S3	S1	S2	S3	S1	S2	S3	
HS-SB-T2-002	25-Jun-18	25-Jun-18	20	9-10	12-13	NA	2.0	1.3	NA	<	<	NA	13.4	19.2	NA	<	<	NA	3.8	4.4	NA	MS/MSD sample at 9-10
HS-SB-T2-003	25-Jun-18	25-Jun-18	20	9-10	13-14	NA	0.8	1.5	NA	1.9	<	NA	24.8	8.7	NA	<	<	NA	4.3	4.1	NA	
HS-SB-T2-004	26-Jun-18	26-Jun-18	20	9-10	13-14	NA	1.2	1.0	NA	<	1.3	NA	15.2	12.6	NA	<	<	NA	3.3	3	NA	
HS-SB-T2-010	26-Jun-18	26-Jun-18	20	9-10	13-14	NA	1.6	1.6	NA	1.9	4.6	NA	15.8	24.6	NA	<	<	NA	<	10.8	NA	
HS-SB-T2-011	26-Jun-18	26-Jun-18	20	9-10	13-14	NA	2.0	1.5	NA	6.2	<	NA	63	18.6	NA	<	<	NA	9.7	2	NA	
HS-SB-T2-012	25-Jun-18	25-Jun-18	20	4-5	9-10	13-14	0.9	1.3	1.4	7.7	2.8	1.8	137	22.5	24.8	<	<	<	8	2	3.2	
HS-SB-T2-017	29-Jun-18	29-Jun-18	20	9-10	13-14	17-18	0.4	1.0	1.0	5.2	<	5.6	66	18.3	61	<	<	<	6.2	3.6	6.6	
HS-SB-T2-018	29-Jun-18	29-Jun-18	20	9-10	13-14	17-18	1.1	1.4	1.4	3.9	<	1.5	128	24.6	20.8	3.8	<	<	7.4	2.4	3.9	
HS-SB-T2-019	28-Jun-18	28-Jun-18	20	13-14	17-18	NA	1.7	1.9	NA	<	<	NA	27	21.1	NA	<	<	NA	4.7	5.8	NA	
HS-SB-T2-020	29-Jun-18	29-Jun-18	20	12-13	17-18	19-20	1.9	2.1	1.7	1.2	<	2.1	11.3	8.3	13.7	<	<	<	3.5	2.8	4.5	
HS-SB-T2-021	28-Jun-18	28-Jun-18	20	11-12	17-18	19-20	NA	1.4	1.5	NA	<	2.6	NA	7.7	19.7	NA	<	<	NA	5.4	7.8	Boring log says no recovery at 11-12; soil was recovered at this interval in sample boring
HS-SB-T2-022	29-Jun-18	29-Jun-18	20	12-13	17-18	19-20	0.8	1.4	0.8	<	<	4.6	10.6	11.3	47.4	<	<	<	4	2.9	7.4	Duplicate sample collected at 12-13; MS/MSD sample at 19-20
HS-SB-T2-023	2-Jul-18	2-Jul-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
HS-SB-T2-024	2-Jul-18	2-Jul-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-T2-025	3-Jul-18	3-Jul-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-T2-026	3-Jul-18	3-Jul-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-T2-027	3-Jul-18	3-Jul-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
HS-SB-T2-028	5-Jul-18	5-Jul-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-T2-029	3-Jul-18	3-Jul-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-T2-030	3-Jul-18	3-Jul-18	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-T2-031	3-Jul-18	3-Jul-18	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-T2-032	2-Jul-18	2-Jul-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-T2-033	2-Jul-18	2-Jul-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
HS-SB-T2-034	29-Jun-18	29-Jun-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-T3-009	5-Jul-18	5-Jul-18	20	2-3	8-9	17-18	1.2	1.4	1.5	6.6	6.5	2.8	67	327	52	<	<	<	6.4	9.9	6	
HS-SB-T3-010	6-Jul-18	6-Jul-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in secondary boring for laboratory analytical
HS-SB-T3-011	5-Jul-18	5-Jul-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
HS-SB-T3-012	5-Jul-18	5-Jul-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-T3-013	5-Jul-18	5-Jul-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-T3-014	5-Jul-18	5-Jul-18	20	5-6	7-8	11-12	2.0	2.0	2.6	2.5	6.4	6.6	29	72	65	<	<	<	4.1	6.8	4.9	
HS-SB-T3-020	6-Jul-18	6-Jul-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-T3-021	6-Jul-18	6-Jul-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
HS-SB-T4-001	6-Jul-18	6-Jul-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
HS-SB-T4-002	6-Jul-18	6-Jul-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-T4-003	6-Jul-18	6-Jul-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-001	27-Jun-18	27-Jun-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-002	27-Jun-18	27-Jun-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-003	26-Jun-18	26-Jun-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-004	27-Jun-18	27-Jun-18	20	11-12	19-20	NA	1.7	NR	NA	4.1	4.6	NA	59	59	NA	<	<	NA	7	7.8	NA	
HS-SB-005	27-Jun-18	27-Jun-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-006	27-Jun-18	27-Jun-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-007	26-Jun-18	26-Jun-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-008	26-Jun-18	26-Jun-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in offset boring
HS-SB-009	28-Jun-18	28-Jun-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Temporary well installed
HS-SB-010	27-Jun-18	27-Jun-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-011	28-Jun-18	28-Jun-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-012	28-Jun-18	28-Jun-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-013	28-Jun-18	28-Jun-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-014	28-Jun-18	28-Jun-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-015	28-Jun-18	28-Jun-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-016	28-Jun-18	28-Jun-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-017	22-Jun-18	22-Jun-18	20	9-10	13-14	NA	0.8	1.1	NA	1.6	<	NA	16.9	10.8	NA	<	<	NA	2.2	2.3	NA	
HS-SB-018	21-Jun-18	21-Jun-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-019	21-Jun-18	21-Jun-18	20	8-9	12-13	NA	2.0	2.1	NA	5.1	<	NA	34.9	13.4	NA	<	<	NA	4.8	4.1	NA	
HS-SB-020	21-Jun-18	21-Jun-18	20	9-10	10-11	14-15	0.7	0.8	1.0	3.3	6.2	2.3	29.5	43.8	13	<	<	<	4	5.8	3.7	
HS-SB-021	22-Jun-18	22-Jun-18	20	9-10	11-12	NA	0.8	2.2	NA	1.8	2.3	NA	8.8	13.6	NA	<	<	NA	3.4	2.6	NA	
HS-SB-022	22-Jun-18	22-Jun-18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Waste noted in boring
HS-SB-023	22-Jun-18	22-Jun-18	20	9-10	12-13	NA	1.0	2.0	NA	1.8	2.2	NA	22.4	25.5	NA	<	<	NA	2.9	5.7	NA	Duplicate sample collected at 12-13
HS-SB-024	22-Jun-18	22-Jun-18	20	9-10	12-13	NA	1.1	1.4	NA	<	1.6	NA	14	16.6	NA	<	<	NA	2.5	3.1	NA	
HS-SB-101	15-Jun-18	15-Jun-18	20	5-6	8-9	12-13		28.6	29.2		4.4	3.2		1895	2560		<	<		7.9	8.7	Waste noted in boring; duplicate sample at 8-9; XRF says 5-6 no recovery
HS-SB-102	15-Jun-18	15-Jun-18	20	7-8	11-12	14-15	51.4	91.5	1.4	5.7	<	7.3	25262	14510	81	<	<	<	24.6	19.6	10.8	Waste noted in boring
HS-SB-103	18-Jun-18	18-Jun-18	20	7-8	12-13	15-16	80.2	2.7	6.9	5.5	3.7	<	18981	38.6	202	<	<	<	44.3	7.6	4	Waste noted in boring
HS-SB-104	18-Jun-18	18-Jun-18	20	5-6	7-8	12-13	5.4	4.0	1.0	6	5.6	<	49.4	51.2	13	<	<	<	17.4	6.1	4.8	
HS-SB-105	18-Jun-18	18-Jun-18	20	6-7	8-9	13-14	2.0	1.8	2.8	7.2	7.3	<	59.1	55.7	13.6	<	<	<	8.2	8	3.6	
HS-SB-106	19-Jun-18	19-Jun-18	20	7-8	8-9	14-15	1.6	1.4	1.6	6.9	4.5	4.3	36.4	948	20.5	<	<	<	8	8.1	7.4	
HS-SB-107	19-Jun-18	19-Jun-18	20	8-9	13-14	15-16	1.0	1.4	1.0	<	6.5	5.6	67	74	65	<	<	<	<	7.5	8.8	
HS-SB-108	19-Jun-18	19-Jun-18	20	8-9	12-13	16-17	3.0	1.2	1.1	5.6	7.1	3.5	4167	61	256	<	<	<	10.8	9	5.5	Temporary well installed

Table A
Completed Boring Summary
1855 House Street NE
Planfield Township, Kent County, MI

Boring Location	Drilling Start Date	Drilling End Date	Total Depth (ft)	Sample Intervals Selected for Analysis (ft)			PID Readings for Samples Analyzed			XRF Results for Samples Analyzed												Comments
										As			Cr			Hg			Pb			
HS-SB-109	19-Jun-18	19-Jun-18	20	9-10	11-12	14-15	18.6	15.4	1.4	2.6	3.2	<	2776	3475	<	<	<	<	17.9	16.2	3.3	Waste noted in boring
HS-SB-110	18-Jun-18	18-Jun-18	20	7-8	11-12	14-15	3.4	2.3	2.3	1.8	2	<	4037	153	17.5	<	<	<	11.2	5	3	Duplicate sample collected at 7-8; MS/MSD sample at 14-15
HS-SB-111	20-Jun-18	20-Jun-18	20	11-12	12-13	14-15	0.8	5.1	0.7	5.8	4.9	1.8	100	116	34	<	<	<	8.7	9.7	5.1	Waste noted in boring
HS-SB-112	20-Jun-18	20-Jun-18	20	8-9	9-10	11-12	0.9	0.6	0.8	4.9	6.4	3.2	62	2115	36	<	<	<	7.9	100.8	3.9	Duplicate sample collected at 9-10; MS/MSD sample at 11-12
HS-SB-113	20-Jun-18	20-Jun-18	20	2-3	7-8	9-10	0.8	1.0	1.2	4.2	2.6	3.1	1601	115.9	24.9	<	<	<	8.9	3.4	3.5	Waste noted in boring
HS-SB-114	20-Jun-18	20-Jun-18	20	0-1	2-3	6-7	1.0	0.9	1.1	2.3	5.5	7.0	15413	88	97	<	<	<	12.3	8.9	8.8	Petroleum-like odor noted in sample from 0-1
HS-SB-115	20-Jun-18	20-Jun-18	20	3-4	7-8	9-10	0.9	0.9	1.0	8.3	7.4	5.9	76	67	68	<	<	<	11.4	9	11.3	
HS-SB-116	21-Jun-18	21-Jun-18	20	5-6	8-9	11-12	1.5	1.1	1.5	3.2	<	<	35	17.8	16.4	<	<	<	4.3	4.2	3.7	Duplicate sample collected at 5-6; MS/MSD sample at 11-12
HS-SB-117	14-Jun-18	14-Jun-18	20	1-2	7-8	12-13	3.4	3.6	3.1	<	<	3.7	26.3	12.2	88	<	<	<	18.3	3.8	8.6	Temporary well installed
HS-SB-118	14-Jun-18	14-Jun-18	20	7-8	12-13	13-14	2.7	4.5	4.7	9.8	6.3	4.3	60	53.2	53.1	<	<	<	10.7	9.6	8.9	
HS-SB-119	21-Jun-18	21-Jun-18	20	2-3	6-7	10-11	1.6	2.0	3.5	3.9	4.6	1.5	47.7	46	21.2	<	<	<	6.1	7	5.4	
HS-SB-120	13-Jun-18	13-Jun-18	20	3-4	6-7	8-9	2.4	2.4	2.8	5.4	5.5	6.9	54.2	44.5	53.9	<	<	<	21.3	8.6	9	
HS-SB-121	20-Jun-18	20-Jun-18	20	1-2	2-3	6-7	NR	NR	1.2	6.4	6.1	4.2	60	41.5	50.8	<	<	<	12	8.3	9	
HS-SB-122	12-Jun-18	12-Jun-18	20	7-8	14-15	16-17	4.0	4.6	5.5	4.5	<	1.8	47.8	11.2	18.7	<	<	<	8.4	4.9	6.2	
HS-SB-123	12-Jun-18	12-Jun-18	20	6-7	7-8	12-13	1.6	4.2	4.7	3.5	5.3	<	35.5	41.5	16.5	<	1.3	16.5	8	8.2	8	Temporary well installed
HS-SB-124	12-Jun-18	12-Jun-18	20	6-7	7-8	9-10	1.7	0.5	1.0	4.2	4.2	4	1434	649	60.6	<	<	<	11.6	6.5	7.5	Duplicate sample collected at 6-7; MS/MSD sample at 7-8
HS-SB-125	13-Jun-18	13-Jun-18	20	1-2	8-9	11-12	3.5	1.4	1.2	3.1	6.0	4.3	35.1	47.3	47.5	<	<	<	11.1	7.6	6.2	Duplicate sample collected at 1-2; MS/MSD sample at 8-9
HS-SB-126	13-Jun-18	13-Jun-18	20	1-2	3-4	11-12	0.5	0.4	0.5	6.7	23.7	3.4	74	97	39	<	<	<	9.4	18.7	7.5	
HS-SB-127	14-Jun-18	14-Jun-18	20	0-1	2-3	10-11	ND	0.1	0.4	2.5	2.7	5.4	534	707	215	<	<	<	13.5	9.5	12.8	
HS-SB-128	13-Jun-18	13-Jun-18	20	5-6	6-7	14-15	0.6	0.6	0.5	5.8	4.7	2.8	84	53	54	<	<	<	10.8	9.1	7.3	Temporary well installed
HS-SB-129	12-Jun-18	12-Jun-18	20	7-8	8-9	10-11	56.3	1.8	2.3	2.9	8.7	3.5	29782	409	1759	<	<	<	17.8	11.4	8.4	Waste noted in boring; temporary well installed
HS-SB-130	13-Jun-18	13-Jun-18	20	0-1	6-7	12-13	0.7	1.0	0.5	2.3	5.3	7.3	631	59	73	<	<	<	10.1	7.2	7.6	
HS-SB-131	14-Jun-18	14-Jun-18	20	3-4	7-8	18-19	0.2	0.2	ND	5.3	4	14.9	62	43	56	<	<	<	10.5	8.1	8.4	Temporary well installed
HS-SB-132	15-Jun-18	15-Jun-18	20	6-7	8-9	11-12	11.8	24.0	1.4	5.8	3.3	1.6	16758	8666	11.7	<	<	<	22.2	13.9	6.7	Waste noted in boring; MS/MSD sample at 11-12; START collects split sample at 8-9
HS-SB-133	15-Jun-18	15-Jun-18	20	4-5	6-7	10-11	0.5	0.8	0.7	3.1	4	4.5	75	61	70	<	<	<	8.5	6.8	6.9	
HS-SB-134	18-Jun-18	18-Jun-18	20	7-8	14-15	15-16	1.0	0.8	0.4	5.9	10.7	5.7	70	63	104	<	<	<	10.4	7.4	4.3	
HS-SB-135	18-Jun-18	18-Jun-18	20	7-8	8-9	12-13	130.8	2.1	1.4	2.3	6.8	6.1	5201	64	45	<	<	<	12.2	7.3	4.8	Waste noted in boring
HS-SB-201	6-Jun-18	6-Jun-18	20	2-4	10-12	NA	3.4	4.0	NA	6.2	1.3	NA	52.4	10.6	NA	<	<	NA	9.9	5.2	NA	Lab samples collected 6/7
HS-SB-202	4-Jun-18	4-Jun-18	20	6-8	8-10	NA	1.2	ND	NA	6	4.3	NA	38.7	22	NA	<	2.1	NA	6.4	5.4	NA	Duplicate sample collected at 8-10
HS-SB-203	4-Jun-18	4-Jun-18	20	8-10	16-18	NA	0.6	1.2	NA	70	25.0	NA	2.3	1.4	NA	<	<	NA	6.1	4.2	NA	Trip blank to be analyzed?
HS-SB-204	6-Jun-18	6-Jun-18	20	4-6	10-12	NA	2.6	2.5	NA	5.5	3.3	NA	35.9	16.7	NA	<	<	NA	4.2	6.8	NA	
HS-SB-205	1-Jun-18	1-Jun-18	20	10-12	18-20	NA	6.9	5.0	NA	3.4	1.9	NA	28.3	11.6	NA	<	<	NA	2.9	<	NA	
HS-SB-206	1-Jun-18	4-Jun-18	20	10-12	14-16	NA	5.2	0.1	NA	<	6.6	NA	38.8	60	NA	<	<	NA	5.4	7.5	NA	Perched water at approximately 12 feet bgs; collected groundwater sample from temporary wel
HS-SB-207	4-Jun-18	4-Jun-18	20	2-4	8-10	NA	1.4	1.0	NA	12.1	3.4	NA	65	35.5	NA	<	2.1	NA	13.7	7.3	NA	
HS-SB-208	7-Jun-18	7-Jun-18	20	0-2	8-10	NA	2.3	4.0	NA	2.3	1.9	NA	69	16.2	NA	<	<	NA	6	4.8	NA	
HS-SB-209	5-Jun-18	5-Jun-18	20	4-6	6-8	NA	1.0	0.7	NA	6.8	5.5	NA	68	64	NA	<	<	NA	12.3	8.6	NA	
HS-SB-210	1-Jun-18	1-Jun-18	20	4-6	8-10	NA	0.3	0.1	NA	8.4	3.6	NA	81	46	NA	<	<	NA	10.7	7.6	NA	
HS-SB-211	6-Jun-18	6-Jun-18	20	2-4	8-10	NA	1.1	1.1	NA	9.9	4	NA	85	53	NA	<	<	NA	10.3	6.4	NA	MS/MSD sample at 2-4
HS-SB-212	7-Jun-18	7-Jun-18	20	0--2	6-8	NA	1.2	3.2	NA	2.3	2.0	NA	129	175	NA	<	<	NA	6.1	5.4	NA	Duplicate sample collected at 0-2
HS-SB-213	5-Jun-18	5-Jun-18	20	6-8	18-20	NA	1.0	0.9	NA	2.8	3	NA	29	18.8	NA	<	<	NA	8.9	4.9	NA	
HS-SB-214	6-Jun-18	6-Jun-18	20	2-4	18-20	NA	3.3	1.2	NA	9.5	14.4	NA	73	79	NA	<	4.7	NA	10.9	7.3	NA	
HS-SB-215	7-Jun-18	7-Jun-18	20	0-2	10-12	NA	1.3	1.3	NA	7.2	8.2	NA	51.7	38.4	NA	<	<	NA	8.6	8.0	NA	
HS-SB-216	7-Jun-18	7-Jun-18	20	2-4	8-10	NA	1.7	1.9	NA	6.2	3.9	NA	53.4	32.9	NA	<	<	NA	8.9	9.4	NA	
HS-SB-217	8-Jun-18	8-Jun-18	20	2-4	12-14	NA	3.4	2.5	NA	6.5	1.7	NA	46.4	7.4	NA	<	<	NA	8.9	3.5	NA	MS/MSD sample at 2-4
HS-SB-218	5-Jun-18	5-Jun-18	20	2-4	14-16	NA	0.7	1.2	NA	7.3	6.5	NA	59	66	NA	<	<	NA	11.9	7.6	NA	
HS-SB-219	8-Jun-18	8-Jun-18	20	4-6	10-12	NA	0.9	1.1	NA	3.5	4.8	NA	70	40	NA	3.8	<	NA	12.4	4.7	NA	Temporary well installed
HS-SB-220	11-Jun-18	11-Jun-18	20	2-4	16-18	NA	0.7	2.1	NA	5.3	4.5	NA	43.1	18.2	NA	<	<	NA	7.4	5.7	NA	
HS-SB-221	11-Jun-18	11-Jun-18	20	4-6	6-8	NA	1.0/1.9	1.6	NA	5.1	3.8	NA	62	67	NA	<	<	NA	10.1	7.9	NA	Perched water; installed temporary well
HS-SB-222	11-Jun-18	11-Jun-18	20	2-4	6-8	NA	0.5	0.4	NA	1.7	4.1	NA	52	55	NA	<	<	NA	6.6	7.9	NA	Perched water at approximately 14 feet bgs; installed temporary wel
HS-SB-223	8-Jun-18	8-Jun-18	20	2-4	10-12	NA	0.4	0.4	NA	1.9	<	NA	13.7	12.1	NA	<	<	NA	3.3	2.8	NA	
HS-SB-224	12-Jun-18	12-Jun-18	20	8-10	10-12	NA	0.5	0.5	NA	5	5.9	NA	34	61	NA	<	<	NA	6.8	8.8	NA	START collected duplicate sample
HS-SB-225	11-Jun-18	11-Jun-18	20	2-4	18-20	NA	3.1	3.3	NA	4.9	1.7	NA	56.4	11.9	NA	<	<	NA	7.4	4.9	NA	

Legend

- 400 FT GRID SYSTEMATIC SAMPLE LOCATION
- APPROXIMATE LOCATION OF POTENTIAL FORMER DISPOSAL AREA
- APPROXIMATE HOUSE ST SITE BOUNDARY

GRID BLOCK/CELL

- 400 FT GRID BLOCK

NO.	ISSUE/DESCRIPTION	BY	DATE

Rose & Westra, a Division of GZA
601 Fifth Street NW, Suite 102
Grand Rapids, Michigan 49504

FIELD SAMPLING LOCATIONS
SYSTEMATIC SAMPLING
(200-SERIES BORINGS)

GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR: WNJ/WWW

PROJ MGR: LJP	REVIEWED BY: LJP	CHECKED BY: JTH	FIGURE
DESIGNED BY: JC	DRAWN BY: JC/JMG	SCALE: AS SHOWN	1
DATE: 07-11-2018	PROJECT NO. 16.0062335.52	REVISION NO.	

Legend

- ADDITIONAL BIASED SAMPLE LOCATION
- BIASED SAMPLE LOCATION - DETECTED WITH WASTE
- BIASED SAMPLE LOCATION - WASTE POTENTIALLY PRESENT, PENDING ANALYTICAL RESULTS
- APPROXIMATE LOCATION OF POTENTIAL FORMER DISPOSAL AREA
- APPROXIMATE HOUSE ST SITE BOUNDARY

GRID BLOCK/CELL

- 400 FT GRID BLOCK

NO.	ISSUE/DESCRIPTION	BY	DATE

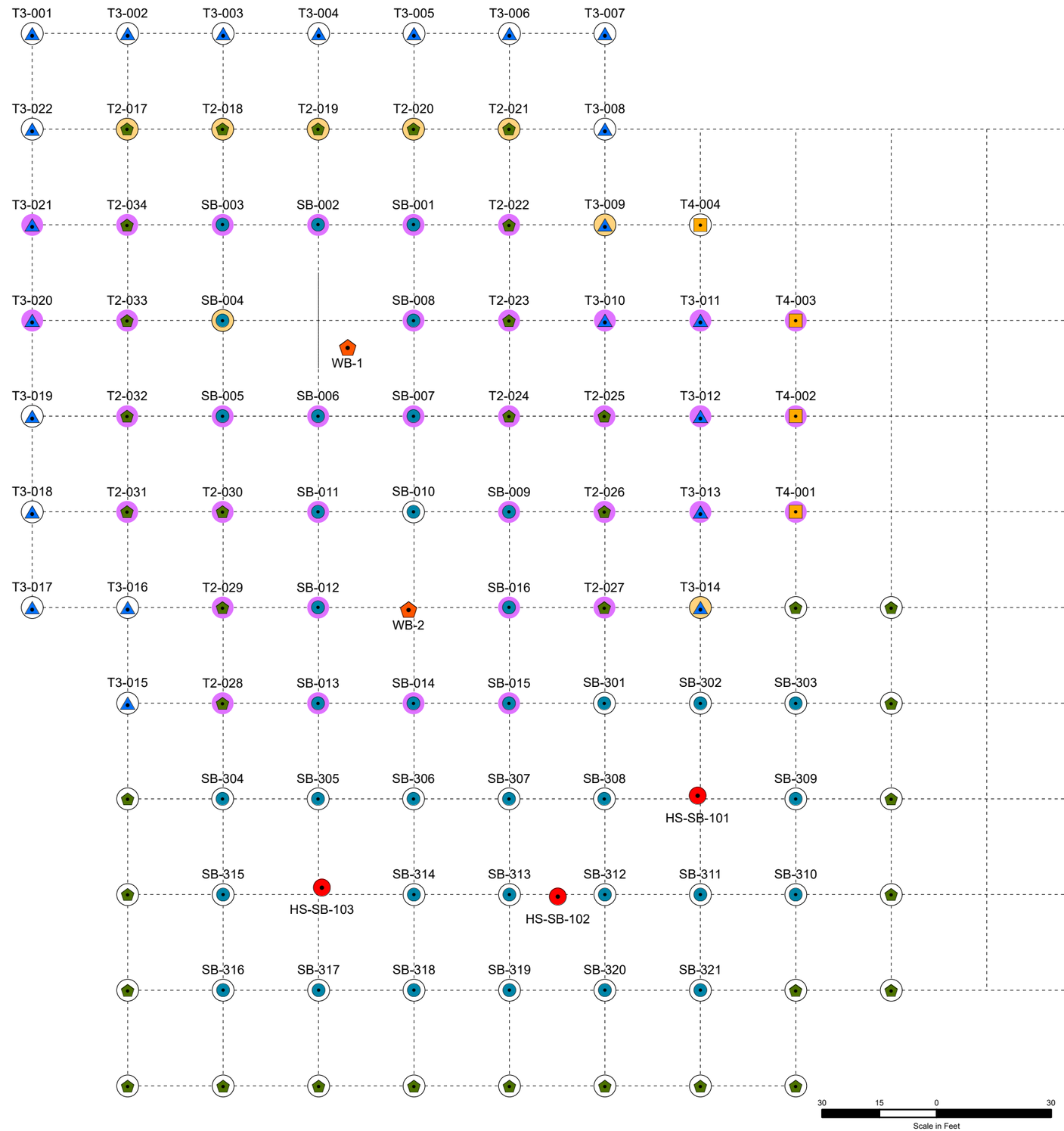
Rose & Westra, a Division of GZA
601 Fifth Street NW, Suite 102
Grand Rapids, Michigan 49504

FIELD SAMPLING LOCATIONS
BIASED SAMPLING
(100-SERIES BORINGS)

GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
WNJ/WWW

PROJ MGR: LJP	REVIEWED BY: LJP	CHECKED BY: JTH	FIGURE
DESIGNED BY: JC	DRAWN BY: JC/JMG	SCALE: AS SHOWN	2
DATE: 07-11-2018	PROJECT NO. 16.0062335.52	REVISION NO.	



Legend

25 FT GRIDS TIERED LOCATION

- Tier 1
- Tier 2
- Tier 3
- Tier 4

TIERED LOCATION STATUS

- WASTE OBSERVED
- NO WASTE OBSERVED
- BORING NOT COMPLETED
- BIASED SAMPLING - DETECTED WITH WASTE
- PREVIOUS SOURCE AREA SAMPLE LOCATION
- 25FT_GRID_Int

NOTE:
1. SOIL BORING STATUS UPDATED THROUGH 7/8/2018.

NO.	ISSUE/DESCRIPTION	BY	DATE

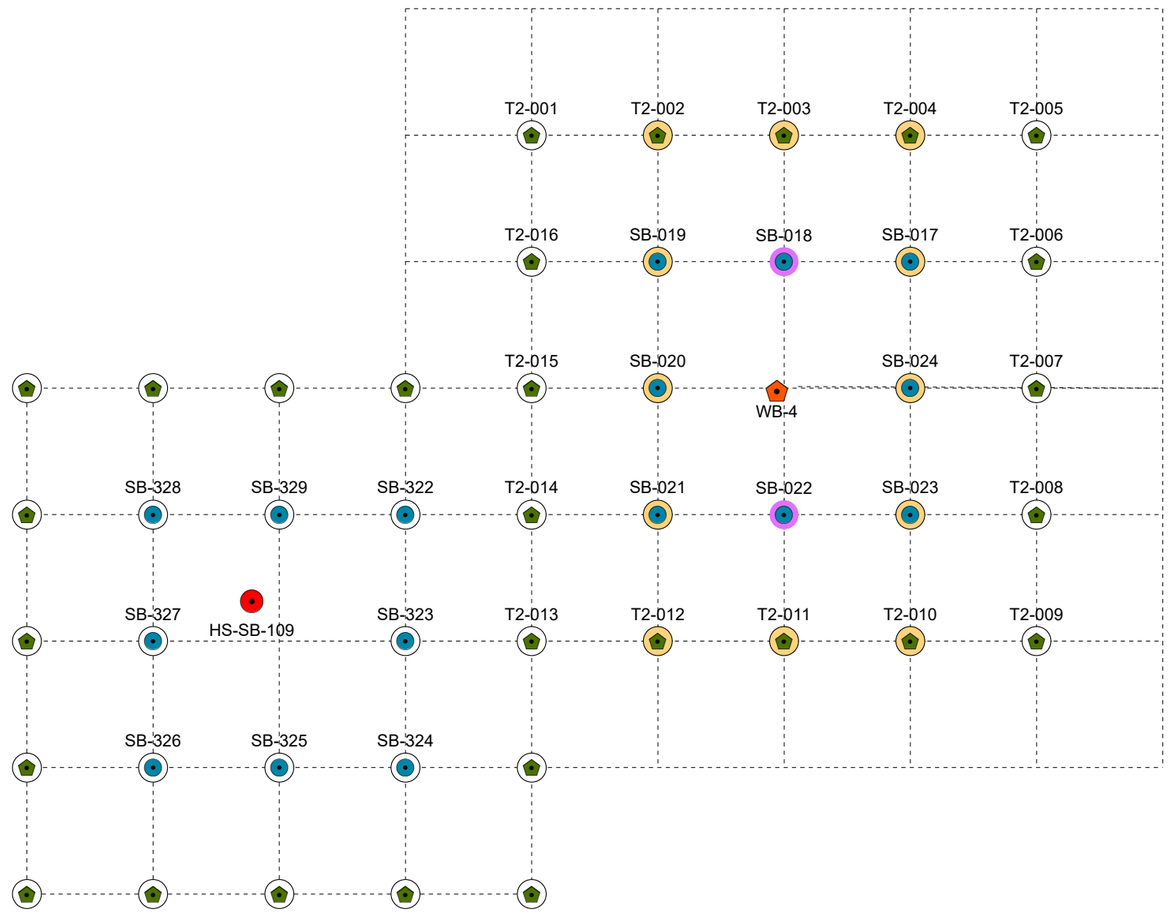
Rose & Westra, a Division of GZA
601 Fifth Street NW, Suite 102
Grand Rapids, Michigan 49504

TIERED INVESTIGATION AT
WB-1/WB-2 AREAS

GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
WNJ/WWW

PROJ MGR: LJP	REVIEWED BY: LJP	CHECKED BY: JTH	FIGURE
DESIGNED BY: JC	DRAWN BY: JC/JMG	SCALE: AS SHOWN	3
DATE: 07-11-2018	PROJECT NO. 16.0062335.52	REVISION NO.	



Legend

25 FT GRIDS TIERED LOCATION

- Tier 1
- Tier 2
- Tier 3
- Tier 4

TIERED LOCATION STATUS

- WASTE OBSERVED
- NO WASTE OBSERVED
- BORING NOT COMPLETED
- BIASED SAMPLING - DETECTED WITH WASTE
- PREVIOUS SOURCE AREA SAMPLE LOCATION
- 25FT_GRID_Int

30 15 0 30
Scale in Feet

NOTE:
1. SOIL BORING STATUS UPDATED THROUGH 7/8/2018.

NO.	ISSUE/DESCRIPTION	BY	DATE

Rose & Westra, a Division of GZA
601 Fifth Street NW, Suite 102
Grand Rapids, Michigan 49504

TIERED INVESTIGATION AT
WB-4 AREA

GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
WNJ/WWW

PROJ MGR: LJP	REVIEWED BY: LJP	CHECKED BY: JTH	FIGURE
DESIGNED BY: JC	DRAWN BY: JC/JMG	SCALE: AS SHOWN	4
DATE: 07-11-2018	PROJECT NO. 16.0062335.52	REVISION NO.	

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - VOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-123	HS-SB-123	HS-SB-123	HS-SB-124	HS-SB-124	HS-SB-124	HS-SB-124	HS-SB-125	HS-SB-125	HS-SB-125	HS-SB-125	HS-SB-128	HS-SB-128	HS-SB-128	HS-SB-129	HS-SB-129	HS-SB-129
SAMPLE NAME							HS-SB-123 (6-7)	HB-SB-123 (7-8)	HS-SB-123 (12-13)	HS-SB-124 (6-7)	HS-SB-124 (6-7) DUP	HS-SB-124 (7-8)	HS-SB-124 (9-10)	HB-SB-125 (1-2)	HB-SB-125 (1-2) DUP	HB-SB-125 (8-9)	HB-SB-125 (11-12)	HB-SB-128 (5-6)	HB-SB-128 (6-7)	HB-SB-128 (14-15)	HS-SB-129 (7-8)	HS-SB-129 (8-9)	HS-SB-129 (10-11)
DEPTH (FT)							6 - 7	7 - 8	12 - 13	6 - 7	6 - 7	7 - 8	9 - 10	1 - 2	1 - 2	8 - 9	11 - 12	5 - 6	6 - 7	14 - 15	7 - 8	8 - 9	10 - 11
LAB ID							TF13021-001	TF13021-002	TF13021-003	TF13021-008	TF13021-009	TF13021-010	TF13021-011	TF13021-015	TF13021-016	TF13021-017	TF13021-018	TF13021-019	TF13021-020	TF13021-021	TF13021-005	TF13021-006	TF13021-007
SAMPLE DATE							06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/13/2018	06/13/2018	06/13/2018	06/13/2018	06/13/2018	06/13/2018	06/13/2018	06/12/2018	06/12/2018	06/12/2018
Parameter (UG/KG)																							
Acetone	15,000	34,000	290,000,000	130,000,000	390,000,000,000	23,000,000	<520	<590	<730	<550	<550	<550	<540	<480	<510	<540	<380	<460	<560	<650	<610	<540	<550
Benzene	100	4,000	1,600	13,000	380,000,000	180,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
Bromodichloromethane	1,600	NA	1,200	9,100	84,000,000	110,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
Bromoform	1,600	NA	150,000	900,000	2,800,000,000	820,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
Bromomethane (Methyl bromide)	200	100	860	11,000	330,000,000	320,000	<100	<120	<150	<110	<110	<110	<110	<96	<100	<110	<76	<92	<110	<130	<120	<110	<110
Carbon disulfide	16,000	NA	76,000	1,300,000	47,000,000,000	7,200,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	73	<54	<55
Carbon tetrachloride	100	760	190	3,500	130,000,000	96,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
Chlorobenzene	2,000	500	120,000	770,000	4,700,000,000	4,300,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
Chloroethane	8,600	22,000	2,900,000	30,000,000	670,000,000,000	2,600,000	<100	<120	<150	<110	<110	<110	<110	<96	<100	<110	<76	<92	<110	<130	<120	<110	<110
Chloroform	1,600	7,000	7,200	45,000	1,300,000,000	1,200,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
Chloromethane (Methyl chloride)	5,200	NA	2,300	40,000	4,900,000,000	1,600,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
Cyclohexane	NA	NA	NA	NA	NA	NA	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
1,2-Dibromo-3-chloropropane (DBCP)	10	NA	220	260	560,000	4,400	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
Dibromochloromethane	1,600	NA	3,900	24,000	130,000,000	110,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
1,2-Dibromoethane (EDB)	20	110	670	1,700	14,000,000	92	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
1,2-Dichlorobenzene	14,000	280	11,000,000	39,000,000	100,000,000,000	19,000,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	24 J	<54	<55
1,3-Dichlorobenzene	170	680	26,000	79,000	200,000,000	200,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
1,4-Dichlorobenzene	1,700	360	19,000	77,000	450,000,000	400,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
Dichlorodifluoromethane	95,000	NA	900,000	53,000,000	3,300,000,000,000	52,000,000	<100	<120	<150	<110	<110	<110	<110	<96	<100	<110	<76	<92	<110	<130	<120	<110	<110
1,1-Dichloroethane	18,000	15,000	230,000	2,100,000	33,000,000,000	27,000,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
1,2-Dichloroethane	100	7,200	2,100	6,200	120,000,000	91,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
1,1-Dichloroethene	140	2,600	62	1,100	62,000,000	200,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
cis-1,2-Dichloroethene	1,400	12,000	22,000	180,000	2,300,000,000	2,500,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
trans-1,2-Dichloroethene	2,000	30,000	23,000	280,000	4,700,000,000	3,800,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
1,2-Dichloropropane	100	4,600	4,000	25,000	270,000,000	140,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
Ethylbenzene	1,500	360	87,000	720,000	10,000,000,000	22,000,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	120	<54	<55
2-Hexanone	20,000	NA	990,000	1,100,000	2,700,000,000	32,000,000	<520	<590	<730	<550	<550	<550	<540	<480	<510	<540	<380	<460	<560	<650	<610	<540	<550
Isopropylbenzene	91,000	3,200	400,000	1,700,000	5,800,000,000	25,000,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	50 J	<54	<55
Methyl acetate	NA	NA	NA	NA	NA	NA	<52	<59	<73	46 J	41 J	29 J	100	42 J	30 J	<54	<38	<46	<56	<65	90	22 J	30 J
2-Butanone (MEK)	260,000	44,000	54,000,000	29,000,000	67,000,000,000	120,000,000	<520	<590	<730	<550	<550	<550	<540	<480	<510	<540	<380	<460	<560	<650	<610	<540	<550
4-Methyl-2-pentanone	36,000	NA	37,000,000	45,000,000	140,000,000,000	56,000,000	<520	<590	<730	<550	<550	<550	<540	<480	<510	<540	<380	<460	<560	<650	<610	<540	<550
Methyl tertiary butyl ether (MTBE)	800	140,000	9,900,000	25,000,000	200,000,000,000	1,500,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
Methylene chloride	100	30,000	45,000	210,000	6,600,000,000	1,300,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
Styrene	2,700	2,100	250,000	970,000	5,500,000,000	400,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
1,1,2,2-Tetrachloroethane	170	1,600	4,300	10,000	54,000,000	53,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
Tetrachloroethene	100	1,200	11,000	170,000	2,700,000,000	200,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
Toluene	16,000	5,400	330,000	2,800,000	27,000,000,000	50,000,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
1,1,2-Trichloro-1,2,2-Trifluoroethane	9,000,000	1,700	5,100,000	180,000,000	5,100,000,000,000	1,000,000,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
1,2,4-Trichlorobenzene	4,200	5,900	9,600,000	28,000,000	25,000,000,000	990,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
1,1,1-Trichloroethane	4,000	1,800	250,000	3,800,000	67,000,000,000	500,000,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
1,1,2-Trichloroethane	100	6,600	4,600	17,000	190,000,000	180,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
Trichloroethene	100	4,000	1,000	11,000	130,000,000	110,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
Trichlorofluoromethane	52,000	NA	2,800,000	92,000,000	3,800,000,000,000	79,000,000	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
Vinyl chloride	40	260	270	4,200	350,000,000	3,800	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
o - Xylenes	NA	NA	NA	NA	NA	NA	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	<61	<54	<55
Xylenes (total)	5,600	980	6,300,000	46,000,000	290,000,000,000	410,000,000	<100	<120	<150	<110	<110	<110	<110	<96	<100	<110	<76	<92	<110	<130	290	22 J	<110
Methylcyclohexane	NA	NA	NA	NA	NA	NA	<260	<300	<360	<270	<280	<280	<270	<240	<260	<270	<190	<230	<280	<330	<300	<270	<280
m+p - Xylenes	NA	NA	NA	NA	NA	NA	<52	<59	<73	<55	<55	<55	<54	<48	<51	<54	<38	<46	<56	<65	270	22 J	<55

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - VOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-201	HS-SB-201	HS-SB-202	HS-SB-202	HS-SB-202	HS-SB-202	HS-SB-203	HS-SB-203	HS-SB-204	HS-SB-204	HS-SB-205	HS-SB-205	HS-SB-206	HS-SB-206	HS-SB-207	HS-SB-207	HS-SB-208
SAMPLE NAME							HS-SB-201 (2-4)	HS-SB-201 (10-12)	HS-SB-202 (6-8)	HS-SB-202 (6-8)	HS-SB-202 (8-10)	HS-SB-202 (8-10) DUP	HS-SB-203 (8-10)	HS-SB-203 (16-18)	HS-SB-204 (4-6)	HS-SB-204 (10-12)	HS-SB-205 (10-12)	HS-SB-205 (18-20)	HS-SB-206 (10-12)	HS-SB-206 (14-16)	HS-SB-207 (2-4)	HS-SB-207 (8-10)	HS-SB-208 (0-2)
DEPTH (FT)							2 - 4	10 - 12	6 - 8	6 - 8	8 - 10	8 - 10	8 - 10	16 - 18	4 - 6	10 - 12	10 - 12	18 - 20	10 - 12	14 - 16	2 - 4	8 - 10	0 - 2
LAB ID							TF08023-001	TF08023-002	TF06038-001	TF06038-009	TF06038-002	TF06038-003	TF05014-006	TF05014-007	TF06038-013	TF06038-014	TF02011-001	TF02011-002	TF05014-004	TF05014-005	TF05014-001	TF05014-002	TF08023-008
SAMPLE DATE							06/07/2018	06/07/2018	06/05/2018	06/05/2018	06/05/2018	06/05/2018	06/04/2018	06/04/2018	06/06/2018	06/06/2018	06/01/2018	06/01/2018	06/04/2018	06/04/2018	06/04/2018	06/04/2018	06/07/2018
Parameter (UG/KG)																							
Acetone	15,000	34,000	290,000,000	130,000,000	390,000,000,000	23,000,000	<590	<540	<520	<520	<520	<500	<470	<550	<470	<520	<560	<530	<550	<570	<540	<470	<490
Benzene	100	4,000	1,600	13,000	380,000,000	180,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
Bromodichloromethane	1,600	NA	1,200	9,100	84,000,000	110,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
Bromoform	1,600	NA	150,000	900,000	2,800,000,000	820,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
Bromomethane (Methyl bromide)	200	100	860	11,000	330,000,000	320,000	<120	<110	<100	<100	<100	<100	<94	<110	<95	<100	<110	<110	<110	<110	<110	<93	<99
Carbon disulfide	16,000	NA	76,000	1,300,000	47,000,000,000	7,200,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
Carbon tetrachloride	100	760	190	3,500	130,000,000	96,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
Chlorobenzene	2,000	500	120,000	770,000	4,700,000,000	4,300,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
Chloroethane	8,600	22,000	2,900,000	30,000,000	670,000,000,000	2,600,000	<120	<110	<100	<100	<100	<100	<94	<110	<95	<100	<110	<110	<110	<110	<110	<93	<99
Chloroform	1,600	7,000	7,200	45,000	1,300,000,000	1,200,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
Chloromethane (Methyl chloride)	5,200	NA	2,300	40,000	4,900,000,000	1,600,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
Cyclohexane	NA	NA	NA	NA	NA	NA	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
1,2-Dibromo-3-chloropropane (DBCP)	10	NA	220	260	560,000	4,400	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
Dibromochloromethane	1,600	NA	3,900	24,000	130,000,000	110,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
1,2-Dibromoethane (EDB)	20	110	670	1,700	14,000,000	92	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
1,2-Dichlorobenzene	14,000	280	11,000,000	39,000,000	100,000,000,000	19,000,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
1,3-Dichlorobenzene	170	680	26,000	79,000	200,000,000	200,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
1,4-Dichlorobenzene	1,700	360	19,000	77,000	450,000,000	400,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
Dichlorodifluoromethane	95,000	NA	900,000	53,000,000	3,300,000,000,000	52,000,000	<120	<110	<100	<100	<100	<100	<94	<110	<95	<100	<110	<110	<110	<110	<110	<93	<99
1,1-Dichloroethane	18,000	15,000	230,000	2,100,000	33,000,000,000	27,000,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
1,2-Dichloroethane	100	7,200	2,100	6,200	120,000,000	91,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
1,1-Dichloroethene	140	2,600	62	1,100	62,000,000	200,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
cis-1,2-Dichloroethene	1,400	12,000	22,000	180,000	2,300,000,000	2,500,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
trans-1,2-Dichloroethene	2,000	30,000	23,000	280,000	4,700,000,000	3,800,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
1,2-Dichloropropane	100	4,600	4,000	25,000	270,000,000	140,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
Ethylbenzene	1,500	360	87,000	720,000	10,000,000,000	22,000,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
2-Hexanone	20,000	NA	990,000	1,100,000	2,700,000,000	32,000,000	<590	<540	<520	<520	<520	<500	<470	<550	<470	<520	<560	<530	<550	<570	<540	<470	<490
Isopropylbenzene	91,000	3,200	400,000	1,700,000	5,800,000,000	25,000,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
Methyl acetate	NA	NA	NA	NA	NA	NA	24 J	<54	<52	25 JQ	<52	<50	<47	<55	20 J	<52	<56	<53	<55	<57	<54	<47	71
2-Butanone (MEK)	260,000	44,000	54,000,000	29,000,000	67,000,000,000	120,000,000	<590	<540	<520	<520	<520	<500	<470	<550	<470	<520	<560	<530	<550	<570	<540	<470	<490
4-Methyl-2-pentanone	36,000	NA	37,000,000	45,000,000	140,000,000,000	56,000,000	<590	<540	<520	<520	<520	<500	<470	<550	<470	<520	<560	<530	<550	<570	<540	<470	<490
Methyl tertiary butyl ether (MTBE)	800	140,000	9,900,000	25,000,000	200,000,000,000	1,500,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
Methylene chloride	100	30,000	45,000	210,000	6,600,000,000	1,300,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
Styrene	2,700	2,100	250,000	970,000	5,500,000,000	400,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
1,1,2,2-Tetrachloroethane	170	1,600	4,300	10,000	54,000,000	53,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
Tetrachloroethene	100	1,200	11,000	170,000	2,700,000,000	200,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
Toluene	16,000	5,400	330,000	2,800,000	27,000,000,000	50,000,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
1,1,2-Trichloro-1,2,2-Trifluoroethane	9,000,000	1,700	5,100,000	180,000,000	5,100,000,000,000	1,000,000,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
1,2,4-Trichlorobenzene	4,200	5,900	9,600,000	28,000,000	25,000,000,000	990,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
1,1,1-Trichloroethane	4,000	1,800	250,000	3,800,000	67,000,000,000	500,000,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
1,1,2-Trichloroethane	100	6,600	4,600	17,000	190,000,000	180,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
Trichloroethene	100	4,000	1,000	11,000	130,000,000	110,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
Trichlorofluoromethane	52,000	NA	2,800,000	92,000,000	3,800,000,000,000	79,000,000	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
Vinyl chloride	40	260	270	4,200	350,000,000	3,800	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
o - Xylenes	NA	NA	NA	NA	NA	NA	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49
Xylenes (total)	5,600	980	6,300,000	46,000,000	290,000,000,000	410,000,000	<120	<110	<100	<100	<100	<100	<94	<110	<95	<100	<110	<110	<110	<110	<110	<93	<99
Methylcyclohexane	NA	NA	NA	NA	NA	NA	<290	<270	<260	<260	<260	<250	<240	<280	<240	<260	<280	<270	<270	<290	<270	<230	<250
m+p - Xylenes	NA	NA	NA	NA	NA	NA	<59	<54	<52	<52	<52	<50	<47	<55	<47	<52	<56	<53	<55	<57	<54	<47	<49

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - VOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-208	HS-SB-209	HS-SB-210	HS-SB-210	HS-SB-211	HS-SB-211	HS-SB-212	HS-SB-212	HS-SB-212	HS-SB-213	HS-SB-213	HS-SB-214	HS-SB-214	HS-SB-215	HS-SB-215	HS-SB-216	HS-SB-216
SAMPLE NAME							HS-SB-208 (8-10)	HS-SB-209 (4-6)	HS-SB-210 (4-6)	HS-SB-210 (8-10)	HS-SB-211 (2-4)	HS-SB-211 (8-10)	HS-SB-212 (0-2)	HS-SB-212 (0-2) DUP	HS-SB-212 (6-8)	HS-SB-213 (6-8)	HS-SB-213 (18-20)	HS-SB-214 (2-4)	HS-SB-214 (18-20)	HS-SB-215 (0-2)	HS-SB-215 (10-12)	HS-SB-216 (2-4)	HS-SB-216 (8-10)
DEPTH (FT)							8 - 10	4 - 6	4 - 6	8 - 10	2 - 4	8 - 10	0 - 2	0 - 2	6 - 8	6 - 8	18 - 20	2 - 4	18 - 20	0 - 2	10 - 12	2 - 4	8 - 10
LAB ID							TF08023-009	TF06038-008	TF02012-001	TF02012-002	TF06038-011	TF06038-012	TF08023-003	TF08023-004	TF08023-005	TF06038-004	TF06038-005	TF06038-015	TF06038-016	TF08023-006	TF08023-007	TF08023-011	TF08023-012
SAMPLE DATE							06/07/2018	06/05/2018	06/01/2018	06/01/2018	06/06/2018	06/06/2018	06/07/2018	06/07/2018	06/07/2018	06/05/2018	06/05/2018	06/06/2018	06/06/2018	06/07/2018	06/07/2018	06/08/2018	06/08/2018
Parameter (UG/KG)																							
Acetone	15,000	34,000	290,000,000	130,000,000	390,000,000,000	23,000,000	<530	<520	<530	<470	<500	<620	<480	<510	<450	<600	<450	<520	<440	<520	<410	<520	<490
Benzene	100	4,000	1,600	13,000	380,000,000	180,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
Bromodichloromethane	1,600	NA	1,200	9,100	84,000,000	110,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
Bromoform	1,600	NA	150,000	900,000	2,800,000,000	820,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
Bromomethane (Methyl bromide)	200	100	860	11,000	330,000,000	320,000	<110	<100	<110	<95	<100	<120	<95	<100	<89	<120	<91	<100	<88	<100	<82	<100	<97
Carbon disulfide	16,000	NA	76,000	1,300,000	47,000,000,000	7,200,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
Carbon tetrachloride	100	760	190	3,500	130,000,000	96,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
Chlorobenzene	2,000	500	120,000	770,000	4,700,000,000	4,300,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
Chloroethane	8,600	22,000	2,900,000	30,000,000	670,000,000,000	2,600,000	<110	<100	<110	<95	<100	<120	<95	<100	<89	<120	<91	<100	<88	<100	<82	<100	<97
Chloroform	1,600	7,000	7,200	45,000	1,300,000,000	1,200,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
Chloromethane (Methyl chloride)	5,200	NA	2,300	40,000	4,900,000,000	1,600,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
Cyclohexane	NA	NA	NA	NA	NA	NA	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
1,2-Dibromo-3-chloropropane (DBCP)	10	NA	220	260	560,000	4,400	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
Dibromochloromethane	1,600	NA	3,900	24,000	130,000,000	110,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
1,2-Dibromoethane (EDB)	20	110	670	1,700	14,000,000	92	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
1,2-Dichlorobenzene	14,000	280	11,000,000	39,000,000	100,000,000,000	19,000,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
1,3-Dichlorobenzene	170	680	26,000	79,000	200,000,000	200,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
1,4-Dichlorobenzene	1,700	360	19,000	77,000	450,000,000	400,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
Dichlorodifluoromethane	95,000	NA	900,000	53,000,000	3,300,000,000,000	52,000,000	<110	<100	<110	<95	<100	<120	<95	<100	<89	<120	<91	<100	<88	<100	<82	<100	<97
1,1-Dichloroethane	18,000	15,000	230,000	2,100,000	33,000,000,000	27,000,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
1,2-Dichloroethane	100	7,200	2,100	6,200	120,000,000	91,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
1,1-Dichloroethene	140	2,600	62	1,100	62,000,000	200,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
cis-1,2-Dichloroethene	1,400	12,000	22,000	180,000	2,300,000,000	2,500,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
trans-1,2-Dichloroethene	2,000	30,000	23,000	280,000	4,700,000,000	3,800,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
1,2-Dichloropropane	100	4,600	4,000	25,000	270,000,000	140,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
Ethylbenzene	1,500	360	87,000	720,000	10,000,000,000	22,000,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
2-Hexanone	20,000	NA	990,000	1,100,000	2,700,000,000	32,000,000	<530	<520	<530	<470	<500	<620	<480	<510	<450	<600	<450	<520	<440	<520	<410	<520	<490
Isopropylbenzene	91,000	3,200	400,000	1,700,000	5,800,000,000	25,000,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
Methyl acetate	NA	NA	NA	NA	NA	NA	<53	<52	<53	<47	<50	<62	19 J	32 JQ	<45	<60	<45	<52	37 JQ	23 J	<41	<52	<49
2-Butanone (MEK)	260,000	44,000	54,000,000	29,000,000	67,000,000,000	120,000,000	<530	<520	<530	<470	<500	<620	<480	<510	<450	<600	<450	<520	<440	<520	<410	<520	<490
4-Methyl-2-pentanone	36,000	NA	37,000,000	45,000,000	140,000,000,000	56,000,000	<530	<520	<530	<470	<500	<620	<480	<510	<450	<600	<450	<520	<440	<520	<410	<520	<490
Methyl tertiary butyl ether (MTBE)	800	140,000	9,900,000	25,000,000	200,000,000,000	1,500,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
Methylene chloride	100	30,000	45,000	210,000	6,600,000,000	1,300,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
Styrene	2,700	2,100	250,000	970,000	5,500,000,000	400,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
1,1,2,2-Tetrachloroethane	170	1,600	4,300	10,000	54,000,000	53,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
Tetrachloroethene	100	1,200	11,000	170,000	2,700,000,000	200,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
Toluene	16,000	5,400	330,000	2,800,000	27,000,000,000	50,000,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
1,1,2-Trichloro-1,2,2-Trifluoroethane	9,000,000	1,700	5,100,000	180,000,000	5,100,000,000,000	1,000,000,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
1,2,4-Trichlorobenzene	4,200	5,900	9,600,000	28,000,000	25,000,000,000	990,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
1,1,1-Trichloroethane	4,000	1,800	250,000	3,800,000	67,000,000,000	500,000,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
1,1,2-Trichloroethane	100	6,600	4,600	17,000	190,000,000	180,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
Trichloroethene	100	4,000	1,000	11,000	130,000,000	110,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
Trichlorofluoromethane	52,000	NA	2,800,000	92,000,000	3,800,000,000,000	79,000,000	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
Vinyl chloride	40	260	270	4,200	350,000,000	3,800	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
o - Xylenes	NA	NA	NA	NA	NA	NA	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49
Xylenes (total)	5,600	980	6,300,000	46,000,000	290,000,000,000	410,000,000	<110	<100	<110	<95	<100	<120	<95	<100	<89	<120	<91	<100	<88	<100	<82	<100	<97
Methylcyclohexane	NA	NA	NA	NA	NA	NA	<270	<260	<260	<240	<250	<310	<240	<250	<220	<300	<230	<260	<220	<260	<200	<260	<240
m+p - Xylenes	NA	NA	NA	NA	NA	NA	<53	<52	<53	<47	<50	<62	<48	<51	<45	<60	<45	<52	<44	<52	<41	<52	<49

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - VOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-217	HS-SB-217	HS-SB-218	HS-SB-218	HS-SB-219	HS-SB-219	HS-SB-220	HS-SB-220	HS-SB-221	HS-SB-221	HS-SB-222	HS-SB-222	HS-SB-223	HS-SB-223	HS-SB-224	HS-SB-224	HS-SB-225
SAMPLE NAME							HS-SB-217 (2-4)	HS-SB-217 (12-14)	HS-SB-218 (2-4)	HS-SB-218 (14-16)	HS-SB-219 (4-6)	HS-SB-219 (10-12)	HS-SB-220 (2-4)	HS-SB-220 (16-18)	HS-SB-221 (4-6)	HS-SB-221 (6-8)	HS-SB-222 (2-4)	HS-SB-222 (6-8)	HS-SB-223 (2-4)	HS-SB-223 (10-12)	HS-SB-224 (8-10)	HS-SB-224 (10-12)	HS-SB-225 (2-4)
DEPTH (FT)							2 - 4	12 - 14	2 - 4	14 - 16	4 - 6	10 - 12	2 - 4	16 - 18	4 - 6	6 - 8	2 - 4	6 - 8	2 - 4	10 - 12	8 - 10	10 - 12	2 - 4
LAB ID							TF08023-015	TF08023-017	TF06038-006	TF06038-007	TF08023-018	TF08023-019	TF12017-004	TF12017-005	TF12017-006	TF12017-007	TF12017-002	TF12017-003	TF08023-013	TF08023-014	TF13021-012	TF13021-013	TF12017-008
SAMPLE DATE							06/08/2018	06/08/2018	06/05/2018	06/05/2018	06/08/2018	06/08/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/08/2018	06/08/2018	06/12/2018	06/12/2018	06/11/2018
Parameter (UG/KG)																							
Acetone	15,000	34,000	290,000,000	130,000,000	390,000,000,000	23,000,000	<530	<540	<490	<490	<500	<550	<460	<500	<450	<520	<530	<450	<480	<530	<490	<490	<650
Benzene	100	4,000	1,600	13,000	380,000,000	180,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
Bromodichloromethane	1,600	NA	1,200	9,100	84,000,000	110,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
Bromoform	1,600	NA	150,000	900,000	2,800,000,000	820,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
Bromomethane (Methyl bromide)	200	100	860	11,000	330,000,000	320,000	<110	<110	<97	<98	<100	<110	<91	<99	<89	<100	<110	<90	<95	<110	<98	<99	<130
Carbon disulfide	16,000	NA	76,000	1,300,000	47,000,000,000	7,200,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
Carbon tetrachloride	100	760	190	3,500	130,000,000	96,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
Chlorobenzene	2,000	500	120,000	770,000	4,700,000,000	4,300,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
Chloroethane	8,600	22,000	2,900,000	30,000,000	670,000,000,000	2,600,000	<110	<110	<97	<98	<100	<110	<91	<99	<89	<100	<110	<90	<95	<110	<98	<99	<130
Chloroform	1,600	7,000	7,200	45,000	1,300,000,000	1,200,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
Chloromethane (Methyl chloride)	5,200	NA	2,300	40,000	4,900,000,000	1,600,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
Cyclohexane	NA	NA	NA	NA	NA	NA	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
1,2-Dibromo-3-chloropropane (DBCP)	10	NA	220	260	560,000	4,400	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
Dibromochloromethane	1,600	NA	3,900	24,000	130,000,000	110,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
1,2-Dibromoethane (EDB)	20	110	670	1,700	14,000,000	92	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
1,2-Dichlorobenzene	14,000	280	11,000,000	39,000,000	100,000,000,000	19,000,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
1,3-Dichlorobenzene	170	680	26,000	79,000	200,000,000	200,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
1,4-Dichlorobenzene	1,700	360	19,000	77,000	450,000,000	400,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
Dichlorodifluoromethane	95,000	NA	900,000	53,000,000	3,300,000,000,000	52,000,000	<110	<110	<97	<98	<100	<110	<91	<99	<89	<100	<110	<90	<95	<110	<98	<99	<130
1,1-Dichloroethane	18,000	15,000	230,000	2,100,000	33,000,000,000	27,000,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
1,2-Dichloroethane	100	7,200	2,100	6,200	120,000,000	91,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
1,1-Dichloroethene	140	2,600	62	1,100	62,000,000	200,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
cis-1,2-Dichloroethene	1,400	12,000	22,000	180,000	2,300,000,000	2,500,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
trans-1,2-Dichloroethene	2,000	30,000	23,000	280,000	4,700,000,000	3,800,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
1,2-Dichloropropane	100	4,600	4,000	25,000	270,000,000	140,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
Ethylbenzene	1,500	360	87,000	720,000	10,000,000,000	22,000,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
2-Hexanone	20,000	NA	990,000	1,100,000	2,700,000,000	32,000,000	<530	<540	<490	<490	<500	<550	<460	<500	<450	<520	<530	<450	<480	<530	<490	<490	<650
Isopropylbenzene	91,000	3,200	400,000	1,700,000	5,800,000,000	25,000,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
Methyl acetate	NA	NA	NA	NA	NA	NA	50 J	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	29 J	<53	81	<49	100
2-Butanone (MEK)	260,000	44,000	54,000,000	29,000,000	67,000,000,000	120,000,000	<530	<540	<490	<490	<500	<550	<460	<500	<450	<520	<530	<450	<480	<530	<490	<490	<650
4-Methyl-2-pentanone	36,000	NA	37,000,000	45,000,000	140,000,000,000	56,000,000	<530	<540	<490	<490	<500	<550	<460	<500	<450	<520	<530	<450	<480	<530	<490	<490	<650
Methyl tertiary butyl ether (MTBE)	800	140,000	9,900,000	25,000,000	200,000,000,000	1,500,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
Methylene chloride	100	30,000	45,000	210,000	6,600,000,000	1,300,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
Styrene	2,700	2,100	250,000	970,000	5,500,000,000	400,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
1,1,2,2-Tetrachloroethane	170	1,600	4,300	10,000	54,000,000	53,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
Tetrachloroethene	100	1,200	11,000	170,000	2,700,000,000	200,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
Toluene	16,000	5,400	330,000	2,800,000	27,000,000,000	50,000,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
1,1,2-Trichloro-1,2,2-Trifluoroethane	9,000,000	1,700	5,100,000	180,000,000	5,100,000,000,000	1,000,000,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
1,2,4-Trichlorobenzene	4,200	5,900	9,600,000	28,000,000	25,000,000,000	990,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	26 J
1,1,1-Trichloroethane	4,000	1,800	250,000	3,800,000	67,000,000,000	500,000,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
1,1,2-Trichloroethane	100	6,600	4,600	17,000	190,000,000	180,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
Trichloroethene	100	4,000	1,000	11,000	130,000,000	110,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
Trichlorofluoromethane	52,000	NA	2,800,000	92,000,000	3,800,000,000,000	79,000,000	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
Vinyl chloride	40	260	270	4,200	350,000,000	3,800	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
o - Xylenes	NA	NA	NA	NA	NA	NA	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	<65
Xylenes (total)	5,600	980	6,300,000	46,000,000	290,000,000,000	410,000,000	<110	<110	<97	<98	<100	<110	<91	<99	<89	<100	<110	<90	<95	<110	<98	<99	27 J
Methylcyclohexane	NA	NA	NA	NA	NA	NA	<260	<270	<240	<250	<250	<270	<230	<250	<220	<260	<270	<230	<240	<270	<240	<250	<330
m+p - Xylenes	NA	NA	NA	NA	NA	NA	<53	<54	<49	<49	<50	<55	<46	<50	<45	<52	<53	<45	<48	<53	<49	<49	27 J

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - VOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-225
SAMPLE NAME							HS-SB-225 (18-20)
DEPTH (FT)							18 - 20
LAB ID							TF12017-009
SAMPLE DATE							06/11/2018
Parameter (UG/KG)							
Acetone	15,000	34,000	290,000,000	130,000,000	390,000,000,000	23,000,000	<570
Benzene	100	4,000	1,600	13,000	380,000,000	180,000	<57
Bromodichloromethane	1,600	NA	1,200	9,100	84,000,000	110,000	<57
Bromoform	1,600	NA	150,000	900,000	2,800,000,000	820,000	<57
Bromomethane (Methyl bromide)	200	100	860	11,000	330,000,000	320,000	<110
Carbon disulfide	16,000	NA	76,000	1,300,000	47,000,000,000	7,200,000	<57
Carbon tetrachloride	100	760	190	3,500	130,000,000	96,000	<57
Chlorobenzene	2,000	500	120,000	770,000	4,700,000,000	4,300,000	<57
Chloroethane	8,600	22,000	2,900,000	30,000,000	670,000,000,000	2,600,000	<110
Chloroform	1,600	7,000	7,200	45,000	1,300,000,000	1,200,000	<57
Chloromethane (Methyl chloride)	5,200	NA	2,300	40,000	4,900,000,000	1,600,000	<57
Cyclohexane	NA	NA	NA	NA	NA	NA	<57
1,2-Dibromo-3-chloropropane (DBCP)	10	NA	220	260	560,000	4,400	<57
Dibromochloromethane	1,600	NA	3,900	24,000	130,000,000	110,000	<57
1,2-Dibromoethane (EDB)	20	110	670	1,700	14,000,000	92	<57
1,2-Dichlorobenzene	14,000	280	11,000,000	39,000,000	100,000,000,000	19,000,000	<57
1,3-Dichlorobenzene	170	680	26,000	79,000	200,000,000	200,000	<57
1,4-Dichlorobenzene	1,700	360	19,000	77,000	450,000,000	400,000	<57
Dichlorodifluoromethane	95,000	NA	900,000	53,000,000	3,300,000,000,000	52,000,000	<110
1,1-Dichloroethane	18,000	15,000	230,000	2,100,000	33,000,000,000	27,000,000	<57
1,2-Dichloroethane	100	7,200	2,100	6,200	120,000,000	91,000	<57
1,1-Dichloroethene	140	2,600	62	1,100	62,000,000	200,000	<57
cis-1,2-Dichloroethene	1,400	12,000	22,000	180,000	2,300,000,000	2,500,000	<57
trans-1,2-Dichloroethene	2,000	30,000	23,000	280,000	4,700,000,000	3,800,000	<57
1,2-Dichloropropane	100	4,600	4,000	25,000	270,000,000	140,000	<57
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	<57
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	<57
Ethylbenzene	1,500	360	87,000	720,000	10,000,000,000	22,000,000	<57
2-Hexanone	20,000	NA	990,000	1,100,000	2,700,000,000	32,000,000	<570
Isopropylbenzene	91,000	3,200	400,000	1,700,000	5,800,000,000	25,000,000	<57
Methyl acetate	NA	NA	NA	NA	NA	NA	<57
2-Butanone (MEK)	260,000	44,000	54,000,000	29,000,000	67,000,000,000	120,000,000	130 J
4-Methyl-2-pentanone	36,000	NA	37,000,000	45,000,000	140,000,000,000	56,000,000	<570
Methyl tertiary butyl ether (MTBE)	800	140,000	9,900,000	25,000,000	200,000,000,000	1,500,000	<57
Methylene chloride	100	30,000	45,000	210,000	6,600,000,000	1,300,000	<57
Styrene	2,700	2,100	250,000	970,000	5,500,000,000	400,000	<57
1,1,2,2-Tetrachloroethane	170	1,600	4,300	10,000	54,000,000	53,000	<57
Tetrachloroethene	100	1,200	11,000	170,000	2,700,000,000	200,000	<57
Toluene	16,000	5,400	330,000	2,800,000	27,000,000,000	50,000,000	<57
1,1,2-Trichloro-1,2,2-Trifluoroethane	9,000,000	1,700	5,100,000	180,000,000	5,100,000,000,000	1,000,000,000	<57
1,2,4-Trichlorobenzene	4,200	5,900	9,600,000	28,000,000	25,000,000,000	990,000	<57
1,1,1-Trichloroethane	4,000	1,800	250,000	3,800,000	67,000,000,000	500,000,000	<57
1,1,2-Trichloroethane	100	6,600	4,600	17,000	190,000,000	180,000	<57
Trichloroethene	100	4,000	1,000	11,000	130,000,000	110,000	<57
Trichlorofluoromethane	52,000	NA	2,800,000	92,000,000	3,800,000,000,000	79,000,000	<57
Vinyl chloride	40	260	270	4,200	350,000,000	3,800	<57
o - Xylenes	NA	NA	NA	NA	NA	NA	<57
Xylenes (total)	5,600	980	6,300,000	46,000,000	290,000,000,000	410,000,000	<110
Methylcyclohexane	NA	NA	NA	NA	NA	NA	<280
m+p - Xylenes	NA	NA	NA	NA	NA	NA	<57

TABLE 2
SUMMARY OF SOIL SAMPLE ANALYSIS - SVOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-123	HS-SB-123	HS-SB-123	HS-SB-124	HS-SB-124	HS-SB-124	HS-SB-124	HS-SB-125	HS-SB-125	HS-SB-125	HS-SB-125	HS-SB-128	HS-SB-128	HS-SB-128	HS-SB-129	HS-SB-129	HS-SB-129
SAMPLE NAME							HS-SB-123 (6-7)	HB-SB-123 (7-8)	HS-SB-123 (12-13)	HS-SB-124 (6-7)	HS-SB-124 (6-7) DUP	HS-SB-124 (7-8)	HS-SB-124 (9-10)	HB-SB-125 (1-2)	HB-SB-125 (1-2) DUP	HB-SB-125 (8-9)	HB-SB-125 (11-12)	HB-SB-128 (5-6)	HB-SB-128 (6-7)	HB-SB-128 (14-15)	HS-SB-129 (7-8)	HS-SB-129 (8-9)	HS-SB-129 (10-11)
DEPTH (FT)							6 - 7	7 - 8	12 - 13	6 - 7	6 - 7	7 - 8	9 - 10	1 - 2	1 - 2	8 - 9	11 - 12	5 - 6	6 - 7	14 - 15	7 - 8	8 - 9	10 - 11
LAB ID							TF13021-001	TF13021-002	TF13021-003	TF13021-008	TF13021-009	TF13021-010	TF13021-011	TF13021-015	TF13021-016	TF13021-017	TF13021-018	TF13021-019	TF13021-020	TF13021-021	TF13021-005	TF13021-006	TF13021-007
SAMPLE DATE							06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/13/2018	06/13/2018	06/13/2018	06/13/2018	06/13/2018	06/13/2018	06/13/2018	06/12/2018	06/12/2018	06/12/2018
Parameter (UG/KG)																							
Acenaphthene	300,000	8,700	190,000,000	81,000,000	14,000,000,000	41,000,000	<15	<14	<16	<15	<15	<15	<15	<14	<15	<15	<16	<14	<14	<15	<16	<15	<15
Acenaphthylene	5,900	NA	1,600,000	2,200,000	2,300,000,000	1,600,000	<15	<14	<16	<15	<15	<15	<15	<14	<15	<15	18	<14	<14	<15	<16	<15	<15
Acetophenone	30,000	NA	120,000,000	44,000,000	33,000,000,000	47,000,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
Anthracene	41,000	NA	1,000,000,000	1,400,000,000	67,000,000,000	230,000,000	<15	<14	<16	<15	<15	<15	<15	<14	<15	<15	<16	<14	<14	<15	<16	<15	<15
Atrazine	60	150	NA	NA	NA	71,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
1,2-Diphenylhydrazine(as azobenzene)	4,200	NA	6,100,000	630,000	100,000,000	140,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
Benzidine	1,000	1,000	NA	NA	46,000	1,000	<150	<140	<160	<150	<150	<150	<150	<140	<150	<150	<160	<140	<140	<150	<160	<150	<150
Benzo(a)anthracene	NA	NA	NA	NA	NA	20,000	<15	<14	<16	<15	<15	<15	<15	<14	<15	<15	<16	<14	<14	<15	<16	<15	<15
Benzo(a)pyrene	NA	NA	NA	NA	1,500,000	2,000	<15	<14	<16	<15	<15	<15	<15	<14	<15	<15	<16	<14	<14	<15	<16	<15	<15
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	20,000	<15	<14	<16	<15	<15	<15	<15	<14	<15	<15	<16	<14	<14	<15	<16	<15	<15
Benzo(g,h,i)perylene	NA	NA	NA	NA	800,000,000	2,500,000	<15	<14	<16	<15	<15	<15	<15	<14	<15	<15	<16	<14	<14	<15	<16	<15	<15
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	200,000	<15	<14	<16	<15	<15	<15	<15	<14	<15	<15	<16	<14	<14	<15	<16	<15	<15
bis(2-Chloroethyl)ether	100	100	8,300	3,800	9,400,000	13,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	700,000,000	2,800,000	<75	<75	73 BJ	<78	57 BJ	<75	61 BJ	<73	<75	<79	<82	<70	<71	<78	180 B	<76	71 BJ
Butyl benzyl phthalate	2,200,000	120,000	NA	NA	47,000,000,000	36,000,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
Caprolactam	120,000	NA	NA	NA	670,000,000	53,000,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
Carbazole	9,400	1,100	NA	NA	62,000,000	530,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
4-Chloro-3-methyl phenol	5,800	280	NA	NA	NA	4,500,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
2-Chlorophenol	900	360	430,000	960,000	1,200,000,000	1,400,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
2-Chloronaphthalene	620,000	NA	NA	NA	NA	56,000,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
Chrysene	NA	NA	NA	NA	NA	2,000,000	<15	<14	<16	<15	<15	<15	<15	<14	<15	<15	<16	<14	<14	<15	<16	<15	<15
Di-n-butyl phthalate	960,000	11,000	NA	NA	3,300,000,000	27,000,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
Di-n-octylphthalate	100,000,000	NA	NA	NA	31,000,000,000	6,900,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
Dibenzo(a,h)anthracene	NA	NA	NA	NA	NA	2,000	<15	<14	<16	<15	<15	<15	<15	<14	<15	<15	<16	<14	<14	<15	<16	<15	<15
Dibenzofuran	NA	1,700	2,000,000	130,000	6,700,000	NA	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
3,3'-Dichlorobenzidine	2,000	2,000	NA	NA	6,500,000	6,600	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
2,4-Dichlorophenol	1,500	330	NA	NA	5,100,000,000	660,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
Diethylphthalate	110,000	2,200	NA	NA	3,300,000,000	170,000,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
Dimethyl phthalate	1,500,000	NA	NA	NA	3,300,000,000	1,000,000,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
2,4-Dimethylphenol	7,400	7,600	NA	NA	4,700,000,000	11,000,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
4,6-Dinitro-2-methylphenol	830	NA	NA	NA	130,000,000	79,000	<370	<370	<400	<380	<370	<370	<380	<360	<370	<390	<400	<340	<350	<380	<400	<370	<380
2,4-Dinitrotoluene	430	NA	NA	NA	16,000,000	48,000	<150	<140	<160	<150	<150	<150	<150	<140	<150	<150	<160	<140	<140	<150	<160	<150	<150
Fluoranthene	730,000	5,500	1,000,000,000	740,000,000	9,300,000,000	46,000,000	<15	<14	<16	<15	<15	<15	<15	<14	<15	<15	<16	<14	<14	<15	<16	<15	<15
Fluorene	390,000	5,300	580,000,000	130,000,000	9,300,000,000	27,000,000	<15	<14	<16	<15	<15	<15	<15	<14	<15	<15	<16	<14	<14	<15	<16	<15	<15
Hexachlorobenzene	1,800	350	41,000	17,000	6,800,000	8,900	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
Hexachlorobutadiene	26,000	91	130,000	130,000	140,000,000	100,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
Hexachlorocyclopentadiene	320,000	NA	30,000	50,000	13,000,000	2,300,000	<370	<370	<400	<380	<370	<370	<380	<360	<370	<390	<400	<340	<350	<380	<400	<370	<380
Hexachloroethane	430	1,800	40,000	550,000	230,000,000	230,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
Indeno(1,2,3-c,d)pyrene	NA	NA	NA	NA	NA	20,000	<15	<14	<16	<15	<15	<15	<15	<14	<15	<15	<16	<14	<14	<15	<16	<15	<15
Isophorone	15,000	26,000	NA	NA	12,000,000,000	4,800,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
2-Methylnaphthalene	57,000	4,200	2,700,000	1,500,000	670,000,000	8,100,000	<15	<14	<16	<15	<15	<15	<15	<14	<15	<15	<16	<14	<14	<15	26	<15	<15
2-Methylphenol	NA	NA	NA	NA	NA	NA	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
3+4-Methylphenol	NA	NA	NA	NA	NA	NA	<150	<140	<160	<150	<150	<150	<150	<140	<150	<150	<160	<140	<140	<150	<160	<150	<150
Naphthalene	35,000	730	250,000	300,000	200,000,000	16,000,000	<15	<14	<16	<15	<15	<15	<15	<14	<15	<15	<16	<14	<14	<15	<16	19	<15
Nitrobenzene	330	3,600	91,000	54,000	47,000,000	100,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
2-Nitrophenol	400	NA	NA	NA	NA	630,000	<150	<140	<160	<150	<150	<150	<150	<140	<150	<150	<160	<140	<140	<150	<160	<150	<150
N-Nitrosodi-n-propylamine	330	NA	NA	NA	1,600,000	1,200	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
N-Nitrosodiphenylamine (Diphenylamine)	5,400	NA	NA	NA	2,200,000,000	1,700,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
Pentachlorophenol	22	NA	NA	NA	100,000,000	90,000	<370	<370	<400	<380	<370	<370	<380	<360	<370	<390	<400	<340	<350	<380	<400	<370	<380
Phenanthrene	56,000	2,100	2,800,000	160,000	6,700,000	1,600,000	<15	<14	<16	<15	<15	<15	<15	<14	<15	<15	<16	<14	<14	<15	10 J	<15	<15
Phenol	88,000	9,000	NA	NA	40,000,000,000	40,000,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
Pyrene	480,000	NA	1,000,000,000	650,000,000	6,700,000,000	29,000,000	<15	<14	<16	<15	<15	<15	<15	<14	<15	<15	<16	<14	<14	<15	<16	<15	<15
2,4,5-Trichlorophenol	39,000	NA	NA	NA	23,000,000,000	23,000,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77
2,4,6-Trichlorophenol	2,400	330	NA	NA	1,000,000,000	710,000	<75	<75	<82	<78	<75	<75	<78	<73	<75	<79	<82	<70	<71	<78	<82	<76	<77

TABLE 2
SUMMARY OF SOIL SAMPLE ANALYSIS - SVOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-201	HS-SB-201	HS-SB-202	HS-SB-202	HS-SB-202	HS-SB-202	HS-SB-203	HS-SB-203	HS-SB-204	HS-SB-204	HS-SB-205	HS-SB-205	HS-SB-206	HS-SB-206	HS-SB-207	HS-SB-207	HS-SB-208
SAMPLE NAME							HS-SB-201 (2-4)	HS-SB-201 (10-12)	HS-SB-202 (6-8)	HS-SB-202 (6-8)	HS-SB-202 (8-10)	HS-SB-202 (8-10) DUP	HS-SB-203 (8-10)	HS-SB-203 (16-18)	HS-SB-204 (4-6)	HS-SB-204 (10-12)	HS-SB-205 (10-12)	HS-SB-205 (18-20)	HS-SB-206 (10-12)	HS-SB-206 (14-16)	HS-SB-207 (2-4)	HS-SB-207 (8-10)	HS-SB-208 (0-2)
DEPTH (FT)							2 - 4	10 - 12	6 - 8	6 - 8	8 - 10	8 - 10	8 - 10	16 - 18	4 - 6	10 - 12	10 - 12	18 - 20	10 - 12	14 - 16	2 - 4	8 - 10	0 - 2
LAB ID							TF08023-001	TF08023-002	TF06038-001	TF06038-009	TF06038-002	TF06038-003	TF05014-006	TF05014-007	TF06038-013	TF06038-014	TF02011-001	TF02011-002	TF05014-004	TF05014-005	TF05014-001	TF05014-002	TF08023-008
SAMPLE DATE							06/07/2018	06/07/2018	06/05/2018	06/05/2018	06/05/2018	06/05/2018	06/04/2018	06/04/2018	06/06/2018	06/06/2018	06/01/2018	06/01/2018	06/04/2018	06/04/2018	06/04/2018	06/04/2018	06/07/2018
Parameter (UG/KG)																							
Acenaphthene	300,000	8,700	190,000,000	81,000,000	14,000,000,000	41,000,000	<15	<13	<14	<15	<13	<13	<14	<13	<14	<14	<14	<13	<15	<16	<15	<15	<14
Acenaphthylene	5,900	NA	1,600,000	2,200,000	2,300,000,000	1,600,000	<15	<13	<14	<15	<13	<13	<14	<13	<14	<14	<14	<13	<15	<16	<15	<15	<14
Acetophenone	30,000	NA	120,000,000	44,000,000	33,000,000,000	47,000,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
Anthracene	41,000	NA	1,000,000,000	1,400,000,000	67,000,000,000	230,000,000	<15	<13	<14	<15	<13	<13	<14	<13	<14	<14	<14	<13	<15	<16	<15	<15	<14
Atrazine	60	150	NA	NA	NA	71,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
1,2-Diphenylhydrazine(as azobenzene)	4,200	NA	6,100,000	630,000	100,000,000	140,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
Benzidine	1,000	1,000	NA	NA	46,000	1,000	<150	<130	<140	<150	<130	<130	<140	<130	<140	<140	<140	<130	<150	<160	<150	<150	<140
Benzo(a)anthracene	NA	NA	NA	NA	NA	20,000	<15	<13	<14	<15	<13	<13	<14	<13	<14	<14	<14	<13	<15	<16	<15	<15	<14
Benzo(a)pyrene	NA	NA	NA	NA	1,500,000	2,000	<15	<13	<14	<15	<13	<13	<14	<13	<14	<14	<14	<13	<15	<16	<15	<15	15
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	20,000	<15	<13	<14	<15	<13	<13	<14	<13	<14	<14	<14	<13	<15	<16	<15	<15	26
Benzo(g,h,i)perylene	NA	NA	NA	NA	800,000,000	2,500,000	<15	<13	<14	<15	<13	<13	<14	<13	<14	<14	<14	<13	<15	<16	<15	<15	14
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	200,000	<15	<13	<14	<15	<13	<13	<14	<13	<14	<14	<14	<13	<15	<16	<15	<15	<14
bis(2-Chloroethyl)ether	100	100	8,300	3,800	9,400,000	13,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	700,000,000	2,800,000	16 BJ	<66	37 J	<79	34 J	31 J	<73	<67	52 BJ	50 BJ	40 BJ	39 BJ	<77	<80	<79	<76	110 B
Butyl benzyl phthalate	2,200,000	120,000	NA	NA	47,000,000,000	36,000,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
Caprolactam	120,000	NA	NA	NA	670,000,000	53,000,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
Carbazole	9,400	1,100	NA	NA	62,000,000	530,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
4-Chloro-3-methyl phenol	5,800	280	NA	NA	NA	4,500,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
2-Chlorophenol	900	360	430,000	960,000	1,200,000,000	1,400,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
2-Chloronaphthalene	620,000	NA	NA	NA	NA	56,000,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
Chrysene	NA	NA	NA	NA	NA	2,000,000	<15	<13	<14	<15	<13	<13	<14	<13	<14	<14	<14	<13	<15	<16	<15	<15	<14
Di-n-butyl phthalate	960,000	11,000	NA	NA	3,300,000,000	27,000,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
Di-n-octylphthalate	100,000,000	NA	NA	NA	31,000,000,000	6,900,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
Dibenzo(a,h)anthracene	NA	NA	NA	NA	NA	2,000	<15	<13	<14	<15	<13	<13	<14	<13	<14	<14	<14	<13	<15	<16	<15	<15	<14
Dibenzofuran	NA	1,700	2,000,000	130,000	6,700,000	NA	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
3,3'-Dichlorobenzidine	2,000	2,000	NA	NA	6,500,000	6,600	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
2,4-Dichlorophenol	1,500	330	NA	NA	5,100,000,000	660,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
Diethylphthalate	110,000	2,200	NA	NA	3,300,000,000	170,000,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
Dimethyl phthalate	1,500,000	NA	NA	NA	3,300,000,000	1,000,000,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
2,4-Dimethylphenol	7,400	7,600	NA	NA	4,700,000,000	11,000,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
4,6-Dinitro-2-methylphenol	830	NA	NA	NA	130,000,000	79,000	<390	<320	<360	<390	<340	<330	<360	<330	<370	<350	<340	<340	<380	<400	<390	<370	<360
2,4-Dinitrotoluene	430	NA	NA	NA	16,000,000	48,000	<150	<130	<140	<150	<130	<130	<140	<130	<140	<140	<140	<130	<150	<160	<150	<150	<140
Fluoranthene	730,000	5,500	1,000,000,000	740,000,000	9,300,000,000	46,000,000	<15	<13	<14	<15	<13	<13	<14	<13	<14	<14	<14	<13	<15	<16	<15	<15	31
Fluorene	390,000	5,300	580,000,000	130,000,000	9,300,000,000	27,000,000	<15	<13	<14	<15	<13	<13	<14	<13	<14	<14	<14	<13	<15	<16	<15	<15	<14
Hexachlorobenzene	1,800	350	41,000	17,000	6,800,000	8,900	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
Hexachlorobutadiene	26,000	91	130,000	130,000	140,000,000	100,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
Hexachlorocyclopentadiene	320,000	NA	30,000	50,000	13,000,000	2,300,000	<390	<320	<360	<390	<340	<330	<360	<330	<370	<350	<340	<340	<380	<400	<390	<370	<360
Hexachloroethane	430	1,800	40,000	550,000	230,000,000	230,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
Indeno(1,2,3-c,d)pyrene	NA	NA	NA	NA	NA	20,000	13 J	<13	<14	<15	<13	<13	<14	<13	<14	<14	<14	<13	<15	<16	<15	<15	16
Isophorone	15,000	26,000	NA	NA	12,000,000,000	4,800,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
2-Methylnaphthalene	57,000	4,200	2,700,000	1,500,000	670,000,000	8,100,000	<15	<13	<14	<15	<13	<13	<14	<13	<14	<14	<14	<13	<15	<16	<15	<15	<14
2-Methylphenol	NA	NA	NA	NA	NA	NA	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
3+4-Methylphenol	NA	NA	NA	NA	NA	NA	<150	<130	<140	<150	<130	<130	<140	<130	<140	<140	<140	<130	<150	<160	<150	<150	<140
Naphthalene	35,000	730	250,000	300,000	200,000,000	16,000,000	<15	<13	<14	<15	<13	<13	<14	<13	<14	<14	<14	<13	<15	<16	<15	<15	<14
Nitrobenzene	330	3,600	91,000	54,000	47,000,000	100,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
2-Nitrophenol	400	NA	NA	NA	NA	630,000	<150	<130	<140	<150	<130	<130	<140	<130	<140	<140	<140	<130	<150	<160	<150	<150	<140
N-Nitrosodi-n-propylamine	330	NA	NA	NA	1,600,000	1,200	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
N-Nitrosodiphenylamine (Diphenylamine)	5,400	NA	NA	NA	2,200,000,000	1,700,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
Pentachlorophenol	22	NA	NA	NA	100,000,000	90,000	<390	<320	<360	<390	<340	<330	<360	<330	<370	<350	<340	<340	<380	<400	<390	<370	<360
Phenanthrene	56,000	2,100	2,800,000	160,000	6,700,000	1,600,000	<15	<13	<14	<15	<13	<13	<14	<13	<14	<14	<14	<13	<15	<16	<15	<15	21
Phenol	88,000	9,000	NA	NA	40,000,000,000	40,000,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
Pyrene	480,000	NA	1,000,000,000	650,000,000	6,700,000,000	29,000,000	<15	<13	<14	<15	<13	<13	<14	<13	<14	<14	<14	<13	<15	<16	<15	<15	23
2,4,5-Trichlorophenol	39,000	NA	NA	NA	23,000,000,000	23,000,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72
2,4,6-Trichlorophenol	2,400	330	NA	NA	1,000,000,000	710,000	<79	<66	<72	<79	<69	<68	<73	<67	<74	<70	<70	<68	<77	<80	<79	<76	<72

TABLE 2
SUMMARY OF SOIL SAMPLE ANALYSIS - SVOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-208	HS-SB-209	HS-SB-210	HS-SB-210	HS-SB-211	HS-SB-211	HS-SB-212	HS-SB-212	HS-SB-212	HS-SB-213	HS-SB-213	HS-SB-214	HS-SB-214	HS-SB-215	HS-SB-215	HS-SB-216	HS-SB-216
SAMPLE NAME							HS-SB-208 (8-10)	HS-SB-209 (4-6)	HS-SB-210 (4-6)	HS-SB-210 (8-10)	HS-SB-211 (2-4)	HS-SB-211 (8-10)	HS-SB-212 (0-2)	HS-SB-212 (0-2) DUP	HS-SB-212 (6-8)	HS-SB-213 (6-8)	HS-SB-213 (18-20)	HS-SB-214 (2-4)	HS-SB-214 (18-20)	HS-SB-215 (0-2)	HS-SB-215 (10-12)	HS-SB-216 (2-4)	HS-SB-216 (8-10)
DEPTH (FT)							8 - 10	4 - 6	4 - 6	8 - 10	2 - 4	8 - 10	0 - 2	0 - 2	6 - 8	6 - 8	18 - 20	2 - 4	18 - 20	0 - 2	10 - 12	2 - 4	8 - 10
LAB ID							TF08023-009	TF06038-008	TF02012-001	TF02012-002	TF06038-011	TF06038-012	TF08023-003	TF08023-004	TF08023-005	TF06038-004	TF06038-005	TF06038-015	TF06038-016	TF08023-006	TF08023-007	TF08023-011	TF08023-012
SAMPLE DATE							06/07/2018	06/05/2018	06/01/2018	06/01/2018	06/06/2018	06/06/2018	06/07/2018	06/07/2018	06/07/2018	06/05/2018	06/05/2018	06/06/2018	06/06/2018	06/07/2018	06/07/2018	06/08/2018	06/08/2018
Parameter (UG/KG)																							
Acenaphthene	300,000	8,700	190,000,000	81,000,000	14,000,000,000	41,000,000	<13	<15	<15	<15	<15	<16	<13	<13	<13	<15	<14	<15	<15	<14	<14	<15	<14
Acenaphthylene	5,900	NA	1,600,000	2,200,000	2,300,000,000	1,600,000	<13	<15	<15	<15	<15	<16	<13	<13	<13	<15	<14	<15	<15	<14	<14	<15	<14
Acetophenone	30,000	NA	120,000,000	44,000,000	33,000,000,000	47,000,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
Anthracene	41,000	NA	1,000,000,000	1,400,000,000	67,000,000,000	230,000,000	<13	<15	<15	<15	<15	<16	<13	<13	<13	<15	<14	<15	<15	<14	<14	<15	<14
Atrazine	60	150	NA	NA	NA	71,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
1,2-Diphenylhydrazine(as azobenzene)	4,200	NA	6,100,000	630,000	100,000,000	140,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
Benzidine	1,000	1,000	NA	NA	46,000	1,000	<130	<150	<150	<150	<150	<160	<130	<130	<130	<150	<140	<150	<150	<140	<140	<150	<140
Benzo(a)anthracene	NA	NA	NA	NA	NA	20,000	<13	<15	<15	<15	<15	<16	<13	<13	<13	<15	<14	<15	<15	<14	<14	<15	<14
Benzo(a)pyrene	NA	NA	NA	NA	1,500,000	2,000	<13	<15	<15	<15	<15	<16	<13	<13	<13	<15	<14	<15	<15	<14	<14	<15	<14
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	20,000	<13	<15	<15	<15	<15	<16	<13	<13	<13	<15	<14	<15	7.1 J	<14	<14	<15	<14
Benzo(g,h,i)perylene	NA	NA	NA	NA	800,000,000	2,500,000	<13	<15	<15	<15	<15	<16	<13	<13	<13	<15	<14	<15	12 J	<14	<14	<15	<14
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	200,000	<13	<15	<15	<15	<15	<16	<13	<13	<13	<15	<14	<15	<15	<14	<14	<15	<14
bis(2-Chloroethyl)ether	100	100	8,300	3,800	9,400,000	13,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	700,000,000	2,800,000	<69	<76	44 BJ	44 BJ	<75	63 BJ	8.7 BJ	10 BJ	9.4 BJ	<77	<73	<76	57 BJ	8.3 BJ	<70	<78	<74
Butyl benzyl phthalate	2,200,000	120,000	NA	NA	47,000,000,000	36,000,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
Caprolactam	120,000	NA	NA	NA	670,000,000	53,000,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
Carbazole	9,400	1,100	NA	NA	62,000,000	530,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
4-Chloro-3-methyl phenol	5,800	280	NA	NA	NA	4,500,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
2-Chlorophenol	900	360	430,000	960,000	1,200,000,000	1,400,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
2-Chloronaphthalene	620,000	NA	NA	NA	NA	56,000,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
Chrysene	NA	NA	NA	NA	NA	2,000,000	<13	<15	<15	<15	<15	<16	<13	<13	<13	<15	<14	<15	<15	<14	<14	<15	<14
Di-n-butyl phthalate	960,000	11,000	NA	NA	3,300,000,000	27,000,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
Di-n-octylphthalate	100,000,000	NA	NA	NA	31,000,000,000	6,900,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
Dibenzo(a,h)anthracene	NA	NA	NA	NA	NA	2,000	<13	<15	<15	<15	<15	<16	<13	<13	<13	<15	<14	<15	<15	<14	<14	<15	<14
Dibenzofuran	NA	1,700	2,000,000	130,000	6,700,000	NA	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
3,3'-Dichlorobenzidine	2,000	2,000	NA	NA	6,500,000	6,600	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
2,4-Dichlorophenol	1,500	330	NA	NA	5,100,000,000	660,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
Diethylphthalate	110,000	2,200	NA	NA	3,300,000,000	170,000,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
Dimethyl phthalate	1,500,000	NA	NA	NA	3,300,000,000	1,000,000,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
2,4-Dimethylphenol	7,400	7,600	NA	NA	4,700,000,000	11,000,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
4,6-Dinitro-2-methylphenol	830	NA	NA	NA	130,000,000	79,000	<340	<380	<380	<380	<370	<400	<330	<340	<340	<380	<360	<380	<370	<370	<350	<380	<360
2,4-Dinitrotoluene	430	NA	NA	NA	16,000,000	48,000	<130	<150	<150	<150	<150	<160	<130	<130	<130	<150	<140	<150	<150	<140	<140	<150	<140
Fluoranthene	730,000	5,500	1,000,000,000	740,000,000	9,300,000,000	46,000,000	<13	<15	<15	<15	<15	<16	<13	<13	<13	<15	<14	<15	<15	<14	<14	<15	<14
Fluorene	390,000	5,300	580,000,000	130,000,000	9,300,000,000	27,000,000	<13	<15	<15	<15	<15	<16	<13	<13	<13	<15	<14	<15	<15	<14	<14	<15	<14
Hexachlorobenzene	1,800	350	41,000	17,000	6,800,000	8,900	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
Hexachlorobutadiene	26,000	91	130,000	130,000	140,000,000	100,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
Hexachlorocyclopentadiene	320,000	NA	30,000	50,000	13,000,000	2,300,000	<340	<380	<380	<380	<370	<400	<330	<340	<340	<380	<360	<380	<370	<370	<350	<380	<360
Hexachloroethane	430	1,800	40,000	550,000	230,000,000	230,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
Indeno(1,2,3-c,d)pyrene	NA	NA	NA	NA	NA	20,000	<13	<15	<15	<15	<15	<16	<13	5 J	<13	<15	<14	<15	<15	<14	<14	<15	<14
Isophorone	15,000	26,000	NA	NA	12,000,000,000	4,800,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
2-Methylnaphthalene	57,000	4,200	2,700,000	1,500,000	670,000,000	8,100,000	<13	<15	<15	<15	<15	<16	<13	<13	<13	<15	<14	<15	<15	<14	<14	<15	<14
2-Methylphenol	NA	NA	NA	NA	NA	NA	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
3+4-Methylphenol	NA	NA	NA	NA	NA	NA	<130	<150	<150	<150	<150	<160	<130	<130	<130	<150	<140	<150	<150	<140	<140	<150	<140
Naphthalene	35,000	730	250,000	300,000	200,000,000	16,000,000	<13	<15	<15	<15	<15	<16	<13	<13	<13	<15	<14	<15	<15	<14	<14	<15	<14
Nitrobenzene	330	3,600	91,000	54,000	47,000,000	100,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
2-Nitrophenol	400	NA	NA	NA	NA	630,000	<130	<150	<150	<150	<150	<160	<130	<130	<130	<150	<140	<150	<150	<140	<140	<150	<140
N-Nitrosodi-n-propylamine	330	NA	NA	NA	1,600,000	1,200	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
N-Nitrosodiphenylamine (Diphenylamine)	5,400	NA	NA	NA	2,200,000,000	1,700,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
Pentachlorophenol	22	NA	NA	NA	100,000,000	90,000	<340	<380	<380	<380	<370	<400	<330	<340	<340	<380	<360	<380	<370	<370	<350	<380	<360
Phenanthrene	56,000	2,100	2,800,000	160,000	6,700,000	1,600,000	<13	<15	<15	<15	<15	<16	<13	<13	<13	<15	<14	<15	<15	<14	<14	<15	<14
Phenol	88,000	9,000	NA	NA	40,000,000,000	40,000,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
Pyrene	480,000	NA	1,000,000,000	650,000,000	6,700,000,000	29,000,000	<13	<15	<15	<15	<15	<16	<13	<13	<13	<15	<14	<15	<15	<14	<14	<15	<14
2,4,5-Trichlorophenol	39,000	NA	NA	NA	23,000,000,000	23,000,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74
2,4,6-Trichlorophenol	2,400	330	NA	NA	1,000,000,000	710,000	<69	<76	<77	<77	<75	<81	<68	<69	<69	<77	<73	<76	<76	<75	<70	<78	<74

TABLE 2
SUMMARY OF SOIL SAMPLE ANALYSIS - SVOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-217	HS-SB-217	HS-SB-218	HS-SB-218	HS-SB-219	HS-SB-219	HS-SB-220	HS-SB-220	HS-SB-221	HS-SB-221	HS-SB-222	HS-SB-222	HS-SB-223	HS-SB-223	HS-SB-224	HS-SB-224	HS-SB-225
SAMPLE NAME							HS-SB-217 (2-4)	HS-SB-217 (12-14)	HS-SB-218 (2-4)	HS-SB-218 (14-16)	HS-SB-219 (4-6)	HS-SB-219 (10-12)	HS-SB-220 (2-4)	HS-SB-220 (16-18)	HS-SB-221 (4-6)	HS-SB-221 (6-8)	HS-SB-222 (2-4)	HS-SB-222 (6-8)	HS-SB-223 (2-4)	HS-SB-223 (10-12)	HS-SB-224 (8-10)	HS-SB-224 (10-12)	HS-SB-225 (2-4)
DEPTH (FT)							2 - 4	12 - 14	2 - 4	14 - 16	4 - 6	10 - 12	2 - 4	16 - 18	4 - 6	6 - 8	2 - 4	6 - 8	2 - 4	10 - 12	8 - 10	10 - 12	2 - 4
LAB ID							TF08023-015	TF08023-017	TF06038-006	TF06038-007	TF08023-018	TF08023-019	TF12017-004	TF12017-005	TF12017-006	TF12017-007	TF12017-002	TF12017-003	TF08023-013	TF08023-014	TF13021-012	TF13021-013	TF12017-008
SAMPLE DATE							06/08/2018	06/08/2018	06/05/2018	06/05/2018	06/08/2018	06/08/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/08/2018	06/08/2018	06/12/2018	06/12/2018	06/11/2018
Parameter (UG/KG)																							
Acenaphthene	300,000	8,700	190,000,000	81,000,000	14,000,000,000	41,000,000	<15	<13	<15	<14	<14	<14	<14	<13	<15	<15	<15	<14	<14	<13	<14	<14	<16
Acenaphthylene	5,900	NA	1,600,000	2,200,000	2,300,000,000	1,600,000	<15	<13	<15	<14	<14	<14	<14	<13	<15	<15	<15	<14	<14	<13	<14	<14	<16
Acetophenone	30,000	NA	120,000,000	44,000,000	33,000,000,000	47,000,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
Anthracene	41,000	NA	1,000,000,000	1,400,000,000	67,000,000,000	230,000,000	<15	<13	<15	<14	<14	<14	<14	<13	<15	<15	<15	<14	<14	<13	<14	<14	<16
Atrazine	60	150	NA	NA	NA	71,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
1,2-Diphenylhydrazine(as azobenzene)	4,200	NA	6,100,000	630,000	100,000,000	140,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
Benzidine	1,000	1,000	NA	NA	46,000	1,000	<150	<130	<150	<140	<140	<140	<140	<130	<150	<150	<150	<140	<140	<130	<140	<140	<160
Benzo(a)anthracene	NA	NA	NA	NA	NA	20,000	<15	<13	<15	<14	<14	<14	<14	<13	<15	<15	<15	<14	<14	<13	<14	<14	<16
Benzo(a)pyrene	NA	NA	NA	NA	1,500,000	2,000	<15	<13	<15	<14	<14	<14	<14	<13	<15	<15	<15	<14	<14	<13	<14	<14	<16
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	20,000	<15	<13	<15	<14	<14	<14	<14	<13	<15	<15	<15	<14	<14	<13	<14	<14	<16
Benzo(g,h,i)perylene	NA	NA	NA	NA	800,000,000	2,500,000	<15	<13	<15	<14	<14	<14	<14	<13	<15	<15	<15	<14	<14	<13	<14	<14	<16
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	200,000	<15	<13	<15	<14	<14	<14	<14	<13	<15	<15	<15	<14	<14	<13	<14	<14	<16
bis(2-Chloroethyl)ether	100	100	8,300	3,800	9,400,000	13,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	700,000,000	2,800,000	<75	14 BJ	72 BJ	56 BJ	<74	8.6 BJ	<72	<69	<77	<77	<75	<70	<70	40 BJ	<72	<73	<81
Butyl benzyl phthalate	2,200,000	120,000	NA	NA	47,000,000,000	36,000,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
Caprolactam	120,000	NA	NA	NA	670,000,000	53,000,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
Carbazole	9,400	1,100	NA	NA	62,000,000	530,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
4-Chloro-3-methyl phenol	5,800	280	NA	NA	NA	4,500,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
2-Chlorophenol	900	360	430,000	960,000	1,200,000,000	1,400,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
2-Chloronaphthalene	620,000	NA	NA	NA	NA	56,000,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
Chrysene	NA	NA	NA	NA	NA	2,000,000	<15	<13	<15	<14	<14	<14	<14	<13	<15	<15	<15	<14	<14	<13	<14	<14	<16
Di-n-butyl phthalate	960,000	11,000	NA	NA	3,300,000,000	27,000,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
Di-n-octylphthalate	100,000,000	NA	NA	NA	31,000,000,000	6,900,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
Dibenzo(a,h)anthracene	NA	NA	NA	NA	NA	2,000	<15	<13	<15	<14	<14	<14	<14	<13	<15	<15	<15	<14	<14	<13	<14	<14	<16
Dibenzofuran	NA	1,700	2,000,000	130,000	6,700,000	NA	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
3,3'-Dichlorobenzidine	2,000	2,000	NA	NA	6,500,000	6,600	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
2,4-Dichlorophenol	1,500	330	NA	NA	5,100,000,000	660,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
Diethylphthalate	110,000	2,200	NA	NA	3,300,000,000	170,000,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
Dimethyl phthalate	1,500,000	NA	NA	NA	3,300,000,000	1,000,000,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
2,4-Dimethylphenol	7,400	7,600	NA	NA	4,700,000,000	11,000,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
4,6-Dinitro-2-methylphenol	830	NA	NA	NA	130,000,000	79,000	<370	<330	<370	<350	<360	<370	<360	<340	<380	<380	<370	<350	<340	<330	<360	<360	<400
2,4-Dinitrotoluene	430	NA	NA	NA	16,000,000	48,000	<150	<130	<150	<140	<140	<140	<140	<130	<150	<150	<150	<140	<140	<130	<140	<140	<160
Fluoranthene	730,000	5,500	1,000,000,000	740,000,000	9,300,000,000	46,000,000	2.9 J	<13	<15	<14	<14	<14	<14	<13	<15	<15	<15	<14	<14	<13	<14	<14	<16
Fluorene	390,000	5,300	580,000,000	130,000,000	9,300,000,000	27,000,000	<15	<13	<15	<14	<14	<14	<14	<13	<15	<15	<15	<14	<14	<13	<14	<14	<16
Hexachlorobenzene	1,800	350	41,000	17,000	6,800,000	8,900	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
Hexachlorobutadiene	26,000	91	130,000	130,000	140,000,000	100,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
Hexachlorocyclopentadiene	320,000	NA	30,000	50,000	13,000,000	2,300,000	<370	<330	<370	<350	<360	<370	<360	<340	<380	<380	<370	<350	<340	<330	<360	<360	<400
Hexachloroethane	430	1,800	40,000	550,000	230,000,000	230,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
Indeno(1,2,3-c,d)pyrene	NA	NA	NA	NA	NA	20,000	<15	<13	<15	<14	<14	<14	<14	<13	<15	<15	<15	<14	<14	<13	<14	<14	<16
Isophorone	15,000	26,000	NA	NA	12,000,000,000	4,800,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
2-Methylnaphthalene	57,000	4,200	2,700,000	1,500,000	670,000,000	8,100,000	<15	<13	<15	<14	<14	<14	<14	<13	<15	<15	<15	<14	<14	<13	<14	<14	<16
2-Methylphenol	NA	NA	NA	NA	NA	NA	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
3+4-Methylphenol	NA	NA	NA	NA	NA	NA	<150	<130	<150	<140	<140	<140	<140	<130	<150	<150	<150	<140	<140	<130	<140	<140	<160
Naphthalene	35,000	730	250,000	300,000	200,000,000	16,000,000	<15	<13	<15	<14	<14	<14	<14	<13	<15	<15	<15	<14	<14	<13	<14	<14	<16
Nitrobenzene	330	3,600	91,000	54,000	47,000,000	100,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
2-Nitrophenol	400	NA	NA	NA	NA	630,000	<150	<130	<150	<140	<140	<140	<140	<130	<150	<150	<150	<140	<140	<130	<140	<140	<160
N-Nitrosodi-n-propylamine	330	NA	NA	NA	1,600,000	1,200	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
N-Nitrosodiphenylamine (Diphenylamine)	5,400	NA	NA	NA	2,200,000,000	1,700,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
Pentachlorophenol	22	NA	NA	NA	100,000,000	90,000	<370	<330	<370	<350	<360	<370	<360	<340	<380	<380	<370	<350	<340	<330	<360	<360	<400
Phenanthrene	56,000	2,100	2,800,000	160,000	6,700,000	1,600,000	<15	<13	<15	<14	<14	<14	<14	<13	<15	<15	<15	<14	<14	<13	<14	<14	<16
Phenol	88,000	9,000	NA	NA	40,000,000,000	40,000,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
Pyrene	480,000	NA	1,000,000,000	650,000,000	6,700,000,000	29,000,000	<15	<13	<15	<14	<14	<14	<14	<13	<15	<15	<15	<14	<14	<13	<14	<14	<16
2,4,5-Trichlorophenol	39,000	NA	NA	NA	23,000,000,000	23,000,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81
2,4,6-Trichlorophenol	2,400	330	NA	NA	1,000,000,000	710,000	<75	<66	<75	<71	<74	<75	<72	<69	<77	<77	<75	<70	<70	<66	<72	<73	<81

TABLE 2
SUMMARY OF SOIL SAMPLE ANALYSIS - SVOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-225
SAMPLE NAME							HS-SB-225 (18-20)
DEPTH (FT)							18 - 20
LAB ID							TF12017-009
SAMPLE DATE							06/11/2018
Parameter (UG/KG)							
Acenaphthene	300,000	8,700	190,000,000	81,000,000	14,000,000,000	41,000,000	<13
Acenaphthylene	5,900	NA	1,600,000	2,200,000	2,300,000,000	1,600,000	<13
Acetophenone	30,000	NA	120,000,000	44,000,000	33,000,000,000	47,000,000	<69
Anthracene	41,000	NA	1,000,000,000	1,400,000,000	67,000,000,000	230,000,000	<13
Atrazine	60	150	NA	NA	NA	71,000	<69
1,2-Diphenylhydrazine(as azobenzene)	4,200	NA	6,100,000	630,000	100,000,000	140,000	<69
Benzidine	1,000	1,000	NA	NA	46,000	1,000	<130
Benzo(a)anthracene	NA	NA	NA	NA	NA	20,000	<13
Benzo(a)pyrene	NA	NA	NA	NA	1,500,000	2,000	<13
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	20,000	<13
Benzo(g,h,i)perylene	NA	NA	NA	NA	800,000,000	2,500,000	<13
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	200,000	<13
bis(2-Chloroethyl)ether	100	100	8,300	3,800	9,400,000	13,000	<69
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	700,000,000	2,800,000	<69
Butyl benzyl phthalate	2,200,000	120,000	NA	NA	47,000,000,000	36,000,000	<69
Caprolactam	120,000	NA	NA	NA	670,000,000	53,000,000	<69
Carbazole	9,400	1,100	NA	NA	62,000,000	530,000	<69
4-Chloro-3-methyl phenol	5,800	280	NA	NA	NA	4,500,000	<69
2-Chlorophenol	900	360	430,000	960,000	1,200,000,000	1,400,000	<69
2-Chloronaphthalene	620,000	NA	NA	NA	NA	56,000,000	<69
Chrysene	NA	NA	NA	NA	NA	2,000,000	<13
Di-n-butyl phthalate	960,000	11,000	NA	NA	3,300,000,000	27,000,000	<69
Di-n-octylphthalate	100,000,000	NA	NA	NA	31,000,000,000	6,900,000	<69
Dibenzo(a,h)anthracene	NA	NA	NA	NA	NA	2,000	<13
Dibenzofuran	NA	1,700	2,000,000	130,000	6,700,000	NA	<69
3,3'-Dichlorobenzidine	2,000	2,000	NA	NA	6,500,000	6,600	<69
2,4-Dichlorophenol	1,500	330	NA	NA	5,100,000,000	660,000	<69
Diethylphthalate	110,000	2,200	NA	NA	3,300,000,000	170,000,000	<69
Dimethyl phthalate	1,500,000	NA	NA	NA	3,300,000,000	1,000,000,000	<69
2,4-Dimethylphenol	7,400	7,600	NA	NA	4,700,000,000	11,000,000	<69
4,6-Dinitro-2-methylphenol	830	NA	NA	NA	130,000,000	79,000	<340
2,4-Dinitrotoluene	430	NA	NA	NA	16,000,000	48,000	<130
Fluoranthene	730,000	5,500	1,000,000,000	740,000,000	9,300,000,000	46,000,000	<13
Fluorene	390,000	5,300	580,000,000	130,000,000	9,300,000,000	27,000,000	<13
Hexachlorobenzene	1,800	350	41,000	17,000	6,800,000	8,900	<69
Hexachlorobutadiene	26,000	91	130,000	130,000	140,000,000	100,000	<69
Hexachlorocyclopentadiene	320,000	NA	30,000	50,000	13,000,000	2,300,000	<340
Hexachloroethane	430	1,800	40,000	550,000	230,000,000	230,000	<69
Indeno(1,2,3-c,d)pyrene	NA	NA	NA	NA	NA	20,000	<13
Isophorone	15,000	26,000	NA	NA	12,000,000,000	4,800,000	<69
2-Methylnaphthalene	57,000	4,200	2,700,000	1,500,000	670,000,000	8,100,000	<13
2-Methylphenol	NA	NA	NA	NA	NA	NA	<69
3+4-Methylphenol	NA	NA	NA	NA	NA	NA	<130
Naphthalene	35,000	730	250,000	300,000	200,000,000	16,000,000	<13
Nitrobenzene	330	3,600	91,000	54,000	47,000,000	100,000	<69
2-Nitrophenol	400	NA	NA	NA	NA	630,000	<130
N-Nitrosodi-n-propylamine	330	NA	NA	NA	1,600,000	1,200	<69
N-Nitrosodiphenylamine (Diphenylamine)	5,400	NA	NA	NA	2,200,000,000	1,700,000	<69
Pentachlorophenol	22	NA	NA	NA	100,000,000	90,000	<340
Phenanthrene	56,000	2,100	2,800,000	160,000	6,700,000	1,600,000	<13
Phenol	88,000	9,000	NA	NA	40,000,000,000	40,000,000	<69
Pyrene	480,000	NA	1,000,000,000	650,000,000	6,700,000,000	29,000,000	<13
2,4,5-Trichlorophenol	39,000	NA	NA	NA	23,000,000,000	23,000,000	<69
2,4,6-Trichlorophenol	2,400	330	NA	NA	1,000,000,000	710,000	<69

TABLE 3
SUMMARY OF SOIL SAMPLE ANALYSIS - METALs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

See Notes Following Table 4
7/10/2018

LOCATION NAME	MDEQ PART 201 STATE DEFAULT BACKGROUND	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-123	HS-SB-123	HS-SB-123	HS-SB-124	HS-SB-124	HS-SB-124
SAMPLE NAME								HS-SB-123 (6-7)	HB-SB-123 (7-8)	HS-SB-123 (12-13)	HS-SB-124 (6-7)	HS-SB-124 (6-7) DUP	HS-SB-124 (7-8)
DEPTH (FT)								6 - 7	7 - 8	12 - 13	6 - 7	6 - 7	7 - 8
LAB ID								TF13021-001	TF13021-002	TF13021-003	TF13021-008	TF13021-009	TF13021-010
SAMPLE DATE								06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018
Parameter (UG/KG)													
Aluminum	6,900,000	1,000	NA	NA	NA	NA	50,000,000	11,000,000 B	14,000,000 B	18,000,000 B	12,000,000 B	15,000,000 B	14,000,000 BS
Antimony	NA	4,300	94,000	NA	NA	13,000,000	180,000	<540	<530	<440	<560	<510	<530
Arsenic	5,800	4,600	4,600	NA	NA	720,000	7,600	4,400	4,600	3,500	4,100	4,100	***5,200***
Barium	75,000	1,300,000	NA	NA	NA	330,000,000	37,000,000	50,000	63,000	74,000	55,000	59,000	52,000 S
Beryllium	NA	51,000	NA	NA	NA	1,300,000	410,000	580	680	870	530	740	720
Boron	NA	10,000	140,000	NA	NA	NA	48,000,000	<14,000	3,100 J	3,500 J	<14,000	<13,000	<14,000
Cadmium	1,200	6,000	NA	NA	NA	1,700,000	550,000	44 J	67 J	86 J	48 J	69 J	67 J
Chromium	18,000	1,000,000,000	NA	NA	NA	330,000,000	790,000,000	16,000	20,000	27,000	21,000	150,000	130,000 S
Hexavalent Chromium	NA	30,000	3,300	NA	NA	260,000	2,500,000	<1,100	<1,100	<1,200	910 J	580 J	<1,200
Cobalt	6,800	800	2,000	NA	NA	13,000,000	2,600,000	***6,000***	***6,500***	***8,400***	***6,700***	***7,000***	***7,000***
Copper	32,000	5,800,000	NA	NA	NA	130,000,000	20,000,000	10,000	12,000	15,000	20,000	12,000	13,000
Iron	12,000,000	6,000	NA	NA	NA	NA	160,000,000	***15,000,000***	***18,000,000***	***21,000,000***	***17,000,000***	***17,000,000***	19,000,000 S
Lead	21,000	700,000	NA	NA	NA	100,000,000	400,000	5,700	6,500	7,800	6,600	8,700	8,200
Magnesium	NA	8,000,000	NA	NA	NA	6,700,000,000	1,000,000,000	***13,000,000***	***14,000,000***	***16,000,000***	3,300,000	4,700,000	3,500,000 S
Mercury	130	1,700	50	48,000	52,000	20,000,000	160,000	<92	<86	<90	<90	<94	<95
Molybdenum	NA	1,500	64,000	NA	NA	NA	2,600,000	<2,700	<2,700	<2,200	<2,800	<2,600	<2,600
Nickel	20,000	100,000	NA	NA	NA	13,000,000	40,000,000	16,000	18,000	23,000	14,000	18,000	19,000
Selenium	410	4,000	400	NA	NA	130,000,000	2,600,000	<1,400	<1,400	<1,100	<1,400	<1,300	<1,400
Silver	1,000	4,500	100	NA	NA	6,700,000	2,500,000	<270	<270	54 J	<280	<260	<260
Sodium	NA	NA	NA	NA	NA	NA	NA	56,000 J	72,000 J	72,000 J	52,000 J	<100,000	<110,000
Thallium	NA	2,300	4,200	NA	NA	13,000,000	35,000	120 J	140	190	110 J	140	140
Vanadium	NA	72,000	430,000	NA	NA	NA	750,000	24,000	29,000	37,000	30,000	28,000	29,000 S
Zinc	47,000	2,400,000	NA	NA	NA	NA	170,000,000	31,000	33,000	36,000	33,000	36,000	36,000
Titanium	NA	NA	NA	NA	NA	NA	NA	250,000	310,000	400,000	420,000	290,000	280,000 S

See Notes Following Table 4
7/10/2018

TABLE 3
SUMMARY OF SOIL SAMPLE ANALYSIS - METALs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 STATE DEFAULT BACKGROUND	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-124	HS-SB-125	HS-SB-125	HS-SB-125	HS-SB-125	HS-SB-128
SAMPLE NAME								HS-SB-124 (9-10)	HB-SB-125 (1-2)	HB-SB-125 (1-2) DUP	HB-SB-125 (8-9)	HB-SB-125 (11-12)	HB-SB-128 (5-6)
DEPTH (FT)								9 - 10	1 - 2	1 - 2	8 - 9	11 - 12	5 - 6
LAB ID								TF13021-011	TF13021-015	TF13021-016	TF13021-017	TF13021-018	TF13021-019
SAMPLE DATE								06/12/2018	06/13/2018	06/13/2018	06/13/2018	06/13/2018	06/13/2018
Parameter (UG/KG)													
Aluminum	6,900,000	1,000	NA	NA	NA	NA	50,000,000	13,000,000 B	11,000,000 B	15,000,000 B	21,000,000 BS	23,000,000 B	4,000,000 B
Antimony	NA	4,300	94,000	NA	NA	13,000,000	180,000	<480	<440	<480	<520	<600	<480
Arsenic	5,800	4,600	4,600	NA	NA	720,000	7,600	***5,100***	3,200	***5,700***	4,100	***8,500***	2,100
Barium	75,000	1,300,000	NA	NA	NA	330,000,000	37,000,000	49,000	45,000	58,000	93,000 S	110,000	14,000
Beryllium	NA	51,000	NA	NA	NA	1,300,000	410,000	660	400	640	960	1,100	190
Boron	NA	10,000	140,000	NA	NA	NA	48,000,000	<12,000	<11,000	<13,000	4,100 JS	4,900 J	<13,000
Cadmium	1,200	6,000	NA	NA	NA	1,700,000	550,000	50 J	84 J	71 J	97 J	94 J	<130
Chromium	18,000	1,000,000,000	NA	NA	NA	330,000,000	790,000,000	17,000	15,000	22,000	28,000 S	36,000	5,700
Hexavalent Chromium	NA	30,000	3,300	NA	NA	260,000	2,500,000	<1,200	<1,100	350 J	<1,200	<1,300	<1,100
Cobalt	6,800	800	2,000	NA	NA	13,000,000	2,600,000	***6,000***	***5,500***	***6,700***	***11,000***	***13,000***	***1,400***
Copper	32,000	5,800,000	NA	NA	NA	130,000,000	20,000,000	11,000	6,300	11,000	18,000	22,000	4,300
Iron	12,000,000	6,000	NA	NA	NA	NA	160,000,000	***16,000,000***	***12,000,000***	***19,000,000***	23,000,000 S	***29,000,000***	***5,700,000***
Lead	21,000	700,000	NA	NA	NA	100,000,000	400,000	6,100	8,200	10,000	9,200	9,800	2,500
Magnesium	NA	8,000,000	NA	NA	NA	6,700,000,000	1,000,000,000	4,200,000	1,400,000	1,800,000	16,000,000 S	***21,000,000***	690,000
Mercury	130	1,700	50	48,000	52,000	20,000,000	160,000	<85	<81	<89	<88	<97	<85
Molybdenum	NA	1,500	64,000	NA	NA	NA	2,600,000	<2,400	<2,200	<2,400	<2,600	<3,000	<2,400
Nickel	20,000	100,000	NA	NA	NA	13,000,000	40,000,000	17,000	10,000	16,000	28,000	30,000	5,200
Selenium	410	4,000	400	NA	NA	130,000,000	2,600,000	<1,200	<1,100	<1,300	<1,400	<1,600	<1,300
Silver	1,000	4,500	100	NA	NA	6,700,000	2,500,000	<240	<220	<240	<260	72 J	<240
Sodium	NA	NA	NA	NA	NA	NA	NA	41,000 J	<88,000	<97,000	77,000 JS	100,000 J	<96,000
Thallium	NA	2,300	4,200	NA	NA	13,000,000	35,000	140	100 J	140	220	300	53 J
Vanadium	NA	72,000	430,000	NA	NA	NA	750,000	25,000	19,000	31,000	39,000 S	50,000	9,200
Zinc	47,000	2,400,000	NA	NA	NA	NA	170,000,000	32,000	30,000	38,000	40,000	46,000	10,000
Titanium	NA	NA	NA	NA	NA	NA	NA	230,000	190,000	250,000	430,000 S	500,000	130,000

See Notes Following Table 4
7/10/2018

TABLE 3
SUMMARY OF SOIL SAMPLE ANALYSIS - METALs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 STATE DEFAULT BACKGROUND	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-128	HS-SB-128	HS-SB-129	HS-SB-129	HS-SB-129	HS-SB-201
SAMPLE NAME								HB-SB-128 (6-7)	HB-SB-128 (14-15)	HS-SB-129 (7-8)	HS-SB-129 (8-9)	HS-SB-129 (10-11)	HS-SB-201 (2-4)
DEPTH (FT)								6 - 7	14 - 15	7 - 8	8 - 9	10 - 11	2 - 4
LAB ID								TF13021-020	TF13021-021	TF13021-005	TF13021-006	TF13021-007	TF08023-001
SAMPLE DATE								06/13/2018	06/13/2018	06/12/2018	06/12/2018	06/12/2018	06/07/2018
Parameter (UG/KG)													
Aluminum	6,900,000	1,000	NA	NA	NA	NA	50,000,000	3,100,000 B	8,100,000 B	15,000,000 B	15,000,000 B	14,000,000 B	***18,000,000***
Antimony	NA	4,300	94,000	NA	NA	13,000,000	180,000	<520	<550	<590	<450	<440	<530
Arsenic	5,800	4,600	4,600	NA	NA	720,000	7,600	1,200	2,000	***5,400***	***7,200***	4,600	4,600
Barium	75,000	1,300,000	NA	NA	NA	330,000,000	37,000,000	11,000	32,000	56,000	49,000	44,000	68,000
Beryllium	NA	51,000	NA	NA	NA	1,300,000	410,000	190	430	750	680	610	800
Boron	NA	10,000	140,000	NA	NA	NA	48,000,000	<14,000	<14,000	<15,000	<12,000	<11,000	<14,000
Cadmium	1,200	6,000	NA	NA	NA	1,700,000	550,000	<140	38 J	83 J	66 J	54 J	77 J
Chromium	18,000	1,000,000,000	NA	NA	NA	330,000,000	790,000,000	4,500	13,000	590,000	29,000	41,000	23,000
Hexavalent Chromium	NA	30,000	3,300	NA	NA	260,000	2,500,000	<1,100	<1,200	480 J	920 J	830 J	500 J
Cobalt	6,800	800	2,000	NA	NA	13,000,000	2,600,000	***1,600***	***3,300***	***12,000***	***7,800***	***6,600***	***7,500***
Copper	32,000	5,800,000	NA	NA	NA	130,000,000	20,000,000	2,900	8,300	14,000	13,000	12,000	14,000
Iron	12,000,000	6,000	NA	NA	NA	NA	160,000,000	***4,300,000***	***11,000,000***	***51,000,000***	***18,000,000***	***17,000,000***	***20,000,000***
Lead	21,000	700,000	NA	NA	NA	100,000,000	400,000	1,900	3,700	8,500	9,600	7,800	8,000
Magnesium	NA	8,000,000	NA	NA	NA	6,700,000,000	1,000,000,000	600,000	1,900,000	***9,700,000***	2,200,000	3,300,000	***23,000,000***
Mercury	130	1,700	50	48,000	52,000	20,000,000	160,000	<78	<99	55 J	<87	<88	29 J
Molybdenum	NA	1,500	64,000	NA	NA	NA	2,600,000	<2,600	<2,700	<2,900	<2,200	<2,200	<2,700
Nickel	20,000	100,000	NA	NA	NA	13,000,000	40,000,000	3,900	11,000	19,000	19,000	17,000	21,000
Selenium	410	4,000	400	NA	NA	130,000,000	2,600,000	<1,400	<1,400	<1,500	<1,200	<1,100	<1,400
Silver	1,000	4,500	100	NA	NA	6,700,000	2,500,000	<260	<270	<290	<220	<220	<270
Sodium	NA	NA	NA	NA	NA	NA	NA	<100,000	<110,000	59,000 J	<90,000	<87,000	55,000 J
Thallium	NA	2,300	4,200	NA	NA	13,000,000	35,000	41 J	81 J	150	130	120	180
Vanadium	NA	72,000	430,000	NA	NA	NA	750,000	6,600	18,000	22,000	30,000	27,000	19,000
Zinc	47,000	2,400,000	NA	NA	NA	NA	170,000,000	8,600	18,000	37,000	44,000	34,000	39,000
Titanium	NA	NA	NA	NA	NA	NA	NA	110,000	230,000	320,000	210,000	260,000	300,000

See Notes Following Table 4
7/10/2018

TABLE 3
SUMMARY OF SOIL SAMPLE ANALYSIS - METALs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 STATE DEFAULT BACKGROUND	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-201	HS-SB-202	HS-SB-202	HS-SB-202	HS-SB-202	HS-SB-203
SAMPLE NAME								HS-SB-201 (10-12)	HS-SB-202 (6-8)	HS-SB-202 (6-8)	HS-SB-202 (8-10)	HS-SB-202 (8-10) DUP	HS-SB-203 (8-10)
DEPTH (FT)								10 - 12	6 - 8	6 - 8	8 - 10	8 - 10	8 - 10
LAB ID								TF08023-002	TF06038-001	TF06038-009	TF06038-002	TF06038-003	TF05014-006
SAMPLE DATE								06/07/2018	06/05/2018	06/05/2018	06/05/2018	06/05/2018	06/04/2018
Parameter (UG/KG)													
Aluminum	6,900,000	1,000	NA	NA	NA	NA	50,000,000	***4,300,000***	***11,000,000***	***12,000,000***	***3,900,000***	***4,300,000***	3,400,000 B
Antimony	NA	4,300	94,000	NA	NA	13,000,000	180,000	<330	<420	<450	<440	<440	<550
Arsenic	5,800	4,600	4,600	NA	NA	720,000	7,600	3,000	***9,600***	3,800	4,000	3,800	1,000
Barium	75,000	1,300,000	NA	NA	NA	330,000,000	37,000,000	20,000	41,000	48,000	14,000	13,000	12,000
Beryllium	NA	51,000	NA	NA	NA	1,300,000	410,000	190	570	630	190	230	170
Boron	NA	10,000	140,000	NA	NA	NA	48,000,000	<8,600	<11,000	<12,000	<11,000	<11,000	<14,000
Cadmium	1,200	6,000	NA	NA	NA	1,700,000	550,000	23 J	68 J	53 J	40 J	43 J	<140
Chromium	18,000	1,000,000,000	NA	NA	NA	330,000,000	790,000,000	13,000	19,000 B	17,000 B	9,700 B	10,000 B	4,900 B
Hexavalent Chromium	NA	30,000	3,300	NA	NA	260,000	2,500,000	380 J	250 J	250 J	260 J	<1,100	380 J
Cobalt	6,800	800	2,000	NA	NA	13,000,000	2,600,000	***2,500***	***5,600***	***6,400***	***3,500***	***3,700***	***1,800***
Copper	32,000	5,800,000	NA	NA	NA	130,000,000	20,000,000	5,300	13,000	11,000	8,300	8,700	3,200
Iron	12,000,000	6,000	NA	NA	NA	NA	160,000,000	***10,000,000***	***22,000,000***	***15,000,000***	***10,000,000***	***10,000,000***	***4,300,000***
Lead	21,000	700,000	NA	NA	NA	100,000,000	400,000	4,800	7,700	6,800	4,100	4,100	1,900
Magnesium	NA	8,000,000	NA	NA	NA	6,700,000,000	1,000,000,000	***9,300,000***	7,500,000	***12,000,000***	***45,000,000***	***30,000,000***	690,000
Mercury	130	1,700	50	48,000	52,000	20,000,000	160,000	<82	<87	<93	<80	<76	23 J
Molybdenum	NA	1,500	64,000	NA	NA	NA	2,600,000	1,500 J	650 J	<2,200	<2,200	<2,200	<2,700
Nickel	20,000	100,000	NA	NA	NA	13,000,000	40,000,000	6,700	17,000	16,000	8,800	9,100	4,200
Selenium	410	4,000	400	NA	NA	130,000,000	2,600,000	<860	<1,100	<1,200	<1,100	<1,100	<1,400
Silver	1,000	4,500	100	NA	NA	6,700,000	2,500,000	<170	<210	<220	<220	<220	<270
Sodium	NA	NA	NA	NA	NA	NA	NA	29,000 J	35,000 J	40,000 J	83,000 J	65,000 J	<110,000
Thallium	NA	2,300	4,200	NA	NA	13,000,000	35,000	73 J	150	140	76 J	70 J	36 J
Vanadium	NA	72,000	430,000	NA	NA	NA	750,000	8,100	28,000	15,000	11,000	11,000	7,500
Zinc	47,000	2,400,000	NA	NA	NA	NA	170,000,000	15,000	38,000	33,000	19,000	19,000	7,400
Titanium	NA	NA	NA	NA	NA	NA	NA	200,000	270,000	250,000	240,000	230,000	120,000

TABLE 3
SUMMARY OF SOIL SAMPLE ANALYSIS - METALs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

See Notes Following Table 4
7/10/2018

LOCATION NAME	MDEQ PART 201 STATE DEFAULT BACKGROUND	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-203	HS-SB-204	HS-SB-204	HS-SB-205	HS-SB-205	HS-SB-206
SAMPLE NAME								HS-SB-203 (16-18)	HS-SB-204 (4-6)	HS-SB-204 (10-12)	HS-SB-205 (10-12)	HS-SB-205 (18-20)	HS-SB-206 (10-12)
DEPTH (FT)								16 - 18	4 - 6	10 - 12	10 - 12	18 - 20	10 - 12
LAB ID								TF05014-007	TF06038-013	TF06038-014	TF02011-001	TF02011-002	TF05014-004
SAMPLE DATE								06/04/2018	06/06/2018	06/06/2018	06/01/2018	06/01/2018	06/04/2018
Parameter (UG/KG)													
Aluminum	6,900,000	1,000	NA	NA	NA	NA	50,000,000	800,000 B	***11,000,000***	***2,400,000***	2,500,000 B	1,800,000 B	14,000,000 B
Antimony	NA	4,300	94,000	NA	NA	13,000,000	180,000	<390	<400	<440	<480	<320	<470
Arsenic	5,800	4,600	4,600	NA	NA	720,000	7,600	550	3,700	1,900	2,400	1,800	2,000
Barium	75,000	1,300,000	NA	NA	NA	330,000,000	37,000,000	3,000	37,000	8,700	12,000	5,800	58,000
Beryllium	NA	51,000	NA	NA	NA	1,300,000	410,000	62 J	480	150	44 J	24 J	590
Boron	NA	10,000	140,000	NA	NA	NA	48,000,000	<10,000	<10,000	<11,000	<13,000	<8,400	<12,000
Cadmium	1,200	6,000	NA	NA	NA	1,700,000	550,000	<100	30 J	23 J	<130	19 J	49 J
Chromium	18,000	1,000,000,000	NA	NA	NA	330,000,000	790,000,000	2,100 B	14,000 B	5,600 B	5,800 B	5,800 B	20,000 B
Hexavalent Chromium	NA	30,000	3,300	NA	NA	260,000	2,500,000	<1,000	250 J	270 J	<1,100	<1,000	520 J
Cobalt	6,800	800	2,000	NA	NA	13,000,000	2,600,000	650 J	***5,400***	***1,700***	***1,700***	***1,900***	***5,900***
Copper	32,000	5,800,000	NA	NA	NA	130,000,000	20,000,000	1,400	8,500	4,300	3,100	3,800	11,000
Iron	12,000,000	6,000	NA	NA	NA	NA	160,000,000	***2,200,000***	***12,000,000***	***5,300,000***	***5,600,000***	***5,600,000***	***16,000,000***
Lead	21,000	700,000	NA	NA	NA	100,000,000	400,000	900	5,900	2,700	3,700	2,600	7,000
Magnesium	NA	8,000,000	NA	NA	NA	6,700,000,000	1,000,000,000	380,000	2,900,000	***14,000,000***	6,300,000	***16,000,000***	1,900,000
Mercury	130	1,700	50	48,000	52,000	20,000,000	160,000	<76	<90	<81	<76	<74	<93
Molybdenum	NA	1,500	64,000	NA	NA	NA	2,600,000	<1,900	<2,000	<2,200	<2,400	<1,600	770 J
Nickel	20,000	100,000	NA	NA	NA	13,000,000	40,000,000	1,500	12,000	4,400	4,600	4,700	16,000
Selenium	410	4,000	400	NA	NA	130,000,000	2,600,000	<1,000	<1,000	<1,100	<1,300	<840	<1,200
Silver	1,000	4,500	100	NA	NA	6,700,000	2,500,000	<190	<200	<220	<240	<160	<230
Sodium	NA	NA	NA	NA	NA	NA	NA	<78,000	<80,000	35,000 J	<97,000	48,000 J	<93,000
Thallium	NA	2,300	4,200	NA	NA	13,000,000	35,000	<100	98 J	41 J	66 J	37 J	140
Vanadium	NA	72,000	430,000	NA	NA	NA	750,000	4,100	13,000	6,000	9,900	7,100	27,000
Zinc	47,000	2,400,000	NA	NA	NA	NA	170,000,000	3,900	22,000	11,000	10,000	12,000	34,000
Titanium	NA	NA	NA	NA	NA	NA	NA	76,000	180,000	130,000	130,000	140,000	230,000

See Notes Following Table 4
7/10/2018

TABLE 3
SUMMARY OF SOIL SAMPLE ANALYSIS - METALs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 STATE DEFAULT BACKGROUND	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-206	HS-SB-207	HS-SB-207	HS-SB-208	HS-SB-208	HS-SB-209
SAMPLE NAME								HS-SB-206 (14-16)	HS-SB-207 (2-4)	HS-SB-207 (8-10)	HS-SB-208 (0-2)	HS-SB-208 (8-10)	HS-SB-209 (4-6)
DEPTH (FT)								14 - 16	2 - 4	8 - 10	0 - 2	8 - 10	4 - 6
LAB ID								TF05014-005	TF05014-001	TF05014-002	TF08023-008	TF08023-009	TF06038-008
SAMPLE DATE								06/04/2018	06/04/2018	06/04/2018	06/07/2018	06/07/2018	06/05/2018
Parameter (UG/KG)													
Aluminum	6,900,000	1,000	NA	NA	NA	NA	50,000,000	4,100,000 B	12,000,000 BS	13,000,000 B	***7,800,000***	***5,000,000***	***12,000,000***
Antimony	NA	4,300	94,000	NA	NA	13,000,000	180,000	<550	<480	<420	<460	<480	<550
Arsenic	5,800	4,600	4,600	NA	NA	720,000	7,600	1,700	3,600	3,900	2,200	380 J	4,200
Barium	75,000	1,300,000	NA	NA	NA	330,000,000	37,000,000	18,000	57,000 S	60,000	36,000	13,000	52,000
Beryllium	NA	51,000	NA	NA	NA	1,300,000	410,000	210	660	630	300	140	590
Boron	NA	10,000	140,000	NA	NA	NA	48,000,000	<14,000	<13,000	3,400 J	<12,000	<12,000	<14,000
Cadmium	1,200	6,000	NA	NA	NA	1,700,000	550,000	<140	48 J	73 J	59 J	<120	41 J
Chromium	18,000	1,000,000,000	NA	NA	NA	330,000,000	790,000,000	6,600 B	16,000 B	17,000 B	19,000	5,100	17,000 B
Hexavalent Chromium	NA	30,000	3,300	NA	NA	260,000	2,500,000	270 J	380 J	290 J	1,100	360 J	230 J
Cobalt	6,800	800	2,000	NA	NA	13,000,000	2,600,000	***2,100***	***5,600***	***6,400***	***3,200***	***1,200***	***5,200***
Copper	32,000	5,800,000	NA	NA	NA	130,000,000	20,000,000	3,900	9,200	13,000	6,800	1,000 J	9,700
Iron	12,000,000	6,000	NA	NA	NA	NA	160,000,000	***4,900,000***	14,000,000 S	***16,000,000***	***8,700,000***	***2,800,000***	***14,000,000***
Lead	21,000	700,000	NA	NA	NA	100,000,000	400,000	3,500	6,500	6,300	7,300	2,400	5,900
Magnesium	NA	8,000,000	NA	NA	NA	6,700,000,000	1,000,000,000	760,000	1,800,000 S	***13,000,000***	2,000,000	760,000	3,500,000
Mercury	130	1,700	50	48,000	52,000	20,000,000	160,000	<89	29 J	<91	35 J	<79	<95
Molybdenum	NA	1,500	64,000	NA	NA	NA	2,600,000	<2,700	<2,400	<2,100	<2,300	<2,400	<2,700
Nickel	20,000	100,000	NA	NA	NA	13,000,000	40,000,000	5,800	17,000	16,000	7,900	3,300	16,000
Selenium	410	4,000	400	NA	NA	130,000,000	2,600,000	<1,400	<1,300	<1,100	<1,200	<1,200	<1,400
Silver	1,000	4,500	100	NA	NA	6,700,000	2,500,000	<270	<240	<210	<230	<240	<270
Sodium	NA	NA	NA	NA	NA	NA	NA	<110,000	<96,000	61,000 J	<92,000	<96,000	<110,000
Thallium	NA	2,300	4,200	NA	NA	13,000,000	35,000	39 J	100 J	160	67 J	38 J	120 J
Vanadium	NA	72,000	430,000	NA	NA	NA	750,000	9,500	22,000 S	27,000	11,000	5,700	22,000
Zinc	47,000	2,400,000	NA	NA	NA	NA	170,000,000	14,000	26,000	32,000	33,000	9,400	30,000
Titanium	NA	NA	NA	NA	NA	NA	NA	130,000	180,000 S	280,000	160,000	140,000	230,000

See Notes Following Table 4
7/10/2018

TABLE 3
SUMMARY OF SOIL SAMPLE ANALYSIS - METALs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 STATE DEFAULT BACKGROUND	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-210	HS-SB-210	HS-SB-211	HS-SB-211	HS-SB-212	HS-SB-212
SAMPLE NAME								HS-SB-210 (4-6)	HS-SB-210 (8-10)	HS-SB-211 (2-4)	HS-SB-211 (8-10)	HS-SB-212 (0-2)	HS-SB-212 (0-2) DUP
DEPTH (FT)								4 - 6	8 - 10	2 - 4	8 - 10	0 - 2	0 - 2
LAB ID								TF02012-001	TF02012-002	TF06038-011	TF06038-012	TF08023-003	TF08023-004
SAMPLE DATE								06/01/2018	06/01/2018	06/06/2018	06/06/2018	06/07/2018	06/07/2018
Parameter (UG/KG)													
Aluminum	6,900,000	1,000	NA	NA	NA	NA	50,000,000	13,000,000 B	10,000,000 B	13,000,000 S	***16,000,000***	***5,700,000***	***4,400,000***
Antimony	NA	4,300	94,000	NA	NA	13,000,000	180,000	<460	<450	<460	<480	<320	<350
Arsenic	5,800	4,600	4,600	NA	NA	720,000	7,600	***6,100***	***5,700***	4,300	3,900	1,300	830
Barium	75,000	1,300,000	NA	NA	NA	330,000,000	37,000,000	69,000	46,000	38,000 S	74,000	17,000	22,000
Beryllium	NA	51,000	NA	NA	NA	1,300,000	410,000	97	81 J	570	790	200	150
Boron	NA	10,000	140,000	NA	NA	NA	48,000,000	<12,000	<12,000	<12,000	3,300 J	<8,200	<9,200
Cadmium	1,200	6,000	NA	NA	NA	1,700,000	550,000	76 J	48 J	49 J	83 J	37 J	42 J
Chromium	18,000	1,000,000,000	NA	NA	NA	330,000,000	790,000,000	22,000 B	18,000 B	17,000 BS	25,000 B	12,000	30,000
Hexavalent Chromium	NA	30,000	3,300	NA	NA	260,000	2,500,000	<1,200	<1,200	350 J	<1,200	550 J	1,600
Cobalt	6,800	800	2,000	NA	NA	13,000,000	2,600,000	***7,500***	***6,300***	***7,100***	***7,900***	***2,400***	***1,500***
Copper	32,000	5,800,000	NA	NA	NA	130,000,000	20,000,000	16,000	13,000	11,000	16,000	2,900	2,000
Iron	12,000,000	6,000	NA	NA	NA	NA	160,000,000	***23,000,000***	***19,000,000***	16,000,000 S	***20,000,000***	***6,400,000***	***4,400,000***
Lead	21,000	700,000	NA	NA	NA	100,000,000	400,000	9,200	9,200	8,500	8,100	2,700	2,800
Magnesium	NA	8,000,000	NA	NA	NA	6,700,000,000	1,000,000,000	2,200,000	2,100,000	2,900,000 S	***37,000,000***	1,500,000	840,000
Mercury	130	1,700	50	48,000	52,000	20,000,000	160,000	<87	<88	<89	<95	<78	<84
Molybdenum	NA	1,500	64,000	NA	NA	NA	2,600,000	<2,300	<2,300	<2,300	<2,400	<1,600	<1,800
Nickel	20,000	100,000	NA	NA	NA	13,000,000	40,000,000	24,000	17,000	14,000	21,000	7,200	3,900
Selenium	410	4,000	400	NA	NA	130,000,000	2,600,000	<1,200	<1,200	<1,200	<1,200	<820	<920
Silver	1,000	4,500	100	NA	NA	6,700,000	2,500,000	<230	<230	<230	<240	<160	<180
Sodium	NA	NA	NA	NA	NA	NA	NA	<92,000	35,000 J	<93,000	81,000 J	<63,000	<70,000
Thallium	NA	2,300	4,200	NA	NA	13,000,000	35,000	170	130	120	190	37 J	34 J
Vanadium	NA	72,000	430,000	NA	NA	NA	750,000	32,000	24,000	16,000	20,000	9,500	6,700
Zinc	47,000	2,400,000	NA	NA	NA	NA	170,000,000	39,000	35,000	33,000	37,000	18,000	17,000
Titanium	NA	NA	NA	NA	NA	NA	NA	190,000	230,000	240,000 S	360,000	200,000	130,000

See Notes Following Table 4
7/10/2018

TABLE 3
SUMMARY OF SOIL SAMPLE ANALYSIS - METALs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 STATE DEFAULT BACKGROUND	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-212	HS-SB-213	HS-SB-213	HS-SB-214	HS-SB-214	HS-SB-215
SAMPLE NAME								HS-SB-212 (6-8)	HS-SB-213 (6-8)	HS-SB-213 (18-20)	HS-SB-214 (2-4)	HS-SB-214 (18-20)	HS-SB-215 (0-2)
DEPTH (FT)								6 - 8	6 - 8	18 - 20	2 - 4	18 - 20	0 - 2
LAB ID								TF08023-005	TF06038-004	TF06038-005	TF06038-015	TF06038-016	TF08023-006
SAMPLE DATE								06/07/2018	06/05/2018	06/05/2018	06/06/2018	06/06/2018	06/07/2018
Parameter (UG/KG)													
Aluminum	6,900,000	1,000	NA	NA	NA	NA	50,000,000	***5,800,000***	***3,200,000***	***3,000,000***	***9,700,000***	***12,000,000***	***11,000,000***
Antimony	NA	4,300	94,000	NA	NA	13,000,000	180,000	<380	<350	<560	<430	<550	<490
Arsenic	5,800	4,600	4,600	NA	NA	720,000	7,600	3,300	1,900	1,600	3,900	4,000	3,600
Barium	75,000	1,300,000	NA	NA	NA	330,000,000	37,000,000	15,000	9,800	12,000	38,000	66,000	37,000
Beryllium	NA	51,000	NA	NA	NA	1,300,000	410,000	260	210	200	370	660	480
Boron	NA	10,000	140,000	NA	NA	NA	48,000,000	<9,800	<9,100	<15,000	<11,000	<14,000	<13,000
Cadmium	1,200	6,000	NA	NA	NA	1,700,000	550,000	49 J	35 J	30 J	43 J	66 J	48 J
Chromium	18,000	1,000,000,000	NA	NA	NA	330,000,000	790,000,000	12,000	5,900 B	5,400 B	13,000 B	19,000 B	14,000
Hexavalent Chromium	NA	30,000	3,300	NA	NA	260,000	2,500,000	510 J	240 J	<1,100	470 J	260 J	430 J
Cobalt	6,800	800	2,000	NA	NA	13,000,000	2,600,000	***3,600***	***2,200***	***2,000***	***6,300***	***6,800***	***7,400***
Copper	32,000	5,800,000	NA	NA	NA	130,000,000	20,000,000	7,100	4,800	4,300	5,500	11,000	8,100
Iron	12,000,000	6,000	NA	NA	NA	NA	160,000,000	***9,800,000***	***6,800,000***	***5,700,000***	***12,000,000***	***17,000,000***	***13,000,000***
Lead	21,000	700,000	NA	NA	NA	100,000,000	400,000	4,800	2,800	2,500	7,400	6,400	8,200
Magnesium	NA	8,000,000	NA	NA	NA	6,700,000,000	1,000,000,000	5,900,000	***26,000,000***	***26,000,000***	2,000,000	***25,000,000***	2,700,000
Mercury	130	1,700	50	48,000	52,000	20,000,000	160,000	<81	<92	<84	<90	<84	<88
Molybdenum	NA	1,500	64,000	NA	NA	NA	2,600,000	<1,900	<1,700	<2,800	<2,200	<2,800	<2,400
Nickel	20,000	100,000	NA	NA	NA	13,000,000	40,000,000	9,200	5,500	5,000	10,000	18,000	13,000
Selenium	410	4,000	400	NA	NA	130,000,000	2,600,000	<980	<910	<1,500	<1,100	<1,400	<1,300
Silver	1,000	4,500	100	NA	NA	6,700,000	2,500,000	<190	<170	<280	<220	<280	<240
Sodium	NA	NA	NA	NA	NA	NA	NA	30,000 J	53,000 J	50,000 J	<86,000	82,000 J	<98,000
Thallium	NA	2,300	4,200	NA	NA	13,000,000	35,000	77 J	58 J	44 J	92 J	140	100 J
Vanadium	NA	72,000	430,000	NA	NA	NA	750,000	11,000	6,700	6,800	15,000	17,000	16,000
Zinc	47,000	2,400,000	NA	NA	NA	NA	170,000,000	21,000	13,000	12,000	34,000	35,000	30,000
Titanium	NA	NA	NA	NA	NA	NA	NA	210,000	220,000	170,000	130,000	280,000	200,000

See Notes Following Table 4
7/10/2018

TABLE 3
SUMMARY OF SOIL SAMPLE ANALYSIS - METALs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 STATE DEFAULT BACKGROUND	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-215	HS-SB-216	HS-SB-216	HS-SB-217	HS-SB-217	HS-SB-218
SAMPLE NAME								HS-SB-215 (10-12)	HS-SB-216 (2-4)	HS-SB-216 (8-10)	HS-SB-217 (2-4)	HS-SB-217 (12-14)	HS-SB-218 (2-4)
DEPTH (FT)								10 - 12	2 - 4	8 - 10	2 - 4	12 - 14	2 - 4
LAB ID								TF08023-007	TF08023-011	TF08023-012	TF08023-015	TF08023-017	TF06038-006
SAMPLE DATE								06/07/2018	06/08/2018	06/08/2018	06/08/2018	06/08/2018	06/05/2018
Parameter (UG/KG)													
Aluminum	6,900,000	1,000	NA	NA	NA	NA	50,000,000	***5,000,000***	***15,000,000***	***9,500,000***	19,000,000 S	***1,200,000***	***12,000,000***
Antimony	NA	4,300	94,000	NA	NA	13,000,000	180,000	<350	<460	<360	<410	<350	<440
Arsenic	5,800	4,600	4,600	NA	NA	720,000	7,600	***5,700***	***5,300***	***4,800***	***7,600***	1,100	4,100
Barium	75,000	1,300,000	NA	NA	NA	330,000,000	37,000,000	25,000	43,000	48,000	92,000 S	5,400	38,000
Beryllium	NA	51,000	NA	NA	NA	1,300,000	410,000	260	730	430	880	68 J	510
Boron	NA	10,000	140,000	NA	NA	NA	48,000,000	<9,100	<12,000	1,800 J	2,400 JS	<9,200	<11,000
Cadmium	1,200	6,000	NA	NA	NA	1,700,000	550,000	34 J	40 J	54 J	110	<92	33 J
Chromium	18,000	1,000,000,000	NA	NA	NA	330,000,000	790,000,000	8,800	19,000	15,000	25,000	3,200	16,000 B
Hexavalent Chromium	NA	30,000	3,300	NA	NA	260,000	2,500,000	<1,100	640 J	360 J	<1,200	330 J	300 J
Cobalt	6,800	800	2,000	NA	NA	13,000,000	2,600,000	***3,300***	***6,900***	***5,100***	***8,400***	***1,200***	***5,400***
Copper	32,000	5,800,000	NA	NA	NA	130,000,000	20,000,000	6,800	11,000	9,300	16,000 S	2,400	8,500
Iron	12,000,000	6,000	NA	NA	NA	NA	160,000,000	***9,200,000***	***18,000,000***	***13,000,000***	24,000,000 S	***3,300,000***	***15,000,000***
Lead	21,000	700,000	NA	NA	NA	100,000,000	400,000	5,000	10,000	7,100	10,000	1,700	7,400
Magnesium	NA	8,000,000	NA	NA	NA	6,700,000,000	1,000,000,000	***17,000,000***	3,500,000	***19,000,000***	19,000,000 S	***16,000,000***	2,700,000
Mercury	130	1,700	50	48,000	52,000	20,000,000	160,000	<87	<89	<83	24 J	<75	<90
Molybdenum	NA	1,500	64,000	NA	NA	NA	2,600,000	<1,700	<2,300	<1,800	<2,000	<1,800	<2,200
Nickel	20,000	100,000	NA	NA	NA	13,000,000	40,000,000	8,100	17,000	13,000	24,000 S	3,400	13,000
Selenium	410	4,000	400	NA	NA	130,000,000	2,600,000	<910	<1,200	<940	<1,100	<920	<1,100
Silver	1,000	4,500	100	NA	NA	6,700,000	2,500,000	<170	<230	<180	49 J	<180	<220
Sodium	NA	NA	NA	NA	NA	NA	NA	47,000 J	<91,000	54,000 J	55,000 JS	33,000 J	<88,000
Thallium	NA	2,300	4,200	NA	NA	13,000,000	35,000	70 J	120	110	210	49 J	110
Vanadium	NA	72,000	430,000	NA	NA	NA	750,000	8,500	27,000	12,000	18,000 S	3,900	17,000
Zinc	47,000	2,400,000	NA	NA	NA	NA	170,000,000	25,000	32,000	29,000	53,000 S	6,300	30,000
Titanium	NA	NA	NA	NA	NA	NA	NA	160,000	250,000	200,000	270,000 S	81,000	190,000

TABLE 3
SUMMARY OF SOIL SAMPLE ANALYSIS - METALs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 STATE DEFAULT BACKGROUND	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-218	HS-SB-219	HS-SB-219	HS-SB-220	HS-SB-220	HS-SB-221
SAMPLE NAME								HS-SB-218 (14-16)	HS-SB-219 (4-6)	HS-SB-219 (10-12)	HS-SB-220 (2-4)	HS-SB-220 (16-18)	HS-SB-221 (4-6)
DEPTH (FT)								14 - 16	4 - 6	10 - 12	2 - 4	16 - 18	4 - 6
LAB ID								TF06038-007	TF08023-018	TF08023-019	TF12017-004	TF12017-005	TF12017-006
SAMPLE DATE								06/05/2018	06/08/2018	06/08/2018	06/11/2018	06/11/2018	06/11/2018
Parameter (UG/KG)													
Aluminum	6,900,000	1,000	NA	NA	NA	NA	50,000,000	***9,500,000***	***13,000,000***	***12,000,000***	***11,000,000***	***3,800,000***	***16,000,000***
Antimony	NA	4,300	94,000	NA	NA	13,000,000	180,000	<470	<460	<430	<470	<470	<540
Arsenic	5,800	4,600	4,600	NA	NA	720,000	7,600	4,200	4,600	***9,300***	3,900	2,400	***5,400***
Barium	75,000	1,300,000	NA	NA	NA	330,000,000	37,000,000	31,000	55,000	63,000	47,000	13,000	56,000
Beryllium	NA	51,000	NA	NA	NA	1,300,000	410,000	460	550	660	510	180	780
Boron	NA	10,000	140,000	NA	NA	NA	48,000,000	<12,000	<12,000	<11,000	<12,000	<12,000	<14,000
Cadmium	1,200	6,000	NA	NA	NA	1,700,000	550,000	34 J	<120	48 J	60 J	24 J	64 J
Chromium	18,000	1,000,000,000	NA	NA	NA	330,000,000	790,000,000	14,000 B	16,000	17,000	15,000	11,000	23,000
Hexavalent Chromium	NA	30,000	3,300	NA	NA	260,000	2,500,000	230 J	640 J	570 J	<1,100	<1,000	280 J
Cobalt	6,800	800	2,000	NA	NA	13,000,000	2,600,000	***5,000***	***8,300***	***8,000***	***5,600***	***3,100***	***10,000***
Copper	32,000	5,800,000	NA	NA	NA	130,000,000	20,000,000	8,900	5,500	14,000	8,000	5,600	15,000
Iron	12,000,000	6,000	NA	NA	NA	NA	160,000,000	***13,000,000***	***17,000,000***	***21,000,000***	***14,000,000***	***9,500,000***	***21,000,000***
Lead	21,000	700,000	NA	NA	NA	100,000,000	400,000	5,800	8,600	8,900	5,300	2,400	8,900
Magnesium	NA	8,000,000	NA	NA	NA	6,700,000,000	1,000,000,000	6,600,000	3,100,000	3,900,000	***12,000,000***	***25,000,000***	2,500,000
Mercury	130	1,700	50	48,000	52,000	20,000,000	160,000	<80	<89	32 J	<82	<79	<93
Molybdenum	NA	1,500	64,000	NA	NA	NA	2,600,000	<2,300	<2,300	<2,200	<2,400	<2,300	<2,700
Nickel	20,000	100,000	NA	NA	NA	13,000,000	40,000,000	12,000	11,000	20,000	14,000	8,300	22,000
Selenium	410	4,000	400	NA	NA	130,000,000	2,600,000	<1,200	<1,200	<1,100	<1,200	<1,200	<1,400
Silver	1,000	4,500	100	NA	NA	6,700,000	2,500,000	<230	<230	<220	<240	<230	<270
Sodium	NA	NA	NA	NA	NA	NA	NA	<94,000	<91,000	<87,000	53,000 J	70,000 J	<110,000
Thallium	NA	2,300	4,200	NA	NA	13,000,000	35,000	96 J	110 J	170	110 J	38 J	150
Vanadium	NA	72,000	430,000	NA	NA	NA	750,000	13,000	18,000	26,000	23,000	12,000	30,000
Zinc	47,000	2,400,000	NA	NA	NA	NA	170,000,000	24,000	29,000	45,000	25,000	16,000	38,000
Titanium	NA	NA	NA	NA	NA	NA	NA	180,000	250,000	210,000	230,000	220,000	280,000

TABLE 3
SUMMARY OF SOIL SAMPLE ANALYSIS - METALs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 STATE DEFAULT BACKGROUND	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-221	HS-SB-222	HS-SB-222	HS-SB-223	HS-SB-223	HS-SB-224
SAMPLE NAME								HS-SB-221 (6-8)	HS-SB-222 (2-4)	HS-SB-222 (6-8)	HS-SB-223 (2-4)	HS-SB-223 (10-12)	HS-SB-224 (8-10)
DEPTH (FT)								6 - 8	2 - 4	6 - 8	2 - 4	10 - 12	8 - 10
LAB ID								TF12017-007	TF12017-002	TF12017-003	TF08023-013	TF08023-014	TF13021-012
SAMPLE DATE								06/11/2018	06/11/2018	06/11/2018	06/08/2018	06/08/2018	06/12/2018
Parameter (UG/KG)													
Aluminum	6,900,000	1,000	NA	NA	NA	NA	50,000,000	***10,000,000***	***15,000,000***	***3,600,000***	***5,400,000***	***1,200,000***	10,000,000 B
Antimony	NA	4,300	94,000	NA	NA	13,000,000	180,000	<530	<580	<480	<390	<370	<450
Arsenic	5,800	4,600	4,600	NA	NA	720,000	7,600	3,900	2,300	1,300	2,200	1,000	***8,400***
Barium	75,000	1,300,000	NA	NA	NA	330,000,000	37,000,000	40,000	54,000	14,000	20,000	4,700	42,000
Beryllium	NA	51,000	NA	NA	NA	1,300,000	410,000	530	560	160	300	69 J	510
Boron	NA	10,000	140,000	NA	NA	NA	48,000,000	<14,000	<15,000	<12,000	<10,000	<9,600	<12,000
Cadmium	1,200	6,000	NA	NA	NA	1,700,000	550,000	55 J	34 J	<120	32 J	<96	50 J
Chromium	18,000	1,000,000,000	NA	NA	NA	330,000,000	790,000,000	14,000	21,000	6,000	8,600	11,000	15,000
Hexavalent Chromium	NA	30,000	3,300	NA	NA	260,000	2,500,000	<1,200	450 J	370 J	320 J	380 J	<1,100
Cobalt	6,800	800	2,000	NA	NA	13,000,000	2,600,000	***5,900***	***5,700***	***1,300***	***3,000***	860 J	***5,300***
Copper	32,000	5,800,000	NA	NA	NA	130,000,000	20,000,000	9,900	8,000	1,700	5,400	2,600	12,000
Iron	12,000,000	6,000	NA	NA	NA	NA	160,000,000	***14,000,000***	***17,000,000***	***5,600,000***	***7,500,000***	***3,300,000***	***21,000,000***
Lead	21,000	700,000	NA	NA	NA	100,000,000	400,000	5,400	7,900	2,100	4,000	1,000	9,700
Magnesium	NA	8,000,000	NA	NA	NA	6,700,000,000	1,000,000,000	***12,000,000***	2,000,000	650,000	***18,000,000***	5,300,000	***12,000,000***
Mercury	130	1,700	50	48,000	52,000	20,000,000	160,000	<93	<85	<87	<89	<85	<83
Molybdenum	NA	1,500	64,000	NA	NA	NA	2,600,000	<2,600	<2,900	<2,400	<1,900	***2,200***	590 J
Nickel	20,000	100,000	NA	NA	NA	13,000,000	40,000,000	15,000	16,000	3,900	7,700	2,700	14,000
Selenium	410	4,000	400	NA	NA	130,000,000	2,600,000	<1,400	<1,500	<1,200	<1,000	<960	<1,200
Silver	1,000	4,500	100	NA	NA	6,700,000	2,500,000	<260	<290	<240	<190	<180	<230
Sodium	NA	NA	NA	NA	NA	NA	NA	49,000 J	<120,000	<95,000	36,000 J	<74,000	46,000 J
Thallium	NA	2,300	4,200	NA	NA	13,000,000	35,000	110 J	130 J	36 J	54 J	<96	130
Vanadium	NA	72,000	430,000	NA	NA	NA	750,000	22,000	28,000	8,100	8,000	3,200	23,000
Zinc	47,000	2,400,000	NA	NA	NA	NA	170,000,000	27,000	38,000	15,000	24,000	6,700	37,000
Titanium	NA	NA	NA	NA	NA	NA	NA	240,000	240,000	140,000	170,000	67,000	250,000

TABLE 3
SUMMARY OF SOIL SAMPLE ANALYSIS - METALs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 STATE DEFAULT BACKGROUND	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-224	HS-SB-225	HS-SB-225
SAMPLE NAME								HS-SB-224 (10-12)	HS-SB-225 (2-4)	HS-SB-225 (18-20)
DEPTH (FT)								10 - 12	2 - 4	18 - 20
LAB ID								TF13021-013	TF12017-008	TF12017-009
SAMPLE DATE								06/12/2018	06/11/2018	06/11/2018
Parameter (UG/KG)										
Aluminum	6,900,000	1,000	NA	NA	NA	NA	50,000,000	13,000,000 B	***22,000,000***	***690,000***
Antimony	NA	4,300	94,000	NA	NA	13,000,000	180,000	<520	<530	<520
Arsenic	5,800	4,600	4,600	NA	NA	720,000	7,600	***7,900***	***7,100***	480 J
Barium	75,000	1,300,000	NA	NA	NA	330,000,000	37,000,000	51,000	80,000	2,600
Beryllium	NA	51,000	NA	NA	NA	1,300,000	410,000	690	1,000	42 J
Boron	NA	10,000	140,000	NA	NA	NA	48,000,000	<13,000	<14,000	<14,000
Cadmium	1,200	6,000	NA	NA	NA	1,700,000	550,000	59 J	80 J	<140
Chromium	18,000	1,000,000,000	NA	NA	NA	330,000,000	790,000,000	20,000	31,000	2,000
Hexavalent Chromium	NA	30,000	3,300	NA	NA	260,000	2,500,000	<1,200	<1,200	<1,100
Cobalt	6,800	800	2,000	NA	NA	13,000,000	2,600,000	***7,300***	***9,200***	550 J
Copper	32,000	5,800,000	NA	NA	NA	130,000,000	20,000,000	14,000	19,000	940 J
Iron	12,000,000	6,000	NA	NA	NA	NA	160,000,000	***22,000,000***	***27,000,000***	***1,700,000***
Lead	21,000	700,000	NA	NA	NA	100,000,000	400,000	7,200	11,000	690
Magnesium	NA	8,000,000	NA	NA	NA	6,700,000,000	1,000,000,000	***12,000,000***	4,100,000	3,200,000
Mercury	130	1,700	50	48,000	52,000	20,000,000	160,000	<88	38 J	<81
Molybdenum	NA	1,500	64,000	NA	NA	NA	2,600,000	<2,600	<2,600	<2,600
Nickel	20,000	100,000	NA	NA	NA	13,000,000	40,000,000	20,000	28,000	1,400
Selenium	410	4,000	400	NA	NA	130,000,000	2,600,000	<1,300	<1,400	<1,400
Silver	1,000	4,500	100	NA	NA	6,700,000	2,500,000	<260	<260	<260
Sodium	NA	NA	NA	NA	NA	NA	NA	58,000 J	<110,000	<100,000
Thallium	NA	2,300	4,200	NA	NA	13,000,000	35,000	140	190	<140
Vanadium	NA	72,000	430,000	NA	NA	NA	750,000	30,000	40,000	2,800
Zinc	47,000	2,400,000	NA	NA	NA	NA	170,000,000	37,000	51,000	2,800
Titanium	NA	NA	NA	NA	NA	NA	NA	310,000	340,000	55,000

TABLE 4
SUMMARY OF SOIL SAMPLE ANALYSIS - OTHER INORGANICs/GENERAL CHEMISTRY
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-117	HS-SB-117	HS-SB-117	HS-SB-120	HS-SB-120	HS-SB-120
SAMPLE NAME							HS-SB-117 (1-2)	HS-SB-117 (7-8)	HS-SB-117 (12-13)	HS-SB-120 (3-4)	HS-SB-120 (6-7)	HS-SB-120 (14-15)
DEPTH (FT)							1 - 2	7 - 8	12 - 13	3 - 4	6 - 7	14 - 15
DATE							6/14/2018	6/14/2018	6/14/2018	6/14/2018	6/14/2018	6/14/2018
Parameter (UG/KG)												
Acetic Acid	84,000.00	NA	NA	NA	17,000,000,000.00	130,000,000.00	<21,000	<21,000	<22,000	<23,000	<22,000	<24,000
Chloride (soluble)	5,000,000.00	NA	NA	NA	NA	500,000.00						
Cyanide, Available	4,000.00	100	NA	NA	250,000.00	12,000.00	61	<42	<44	<46	<45	<49
Formic Acid	200,000.00	NA	1,500,000.00	210,000.00	130,000,000.00	320,000,000.00	<21,000	<21,000	<22,000	<23,000	<22,000	<24,000
Phosphorus	1,300,000.00	NA	NA	NA	67,000,000.00	1,000,000,000.00						
Sulfate (soluble)	5,000,000.00	NA	NA	NA	NA	NA						
Sulfide (Acid Soluble)	NA	NA	NA	NA	NA	NA	<110,000	<110,000	<110,000	<110,000	<110,000	<120,000
Nitrate-Nitrite - N (soluble)	NA	NA	NA	NA	NA	NA						
Ammonia - N (gas diffusion)	NA	NA	NA	NA	NA	NA						

TABLE 4
SUMMARY OF SOIL SAMPLE ANALYSIS - OTHER INORGANICs/GENERAL CHEMISTRY
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-123	HS-SB-123	HS-SB-123	HS-SB-124	HS-SB-124	HS-SB-124
SAMPLE NAME							HS-SB-123 (6-7)	HB-SB-123 (7-8)	HS-SB-123 (12-13)	HS-SB-124 (6-7)	HS-SB-124 (6-7) DUP	HS-SB-124 (7-8)
DEPTH (FT)							6 - 7	7 - 8	12 - 13	6 - 7	6 - 7	7 - 8
DATE							6/12/2018	6/12/2018	6/12/2018	6/12/2018	6/12/2018	6/12/2018
Parameter (UG/KG)												
Acetic Acid	84,000.00	NA	NA	NA	17,000,000,000.00	130,000,000.00						
Chloride (soluble)	5,000,000.00	NA	NA	NA	NA	500,000.00	<11,000	<11,000	<12,000	<12,000	<12,000	<12,000
Cyanide, Available	4,000.00	100	NA	NA	250,000.00	12,000.00	7.4 BJ	51 BJ	26 BJ	130 BJ	120 BJ	18 BJ
Formic Acid	200,000.00	NA	1,500,000.00	210,000.00	130,000,000.00	320,000,000.00						
Phosphorus	1,300,000.00	NA	NA	NA	67,000,000.00	1,000,000,000.00	260,000	280,000	270,000	260,000	190,000	270,000
Sulfate (soluble)	5,000,000.00	NA	NA	NA	NA	NA	<11,000	<11,000	<12,000	<12,000	<12,000	<12,000
Sulfide (Acid Soluble)	NA	NA	NA	NA	NA	NA						
Nitrate-Nitrite - N (soluble)	NA	NA	NA	NA	NA	NA	160 J	150 J	140 J	<230	<240	<230
Ammonia - N (gas diffusion)	NA	NA	NA	NA	NA	NA	1,000 J	<1,100	<1,200	760 J	620 J	470 J

TABLE 4
SUMMARY OF SOIL SAMPLE ANALYSIS - OTHER INORGANICs/GENERAL CHEMISTRY
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-124	HS-SB-125	HS-SB-125	HS-SB-125	HS-SB-125	HS-SB-127
SAMPLE NAME							HS-SB-124 (9-10)	HB-SB-125 (1-2)	HB-SB-125 (1-2) DUP	HB-SB-125 (8-9)	HB-SB-125 (11-12)	HS-SB-127 (0-1)
DEPTH (FT)							9 - 10	1 - 2	1 - 2	8 - 9	11 - 12	0 - 1
DATE							6/12/2018	6/13/2018	6/13/2018	6/13/2018	6/13/2018	6/14/2018
Parameter (UG/KG)												
Acetic Acid	84,000.00	NA	NA	NA	17,000,000,000.00	130,000,000.00						<22,000
Chloride (soluble)	5,000,000.00	NA	NA	NA	NA	500,000.00	<12,000	<11,000	<11,000	<12,000	<13,000	
Cyanide, Available	4,000.00	100	NA	NA	250,000.00	12,000.00	60 BJ	100 BJ	130 BJ	14 BJ	54 BJ	<43
Formic Acid	200,000.00	NA	1,500,000.00	210,000.00	130,000,000.00	320,000,000.00						<22,000
Phosphorus	1,300,000.00	NA	NA	NA	67,000,000.00	1,000,000,000.00	160,000	150,000	180,000 S	370,000 S	450,000	
Sulfate (soluble)	5,000,000.00	NA	NA	NA	NA	NA	<12,000	<11,000	<11,000	<12,000	<13,000	
Sulfide (Acid Soluble)	NA	NA	NA	NA	NA	NA						<110,000
Nitrate-Nitrite - N (soluble)	NA	NA	NA	NA	NA	NA	<230	<230	<230	<240	<250	
Ammonia - N (gas diffusion)	NA	NA	NA	NA	NA	NA	<1,200	590 BJ	590 BJ	590 BJS	<1,300	

TABLE 4
SUMMARY OF SOIL SAMPLE ANALYSIS - OTHER INORGANICs/GENERAL CHEMISTRY
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-127	HS-SB-127	HS-SB-128	HS-SB-128	HS-SB-128	HS-SB-129
SAMPLE NAME							HS-SB-127 (2-3)	HS-SB-127 (10-11)	HB-SB-128 (5-6)	HB-SB-128 (6-7)	HB-SB-128 (14-15)	HS-SB-129 (7-8)
DEPTH (FT)							2 - 3	10 - 11	5 - 6	6 - 7	14 - 15	7 - 8
DATE							6/14/2018	6/14/2018	6/13/2018	6/13/2018	6/13/2018	6/12/2018
Parameter (UG/KG)												
Acetic Acid	84,000.00	NA	NA	NA	17,000,000,000.00	130,000,000.00	<22,000	<21,000				<23,000
Chloride (soluble)	5,000,000.00	NA	NA	NA	NA	500,000.00			<11,000	<11,000	<12,000	<12,000
Cyanide, Available	4,000.00	100	NA	NA	250,000.00	12,000.00	<44	82	55 BJ	56 BJ	17 BJ	<48
Formic Acid	200,000.00	NA	1,500,000.00	210,000.00	130,000,000.00	320,000,000.00	<22,000	<21,000				<23,000
Phosphorus	1,300,000.00	NA	NA	NA	67,000,000.00	1,000,000,000.00			140,000	82,000	94,000	220,000
Sulfate (soluble)	5,000,000.00	NA	NA	NA	NA	NA			<11,000	<11,000	<12,000	16,000
Sulfide (Acid Soluble)	NA	NA	NA	NA	NA	NA	<110,000	<110,000				<120,000
Nitrate-Nitrite - N (soluble)	NA	NA	NA	NA	NA	NA			<210	<210	<250	<250
Ammonia - N (gas diffusion)	NA	NA	NA	NA	NA	NA			<1,100	<1,100	<1,200	110,000 B

TABLE 4
SUMMARY OF SOIL SAMPLE ANALYSIS - OTHER INORGANICs/GENERAL CHEMISTRY
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-129	HS-SB-129	HS-SB-201	HS-SB-201	HS-SB-202	HS-SB-202
SAMPLE NAME							HS-SB-129 (8-9)	HS-SB-129 (10-11)	HS-SB-201 (2-4)	HS-SB-201 (10-12)	HS-SB-202 (6-8)	HS-SB-202 (8-10)
DEPTH (FT)							8 - 9	10 - 11	2 - 4	10 - 12	6 - 8	8 - 10
DATE							6/12/2018	6/12/2018	6/7/2018	6/7/2018	6/5/2018	6/5/2018
Parameter (UG/KG)												
Acetic Acid	84,000.00	NA	NA	NA	17,000,000,000.00	130,000,000.00	<24,000	<23,000				
Chloride (soluble)	5,000,000.00	NA	NA	NA	NA	500,000.00	2,400 BJ	<12,000	3,600 J	6,000 J	3,400 J	4,000 J
Cyanide, Available	4,000.00	100	NA	NA	250,000.00	12,000.00	<48	72	68 BJ	35 BJ	50 BJ	50 BJ
Formic Acid	200,000.00	NA	1,500,000.00	210,000.00	130,000,000.00	320,000,000.00	<24,000	<23,000				
Phosphorus	1,300,000.00	NA	NA	NA	67,000,000.00	1,000,000,000.00	280,000	260,000	440,000	110,000	250,000	97,000 S
Sulfate (soluble)	5,000,000.00	NA	NA	NA	NA	NA	<12,000	<12,000	<12,000	<10,000	12,000 B	<11,000
Sulfide (Acid Soluble)	NA	NA	NA	NA	NA	NA	<120,000	<120,000				
Nitrate-Nitrite - N (soluble)	NA	NA	NA	NA	NA	NA	<240	200 J	200 J	160 J	1,300	160 JS
Ammonia - N (gas diffusion)	NA	NA	NA	NA	NA	NA	170,000 B	20,000	<1,200	<1,000	540 J	<1,100

TABLE 4
SUMMARY OF SOIL SAMPLE ANALYSIS - OTHER INORGANICs/GENERAL CHEMISTRY
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-202	HS-SB-203	HS-SB-203	HS-SB-204	HS-SB-204	HS-SB-205
SAMPLE NAME							HS-SB-202 (8-10) DUP	HS-SB-203 (8-10)	HS-SB-203 (16-18)	HS-SB-204 (4-6)	HS-SB-204 (10-12)	HS-SB-205 (10-12)
DEPTH (FT)							8 - 10	8 - 10	16 - 18	4 - 6	10 - 12	10 - 12
DATE							6/5/2018	6/4/2018	6/4/2018	6/6/2018	6/6/2018	6/1/2018
Parameter (UG/KG)												
Acetic Acid	84,000.00	NA	NA	NA	17,000,000,000.00	130,000,000.00						
Chloride (soluble)	5,000,000.00	NA	NA	NA	NA	500,000.00	4,400 J	<11,000	5,000 J	2,300 J	3,400 J	3,800 J
Cyanide, Available	4,000.00	100	NA	NA	250,000.00	12,000.00	32 BJ	59 BJ	58 BJ	49 BJ	30 BJ	56 BJ
Formic Acid	200,000.00	NA	1,500,000.00	210,000.00	130,000,000.00	320,000,000.00						
Phosphorus	1,300,000.00	NA	NA	NA	67,000,000.00	1,000,000,000.00	120,000	87,000	49,000	110,000	130,000	99,000 S
Sulfate (soluble)	5,000,000.00	NA	NA	NA	NA	NA	10,000 BJS	<11,000	<10,000	<11,000	<11,000	<11,000
Sulfide (Acid Soluble)	NA	NA	NA	NA	NA	NA						
Nitrate-Nitrite - N (soluble)	NA	NA	NA	NA	NA	NA	820 S	810	160 J	170 J	160 JS	230
Ammonia - N (gas diffusion)	NA	NA	NA	NA	NA	NA	<1,100	<1,100	<1,000	<1,100	<1,100	<1,100

TABLE 4
SUMMARY OF SOIL SAMPLE ANALYSIS - OTHER INORGANICs/GENERAL CHEMISTRY
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-205	HS-SB-206	HS-SB-206	HS-SB-207	HS-SB-207	HS-SB-208
SAMPLE NAME							HS-SB-205 (18-20)	HS-SB-206 (10-12)	HS-SB-206 (14-16)	HS-SB-207 (2-4)	HS-SB-207 (8-10)	HS-SB-208 (0-2)
DEPTH (FT)							18 - 20	10 - 12	14 - 16	2 - 4	8 - 10	0 - 2
DATE							6/1/2018	6/4/2018	6/4/2018	6/4/2018	6/4/2018	6/7/2018
Parameter (UG/KG)												
Acetic Acid	84,000.00	NA	NA	NA	17,000,000,000.00	130,000,000.00						
Chloride (soluble)	5,000,000.00	NA	NA	NA	NA	500,000.00	4,000 J	<12,000	<12,000	<12,000	4,000 J	2,700 J
Cyanide, Available	4,000.00	100	NA	NA	250,000.00	12,000.00	28 BJ	23 BJ	41 BJ	120 BJ	<270	78 BJ
Formic Acid	200,000.00	NA	1,500,000.00	210,000.00	130,000,000.00	320,000,000.00						
Phosphorus	1,300,000.00	NA	NA	NA	67,000,000.00	1,000,000,000.00	160,000	510,000	210,000	220,000	260,000	250,000
Sulfate (soluble)	5,000,000.00	NA	NA	NA	NA	NA	9,600 JS	<12,000	<12,000	11,000 BJ	19,000 B	<11,000
Sulfide (Acid Soluble)	NA	NA	NA	NA	NA	NA						
Nitrate-Nitrite - N (soluble)	NA	NA	NA	NA	NA	NA	140 JS	2,700	680	180 J	400	560
Ammonia - N (gas diffusion)	NA	NA	NA	NA	NA	NA	<1,000	570 J	<1,200	<1,200	<1,100	1,700

TABLE 4
SUMMARY OF SOIL SAMPLE ANALYSIS - OTHER INORGANICs/GENERAL CHEMISTRY
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-208	HS-SB-209	HS-SB-210	HS-SB-210	HS-SB-211	HS-SB-211
SAMPLE NAME							HS-SB-208 (8-10)	HS-SB-209 (4-6)	HS-SB-210 (4-6)	HS-SB-210 (8-10)	HS-SB-211 (2-4)	HS-SB-211 (8-10)
DEPTH (FT)							8 - 10	4 - 6	4 - 6	8 - 10	2 - 4	8 - 10
DATE							6/7/2018	6/5/2018	6/1/2018	6/1/2018	6/6/2018	6/6/2018
Parameter (UG/KG)												
Acetic Acid	84,000.00	NA	NA	NA	17,000,000,000.00	130,000,000.00			<21,000	<22,000		
Chloride (soluble)	5,000,000.00	NA	NA	NA	NA	500,000.00	<11,000	<12,000	5,200 J	<12,000	3,900 J	3,900 J
Cyanide, Available	4,000.00	100	NA	NA	250,000.00	12,000.00	93 BJ	110 BJ	72 BJ	99 BJ	69 BJS	51 BJ
Formic Acid	200,000.00	NA	1,500,000.00	210,000.00	130,000,000.00	320,000,000.00			<21,000	<22,000		
Phosphorus	1,300,000.00	NA	NA	NA	67,000,000.00	1,000,000,000.00	110,000	280,000	260,000 S	300,000	180,000	410,000
Sulfate (soluble)	5,000,000.00	NA	NA	NA	NA	NA	<11,000	<12,000	<12,000	<12,000	11,000 BJ	12,000 B
Sulfide (Acid Soluble)	NA	NA	NA	NA	NA	NA			<110,000	<120,000		
Nitrate-Nitrite - N (soluble)	NA	NA	NA	NA	NA	NA	150 J	8,200	1,000	70 J	180 J	190 J
Ammonia - N (gas diffusion)	NA	NA	NA	NA	NA	NA	<1,100	460 J	<1,200	1,400	680 J	750 J

TABLE 4
SUMMARY OF SOIL SAMPLE ANALYSIS - OTHER INORGANICs/GENERAL CHEMISTRY
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-212	HS-SB-212	HS-SB-212	HS-SB-213	HS-SB-213	HS-SB-214
SAMPLE NAME							HS-SB-212 (0-2)	HS-SB-212 (0-2) DUP	HS-SB-212 (6-8)	HS-SB-213 (6-8)	HS-SB-213 (18-20)	HS-SB-214 (2-4)
DEPTH (FT)							0 - 2	0 - 2	6 - 8	6 - 8	18 - 20	2 - 4
DATE							6/7/2018	6/7/2018	6/7/2018	6/5/2018	6/5/2018	6/6/2018
Parameter (UG/KG)												
Acetic Acid	84,000.00	NA	NA	NA	17,000,000,000.00	130,000,000.00						
Chloride (soluble)	5,000,000.00	NA	NA	NA	NA	500,000.00	<10,000	<11,000	<11,000	3,000 J	3,000 J	<11,000
Cyanide, Available	4,000.00	100	NA	NA	250,000.00	12,000.00	70 BJ	120 BJ	90 BJ	80 BJ	80 BJ	170 B
Formic Acid	200,000.00	NA	1,500,000.00	210,000.00	130,000,000.00	320,000,000.00						
Phosphorus	1,300,000.00	NA	NA	NA	67,000,000.00	1,000,000,000.00	250,000 S	230,000 S	230,000	260,000	220,000	280,000
Sulfate (soluble)	5,000,000.00	NA	NA	NA	NA	NA	<10,000	<11,000	<11,000	12,000 B	11,000 B	<11,000
Sulfide (Acid Soluble)	NA	NA	NA	NA	NA	NA						
Nitrate-Nitrite - N (soluble)	NA	NA	NA	NA	NA	NA	150 J	150 J	680	190 J	180 J	170 JS
Ammonia - N (gas diffusion)	NA	NA	NA	NA	NA	NA	<1,000	<1,100	<1,100	<1,200	<1,100	<1,100

TABLE 4
SUMMARY OF SOIL SAMPLE ANALYSIS - OTHER INORGANICs/GENERAL CHEMISTRY
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-214	HS-SB-215	HS-SB-215	HS-SB-216	HS-SB-216	HS-SB-217
SAMPLE NAME							HS-SB-214 (18-20)	HS-SB-215 (0-2)	HS-SB-215 (10-12)	HS-SB-216 (2-4)	HS-SB-216 (8-10)	HS-SB-217 (2-4)
DEPTH (FT)							18 - 20	0 - 2	10 - 12	2 - 4	8 - 10	2 - 4
DATE							6/6/2018	6/7/2018	6/7/2018	6/8/2018	6/8/2018	6/8/2018
Parameter (UG/KG)												
Acetic Acid	84,000.00	NA	NA	NA	17,000,000,000.00	130,000,000.00						
Chloride (soluble)	5,000,000.00	NA	NA	NA	NA	500,000.00	3,300 J	<12,000	9,600 J	<12,000	4,200 J	2,900 J
Cyanide, Available	4,000.00	100	NA	NA	250,000.00	12,000.00	<270	110 BJ	34 BJ	93 BJ	<270	0.91 BJ
Formic Acid	200,000.00	NA	1,500,000.00	210,000.00	130,000,000.00	320,000,000.00						
Phosphorus	1,300,000.00	NA	NA	NA	67,000,000.00	1,000,000,000.00	260,000	190,000	***1,500,000***	220,000	250,000	310,000
Sulfate (soluble)	5,000,000.00	NA	NA	NA	NA	NA	52,000	<12,000	<11,000	<12,000	<11,000	<12,000
Sulfide (Acid Soluble)	NA	NA	NA	NA	NA	NA						
Nitrate-Nitrite - N (soluble)	NA	NA	NA	NA	NA	NA	360	180 J	160 J	180 J	330	180 J
Ammonia - N (gas diffusion)	NA	NA	NA	NA	NA	NA	730 J	650 J	<1,100	<1,200	<1,100	<1,200

TABLE 4
SUMMARY OF SOIL SAMPLE ANALYSIS - OTHER INORGANICs/GENERAL CHEMISTRY
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-217	HS-SB-218	HS-SB-218	HS-SB-219	HS-SB-219	HS-SB-220
SAMPLE NAME							HS-SB-217 (12-14)	HS-SB-218 (2-4)	HS-SB-218 (14-16)	HS-SB-219 (4-6)	HS-SB-219 (10-12)	HS-SB-220 (2-4)
DEPTH (FT)							12 - 14	2 - 4	14 - 16	4 - 6	10 - 12	2 - 4
DATE							6/8/2018	6/5/2018	6/5/2018	6/8/2018	6/8/2018	6/11/2018
Parameter (UG/KG)												
Acetic Acid	84,000.00	NA	NA	NA	17,000,000,000.00	130,000,000.00						
Chloride (soluble)	5,000,000.00	NA	NA	NA	NA	500,000.00	2,900 J	<11,000	5,100 J	<12,000	<12,000	<11,000
Cyanide, Available	4,000.00	100	NA	NA	250,000.00	12,000.00	370 B	110 BJ	75 BJ	110 BJ	66 BJ	11 BJ
Formic Acid	200,000.00	NA	1,500,000.00	210,000.00	130,000,000.00	320,000,000.00						
Phosphorus	1,300,000.00	NA	NA	NA	67,000,000.00	1,000,000,000.00	71,000	110,000	150,000	260,000	310,000	240,000
Sulfate (soluble)	5,000,000.00	NA	NA	NA	NA	NA	<10,000	<11,000	<11,000	<12,000	<12,000	<11,000
Sulfide (Acid Soluble)	NA	NA	NA	NA	NA	NA						
Nitrate-Nitrite - N (soluble)	NA	NA	NA	NA	NA	NA	160 J	1,700	1,100	310	2,900	<220
Ammonia - N (gas diffusion)	NA	NA	NA	NA	NA	NA	<1,000	470 J	540 J	470 J	<1,200	<1,100

TABLE 4
SUMMARY OF SOIL SAMPLE ANALYSIS - OTHER INORGANICs/GENERAL CHEMISTRY
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-220	HS-SB-221	HS-SB-221	HS-SB-222	HS-SB-222	HS-SB-223
SAMPLE NAME							HS-SB-220 (16-18)	HS-SB-221 (4-6)	HS-SB-221 (6-8)	HS-SB-222 (2-4)	HS-SB-222 (6-8)	HS-SB-223 (2-4)
DEPTH (FT)							16 - 18	4 - 6	6 - 8	2 - 4	6 - 8	2 - 4
DATE							6/11/2018	6/11/2018	6/11/2018	6/11/2018	6/11/2018	6/8/2018
Parameter (UG/KG)												
Acetic Acid	84,000.00	NA	NA	NA	17,000,000,000.00	130,000,000.00						
Chloride (soluble)	5,000,000.00	NA	NA	NA	NA	500,000.00	4,200 J	<12,000	<12,000	3,200 J	<11,000	2,600 J
Cyanide, Available	4,000.00	100	NA	NA	250,000.00	12,000.00	27 BJ	48 BJ	12 BJ	71 BJ	31 BJ	<260
Formic Acid	200,000.00	NA	1,500,000.00	210,000.00	130,000,000.00	320,000,000.00						
Phosphorus	1,300,000.00	NA	NA	NA	67,000,000.00	1,000,000,000.00	170,000	290,000	260,000	310,000	270,000	100,000
Sulfate (soluble)	5,000,000.00	NA	NA	NA	NA	NA	<10,000	<12,000	<12,000	<12,000	<11,000	<11,000
Sulfide (Acid Soluble)	NA	NA	NA	NA	NA	NA						
Nitrate-Nitrite - N (soluble)	NA	NA	NA	NA	NA	NA	<210	<230	140 J	72 J	64 J	160 J
Ammonia - N (gas diffusion)	NA	NA	NA	NA	NA	NA	<1,000	<1,200	<1,200	<1,200	<1,100	<1,100

TABLE 4
SUMMARY OF SOIL SAMPLE ANALYSIS - OTHER INORGANICs/GENERAL CHEMISTRY
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

LOCATION NAME	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF DRINKING WATER USES - RESIDENTIAL	MDEQ PART 201 SOIL CRITERIA PROTECTIVE OF GROUNDWATER SURFACE WATER INTERFACE	MDEQ PART 201 SOIL VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 INFINITE SOURCE VOLATILE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 PARTICULATE SOIL INHALATION CRITERIA - RESIDENTIAL	MDEQ PART 201 DIRECT CONTACT CRITERIA - RESIDENTIAL	HS-SB-223	HS-SB-224	HS-SB-224	HS-SB-225	HS-SB-225
SAMPLE NAME							HS-SB-223 (10-12)	HS-SB-224 (8-10)	HS-SB-224 (10-12)	HS-SB-225 (2-4)	HS-SB-225 (18-20)
DEPTH (FT)							10 - 12	8 - 10	10 - 12	2 - 4	18 - 20
DATE							6/8/2018	6/12/2018	6/12/2018	6/11/2018	6/11/2018
Parameter (UG/KG)											
Acetic Acid	84,000.00	NA	NA	NA	17,000,000,000.00	130,000,000.00					
Chloride (soluble)	5,000,000.00	NA	NA	NA	NA	500,000.00	4,200 J	3,400 BJ	<12,000	<12,000	3,000 J
Cyanide, Available	4,000.00	100	NA	NA	250,000.00	12,000.00	29 BJ	25 BJ	76 BJ	25 BJ	22 BJ
Formic Acid	200,000.00	NA	1,500,000.00	210,000.00	130,000,000.00	320,000,000.00					
Phosphorus	1,300,000.00	NA	NA	NA	67,000,000.00	1,000,000,000.00	44,000	360,000	270,000	300,000	36,000 S
Sulfate (soluble)	5,000,000.00	NA	NA	NA	NA	NA	<10,000	<11,000	<12,000	<12,000	<11,000
Sulfide (Acid Soluble)	NA	NA	NA	NA	NA	NA					
Nitrate-Nitrite - N (soluble)	NA	NA	NA	NA	NA	NA	310	<230	<230	250	120 JS
Ammonia - N (gas diffusion)	NA	NA	NA	NA	NA	NA	<1,000	<1,100	640 BJ	<1,200	<1,100

TABLE NOTES
SUMMARY OF SOIL ANALYTICAL DATA
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, KENT COUNTY, MICHIGAN

NOTES:
1. Concentration and criteria units are micro-grams per kilogram or parts per billion; "< RL" or "<PQL" indicates the compound was analyzed for but not detected above the method detection limit; RL = Reporting Limit; PQL=Pratical Quantitation Limit.

2. BOLD, Italic number indicates that compound was detected above one of the listed cleanup criteria.

3. MDEQ Part 201 Residential Cleanup Criteria were based on the Part 201 Cleanup Cirteria Rules dated December, 2013, Revised June 25, 2018.

4. Part 201 Criteria for total chromium is not available, and the criteria for chromium (III) are used in the table.

These tables include Michigan's generic residential cleanup criteria for selected exposure pathways. This are provided for reference only, not to imply they will be the basis of any future removal, remediation, or closure actions.

If waste samples are included in these tables, the constituent concentrations are compared to the MDEQ Part 201 generic cleanup criteria. However, it is important to note the comparison does not necessarily imply applicability of the criteria to the waste samples because the physical and chemical properties of the waste samples are expected to be different than the default values or assumptions used to derive the Generic Soil Cleanup Criteria in the Cleanup Criteria Requirements for Response Activity Rules (R299.1-299.50).

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-201 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/6/2018 **Finish Date:** 6/6/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** TBD **E** TBD **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** 125' West **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	57		ND	C-1:	1	TOPSOIL 0.2	
	S-1	0-2				5.3	S-1: 0-2": Dark brown, TOPSOIL.			
1							2-24": Brown, CLAY & SILT, trace fine Sand.	2	CLAY AND SILT	No Equipment Installed
2	S-2	2-4			2-4	3.4	S-2: Brown, Silty CLAY, trace fine Sand, trace Gravel.		2	
3										
4	S-3	4-6				2.6	S-3: 0-9": Brown, Silty CLAY, little fine to medium Sand.			
							9-12": No Recovery.		SILTY CLAY	
5	C-2	5-10	60	22		0.1	12-24": No Recovery. C-2:			
6	S-4	6-8				NA	S-4: No Recovery.			
7									7	
8	S-5	8-10					S-5: 0-2": No Recovery.			
							2-12": Brown, CLAY & SILT, trace fine to medium Sand.		CLAY AND SILT	
9						3.8	12-24": Brown, CLAY & SILT, little fine to medium Sand (4" fine to medium Sand lens at 17").			
10	C-3	10-15	60	60	10-12	0.1	C-3:		10	
	S-6	10-12				4.0	S-6: 0-16": Brown-light brown, fine to medium SAND, trace Silt, trace Gravel.		SAND	
11							16-24": Brown, Silty CLAY, trace Sand.		11.3	
12	S-7	12-14				3.4	S-7: 0-8": Brown, Silty CLAY, trace Sand.		SILTY CLAY	
							8-24": Brown, fine to coarse SAND, trace Silt, trace Gravel.		12.7	
13									SAND	
14										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.
2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-201

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-201
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/6/2018
Finish Date: 6/6/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N TBD **E** TBD
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-8	14-16				5.1	S-8: 0-19": Brown, fine to coarse SAND, trace Silt, trace Gravel.				
						4.8					
15						0.1	19-24": Light brown, fine to medium SAND, trace Silt.				
	C-4	15-20	60	60			C-4:				
										SAND	
16						3.4					
	S-9	16-18					S-9: 0-3": Light brown, fine to medium SAND, trace Silt.				
							3-15": Brown, fine to coarse SAND, trace Silt.				
17							15-21": Brown, Silty CLAY, trace fine Sand.				
							21-24": Light brown, fine to medium SAND, trace Silt.				17.3
										SILTY CLAY	17.8
18						1.0					
	S-10	18-20					S-10: Light brown, fine to medium SAND, trace Silt.				
19										SAND	
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-201

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-202 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/4/2018 **Finish Date:** 6/4/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** TBD **E** TBD **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** ~15 ft. West **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	39		ND	C-1:	1	TOPSOIL 0.2	
	S-1	0-2				1.4	S-1: 0-2": Dark brown, TOPSOIL, trace Organics.			
1							2-24": Brown, fine to coarse SAND, trace Silt, trace Organics, trace Gravel.	2		No Equipment Installed
2	S-2	2-4				0.5	S-2: 0-15": Brown, fine to medium SAND, trace Silt, trace Gravel.			
3							15-24": No Recovery.			
4	S-3	4-6				NA	S-3: 0-12": No Recovery.			
							12-24": No Recovery.			
5	C-2	5-10	60	32		ND	C-2:			
6	S-4	6-8			6-8	1.2	S-4: 0-16": No Recovery.			
							16-24": Brown, fine to coarse SAND, little Gravel, trace Silt.			
7									SAND	
8	S-5	8-10			8-10	ND	S-5: Brown, fine to coarse SAND, little Gravel, trace Silt.			
9										
10	C-3	10-15	60	36		ND	C-3:			
	S-6	10-12				NA	S-6: No Recovery.			
11										
12	S-7	12-14				0.5	S-7: Brown, fine to coarse SAND, little Gravel, trace Silt.			
13										
14										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.
2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-202

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-202
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/4/2018
Finish Date: 6/4/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N TBD **E** TBD
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
~15 ft. West
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-8	14-16				0.7	S-8: 0-8": Brown, fine to coarse SAND, little Gravel, trace Silt.				
15	C-4	15-20	60	48		ND	8-12": Light brown, fine to medium SAND, trace Silt. 12-24": No Recovery. C-4:				
16	S-9	16-18				1.1	S-9: 0-7": Brown, fine to coarse SAND, trace Gravel, trace Silt.				
17							7-24": Light brown, fine to medium SAND, trace Silt.			SAND	
18	S-10	18-20				1.1	S-10: Light brown, fine to medium SAND, trace Silt. (2" CLAY & SILT lens at 21")				
19											
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-202

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-203 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Joe Workman **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/4/2018 **Finish Date:** 6/4/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 587472.2154 **E** 12787814.39 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):**5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	46		ND	C-1:	1	TOPSOIL	0.2	
	S-1	0-2				0.4	S-1: 0-2" TOPSOIL.				
1							2-6": Brown, fine to medium SAND, trace Silt, trace Organics (Roots).	2			No Equipment Installed
							6-24": Brown, fine to medium SAND, trace Silt.				
2	S-2	2-4				0.9	S-2: 0-20": Brown, fine to medium SAND, trace Silt.				
							20-24": No Recovery.				
3											
4	S-3	4-5				NA	S-3: No Recovery.				
									SAND		
5	C-2	5-10	60	51		ND	C-2:				
	S-4	5-6				0.6	S-4: 0-9": No Recovery.				
6							9-12": Brown, fine to medium SAND, trace Silt.				
	S-5	6-8				1.0	S-5: Brown, fine to medium SAND, trace Silt.				
							2" lens of CLAY & SILT at ~18".				
7											
8	S-6	8-10			8-10	0.6	S-6: 0-9": Brown, fine to medium SAND, trace Silt.				
							9-24": Brown, CLAY & SILT.			8.8	
9									CLAY AND SILT		
10						ND				10	
	C-3	10-15	60	60			C-3:		SAND		
	S-7	10-12				1.0	S-7: 0-21": Brown, fine to medium SAND, trace Silt.			10.8	
11							21-24": Brown, CLAY & SILT.				
									CLAY AND SILT		
12	S-8	12-14				1.1	S-8: 0-2": Brown, CLAY & SILT.			12.2	
							2-24": Brown, fine to medium SAND, trace Gravel.				
13									SAND		
14											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.
2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Joe Workman

Boring No.:

HS-SB-203

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-203
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Joe Workman
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/4/2018
Finish Date: 6/4/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 587472.2154 **E** 12787814.39
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-9	14-15				0.9	S-9: 0-20": Brown, fine to medium SAND, trace Silt, trace Gravel.				
15						ND	20-24": Brown, fine to medium SAND, trace Silt.				
	C-4	15-20	60	46			C-4:				
	S-10	15-16				NA	S-10: No Recovery.				
16											
	S-11	16-18			16-18	1.2	S-11: 0-2": No Recovery. 2-24": Brown, fine to medium SAND, trace Silt.				
17										SAND	
18						1.0					
	S-12	18-20					S-12: Brown, fine to medium SAND, trace Silt.				
19											
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Joe Workman

Boring No.:
HS-SB-203

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-204 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/6/2018 **Finish Date:** 6/6/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 589060.4577 **E** 12788223.77 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	50		0.1	C-1:	1	TOPSOIL 0/1	No Equipment Installed
	S-1	0-2				1.2	S-1: 0-1": Dark brown, TOPSOIL, trace Organics.		SAND	
1							1-14": Dark brown, fine to medium SAND, trace Silt, trace Organics.	2	1	
							14-24": Brown, CLAY & SILT, little fine to medium Sand.			
2	S-2	2-4				2.2	S-2: Brown, CLAY & SILT, trace fine to medium Sand, trace Gravel, trace Organics.		CLAY AND SILT	
3										
4									4	
	S-3	4-6			4-6	2.6	S-3: 0-2": Brown, fine to coarse SAND, trace Silt.			
							2-24": No Recovery.			
5	C-2	5-10	60	35		0.4	C-2:			
6	S-4	6-8				1.2	S-4: 0-13": No Recovery.			
							13-22": Brown, fine to coarse SAND, trace Silt, trace Gravel.			
7							22-24": Light brown, fine to medium SAND, trace Silt.			
8	S-5	8-10				1.6	S-5: Light brown, fine to medium SAND, trace Silt.			
9									SAND	
10	C-3	10-15	60	46		0.4	C-3:			
	S-6	10-12			10-12	2.5	S-6: 0-14": No Recovery.			
11							14-20": Light brown, fine to medium SAND, trace Silt.			
							20-24": Brown, fine to coarse SAND, trace Silt.			
12	S-7	12-14				2.3	S-7: Light brown, fine to medium SAND, trace Silt.			
13										
14										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.1 ppmv.
2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-204

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-204
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/6/2018
Finish Date: 6/6/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 589060.4577 **E** 12788223.77
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-8	14-16				1.8	S-8: 0-12": Light brown, fine to medium SAND, trace Silt.				
						2.4	12-20": No Recovery.				
15						0.2	20-24": Light brown, fine to medium SAND, trace Silt.				
	C-4	15-20	60	52			C-4:				
16						3.3					
	S-9	16-18					S-9: 0-7": Light brown, fine to medium SAND, trace Silt.				
							7-14": Brown, fine to coarse SAND, trace Silt, trace				
17							Gravel.			SAND	
							14-24": Light brown, fine to medium SAND, trace Silt.				
18						1.7					
	S-10	18-20					S-10: Light brown, fine to medium SAND, trace Silt.				
19											
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-204

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-205 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Joe Workman **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/1/2018 **Finish Date:** 6/1/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588672.2178 **E** 12788223.77 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):**5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	58		0.5	C-1:	1	TOPSOIL 0.2	
	S-1	0-2				0.2	S-1: 0-2": TOPSOIL.			
1							2-4": Dark brown, CLAY & SILT, little fine to medium Sand, trace Organics.	2		No Equipment Installed
2	S-2	2-4				0.5	4-8": Brown, CLAY & SILT, some fine to coarse Sand, trace Silt, trace Organics. 8-24": Brown, CLAY & SILT, little fine to coarse Sand. S-2: Brown, CLAY & SILT, little fine to coarse Sand, trace Gravel, trace Silt.		CLAY AND SILT	
3										
4	S-3	4-5				0.3	S-3: 0-10": Brown, CLAY & SILT, little fine to coarse Sand, trace Gravel, trace Silt.			
5	C-2	5-10	60	31		0.5	10-12": No Recovery. C-2:			
	S-4	5-6				NA	S-4: No Recovery.			
6	S-5	6-8				1.4	S-5: 0-17": No Recovery. 17-24": Brown, fine to medium SAND, trace Silt, with ½" clay lens at ~12".		6	
7										
8	S-6	8-10				2.5	S-6: 0-17": Brown, fine to coarse SAND, trace Gravel, trace Silt. 17-24": Brown, fine to medium SAND, trace Silt with 1/2 Clay lens at ~12".			
9										
10	C-3	10-15	60	48		ND	C-3:		SAND	
	S-7	10-12			10-12	6.9	S-7: 0-12": No Recovery. 12-24": Brown, fine to medium SAND, trace Silt.			
11										
12	S-8	12-14				5.5	S-8: 0-2": Brown, fine to medium SAND, trace Silt. 2-24": Brown, fine to coarse SAND, trace Silt, trace Gravel.			
13										
14										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.3 ppmv.
2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Joe Workman

Boring No.:

HS-SB-205

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-205
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Joe Workman
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/1/2018
Finish Date: 6/1/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588672.2178 **E** 12788223.77
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-9	14-15				3.3	S-9: Brown, fine to coarse SAND, trace Silt, trace Gravel.				
15	C-4	15-20	60	44		0.2	C-4:				
	S-10	15-16				NA	S-10: No Recovery.				
16	S-11	16-18				-	S-11: 0-4": No Recovery. 4-24": Brown, fine to coarse SAND, trace Silt, trace Gravel.			SAND	
17											
18	S-12	18-20			18-20	5.0	S-12: Brown, fine to coarse SAND, trace Silt, trace Gravel.				
19											
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Joe Workman

Boring No.:
HS-SB-205

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-206 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/1/2018 **Finish Date:** 6/4/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588272.217 **E** 12788223.77 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):**5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	36		0.2	C-1:	1		TOPSOIL	0.2	
	S-1	0-2				1.7	S-1: 0-2": Dark brown, TOPSOIL.					
1							2-24": Brown, CLAY & SILT, trace fine Sand.			CLAY AND SILT		
2	S-2	2-4				2.3	S-2: 0-12": Brown-light brown, fine to coarse SAND, trace Silt.				2	
3							12-24": No Recovery.					
4	S-3	4-6				3.6	S-3: 0-19": No Recovery.					
							19-24": Brown, fine to coarse SAND, trace Silt, trace Gravel.					
5	C-2	5-10	60	53		0.3	C-2:			SAND		
6	S-4	6-8				2.7	S-4: Brown, fine to coarse SAND, trace Silt, trace Gravel.					Bentonite 0-13'
							Organics matter observed at 8' [root].					
7												
8	S-5	8-10				3.3	S-5: 0-8": Brown, fine to coarse SAND, trace Silt.					
							8-24": Brown, SILT & CLAY, trace fine Sand.					
9											9	
10	C-3	10-15	60	46		0.3	C-3:			SILT AND CLAY		
	S-6	10-12			10-12	5.2	S-6: 0-14": No Recovery.					
11							14-24": Brown, fine to coarse SAND, trace Silt.				11	
12	S-7	12-14				0.2	S-7: Brown, fine to coarse SAND, trace Silt.	2		SAND		
13												
14												1" PVC Riser 0-14.4'

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.3 ppmv.
2. Groundwater was encountered at approximately 12 feet below ground surface.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-206

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-206
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/1/2018
Finish Date: 6/4/2018
Final Depth (ft.): 20

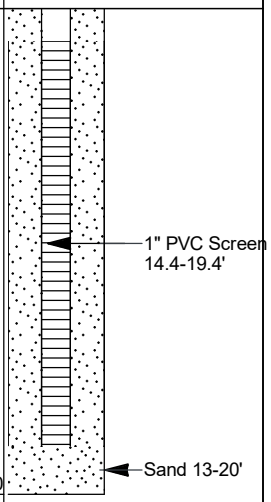
BORING COORDINATES (International Feet):
N 588272.217 **E** 12788223.77
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-8	14-16			14-16	0.1	S-8: Brown, fine to coarse SAND, trace Silt.				
15	C-4	15-20	60	60		ND	C-4:				
16	S-9	16-18				0.4	S-9: Brown, fine to coarse SAND, trace Silt.				
17										SAND	
18	S-10	18-20				0.5	S-10: Brown, fine to coarse SAND, trace Silt.				
19											
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											



Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-206

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	Wolverine World Wide House Street Rockford, Michigan	EXPLORATION NO.: HS-SB-207 SHEET: 1 of 2 PROJECT NO: 16.0062335.52 REVIEWED BY: SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/4/2018 **Finish Date:** 6/4/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 587872.2162 **E** 12788223.77 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):**5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	60		ND	C-1:	1	TOPSOIL	0.3	No Equipment Installed
	S-1	0-2				0.5	S-1: 0-4": Dark brown, TOPSOIL, trace Organics, trace Silt.				
1							4-24": Brown, CLAY & SILT, trace fine Sand, trace Organics.	2			
2	S-2	2-4			2-4	1.4	S-2: Brown, CLAY & SILT, trace fine Sand, trace Organics.				
3									CLAY AND SILT		
4	S-3	4-6				1.0	S-3: 0-12": Brown, CLAY & SILT, trace fine Sand, trace Organics.				
5	C-2	5-10	60	54		ND	12-18": No Recovery. 18-24": Brown, CLAY & SILT, trace fine Sand. C-2:				
6	S-4	6-8				1.1	S-4: 0-5": Brown, CLAY & SILT, trace fine Sand.			6.4	
7							5-22": Brown, fine to coarse SAND, trace Silt, trace Gravel. 22-24": Brown, CLAY & SILT, trace fine Sand, trace Gravel.		SAND	7.8	
8	S-5	8-10			8-10	1.0	S-5: 0-2": Brown, CLAY & SILT, trace fine Sand, trace Gravel.				
9							2-24": Brown, CLAY & SILT, trace fine Sand (Intermittent lenses of fine to medium SAND at 8'4" for 2" and 9'5" for 2").		CLAY AND SILT	10	
10	C-3	10-15	60	60		ND	C-3:		SAND	10.3	
	S-6	10-12				0.5	S-6: 0-3": Brown, fine to coarse SAND, trace Silt.				
11							3-24": Brown, SILT & CLAY, trace Gravel.				
12	S-7	12-14				1.2	S-7: 0-21": Brown, SILT & CLAY, trace Gravel.		SILT AND CLAY		
13							21-24": Brown, fine to medium SAND, trace Silt, trace Gravel.				
14										13.8	

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.
2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-207

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-207
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/4/2018
Finish Date: 6/4/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 587872.2162 **E** 12788223.77
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-8	14-16				1.0	S-8: 0-12": Light brown, fine to coarse SAND, trace Silt.				
15	C-4	15-20	60	60		ND	12-24": Light brown, fine to coarse SAND, trace Silt (1" CLAY & SILT lens at 15'6"). C-4:				
16	S-9	16-18				0.6	S-9: 0-22": Light brown, fine to coarse SAND, trace Silt. 22-24": Brown, CLAY & SILT, trace fine Sand.			SAND	
17											
18	S-10	18-20				1.0	S-10: Brown-light brown, fine to medium SAND, trace Silt.			CLAY AND SILT	17.8 / 18
19										SAND	
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-207

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-208 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Joe Workman **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/7/2018 **Finish Date:** 6/7/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** TBD **E** TBD **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** ~20' North **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	44	0-2	0.4	C-1:	1			
	S-1	0-2				2.3	S-1: 0-6": Dark brown, CLAY & SILT, some fine to medium Sand, trace Organics (Roots, Plant Debris).		CLAY AND SILT	0.5	
1							10-15": Brown, fine to medium SAND, trace Gravel.		SAND	1.3	
							15-22": Dark brown, CLAY & SILT, little fine to medium Sand, trace Organics (Roots).		CLAY AND SILT	1.8	
2	S-2	2-4				3.2	22-24": Brown, fine to medium SAND, trace Silt.		SAND	2	
							S-2: 0-20": Brown, fine to medium SAND, trace Silt.		CLAY AND SILT	2.8	
3							20-24": No Recovery.				Sand 0-12'
4	S-3	4-5				NA	S-3: No Recovery.				
5	C-2	5-10	60	44		0.1	C-2:				
	S-4	5-6				NA	S-4: No Recovery.				
6	S-5	6-8				3.9	S-5: 0-4": No Recovery.				
							4-24": Brown, fine to medium SAND, trace Silt, trace Organics (Roots, Leaves, Sticks).				
7									SAND		1" PVC Riser 1-15'
8	S-6	8-10			8-10	4.0	S-6: 0-18": Brown, fine to medium SAND, trace Silt, trace Organics (Roots, Leaves, Sticks).				
9							18-24": Gray, fine to medium SAND, trace Silt, trace Organics (Roots).				
10	C-3	10-15	60	52		0.1	C-3:				
	S-7	10-12				4.0	S-7: 0-8": No Recovery.				
11							8-17": Gray/brown, fine to medium SAND, trace Silt.				
							17-20": Dark brown, CLAY & SILT, little fine to medium Sand, trace Organics (Roots, Plant Debris).			11.7	
12	S-8	12-14				3.2	20-24": Gray, fine to medium SAND, trace Gravel, trace Silt.		CLAY AND SILT	11.8	
13							S-8: Gray, fine to medium SAND, trace Silt, trace Gravel with intermittent 1-4" lenses of brown and gray CLAY & SILT, little fine to coarse Sand, trace Gravel.	2	SAND		Bentonite 12-14'
14											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.3 ppmv.
2. Groundwater was encountered at approximately 13 feet below ground surface.

Logger Initials:

Joe Workman

Boring No.:

HS-SB-208

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-208
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Joe Workman
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/7/2018
Finish Date: 6/7/2018
Final Depth (ft.): 20

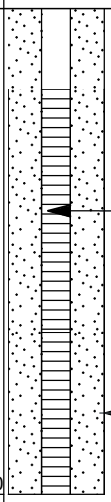
BORING COORDINATES (International Feet):
N TBD **E** TBD
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
~20' North
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-9	14-15				2.8	S-9: Gray, fine to medium SAND, trace Silt, trace Gravel with intermittent 1-4" lenses of brown and gray CLAY & SILT, little fine to coarse Sand, trace fine Gravel.				
15	C-4	15-20	60	37		0.3	C-4:				
	S-10	15-16				NA	S-10: No Recovery.				
16	S-11	16-18				3.1	S-11: 0-11": No Recovery. 11-24": Gray, fine to coarse SAND, little Gravel, trace Silt, with intermittent 2" lenses of gray, CLAY & SILT, some fine to coarse Sand, little Gravel.			SAND	
17											
18	S-12	18-20				2.7	S-12: 0-8": Gray, fine to coarse SAND, little Gravel, trace Silt, with intermittent 2" lenses of gray, CLAY & SILT, some fine to coarse Sand, little Gravel. 8-24": Brown, fine to medium SAND, trace Silt.				
19											
20											20
21							End of exploration at 20 feet.				
22											
23											
24											
25											
26											
27											
28											



Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Joe Workman

Boring No.:
HS-SB-208

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-209 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Joe Workman **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/5/2018 **Finish Date:** 6/5/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 589072.2178 **E** 12788623.77 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	48		0.2	C-1:	1	CLAY AND SILT	0.5	No Equipment Installed
	S-1	0-2				1.0	S-1: 0-7": Dark brown, CLAY & SILT, little fine to medium Sand, trace Organics (Roots).				
1							7-24": Brown, Silty CLAY, little fine to coarse Sand.	2			
2	S-2	2-4				0.6	S-2: Dark brown, Silty CLAY, little fine to coarse Sand, trace Gravel.				
3											
4	S-3	4-5				NA	S-3: No Recovery.		SILTY CLAY		
5	C-2	5-10	60	52		ND	C-2:				
	S-4	5-6			5-6	1.0	S-4: 0-8": No Recovery.				
6	S-5	6-8			6-8	0.7	8-12": Brown, Silty CLAY, little fine to coarse Sand, trace Gravel.				
7							S-5: 0-23": Brown, Silty CLAY, little fine to coarse Sand, trace Gravel.				
							23-24": Brown, fine to coarse SAND, trace Silt.			7.9	
8	S-6	8-10				0.8	S-6: 0-1": Brown, fine to coarse SAND, trace Silt.				
							1-24": Brown, fine to coarse SAND, little Gravel, trace Silt.				
9											
10	C-3	10-15	60	30		ND	C-3:				
	S-7	10-12				NA	S-7: No Recovery.				
11									SAND		
12	S-8	12-14				0.6	S-8: 0-6": No Recovery.				
							6-22": Brown, fine to coarse SAND, trace Silt, little Gravel, with intermittent 1/2" lenses of CLAY & SILT.				
13							22-24": Brown, fine to coarse SAND, little Silt.				
14											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.
2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Joe Workman

Boring No.:

HS-SB-209

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-209
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Joe Workman
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/5/2018
Finish Date: 6/5/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 589072.2178 **E** 12788623.77
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-9	14-15				0.6	S-9: Brown, fine SAND, little Silt.			SAND	
15	C-4	15-20	60	60		-	C-4:				15.3
	S-10	15-16				1.0	S-10: 0-4": Brown, fine to coarse SAND, little Gravel, trace Silt, trace Clay.				
16	S-11	16-18				0.7	4-12": Brown, CLAY & SILT, trace fine to coarse Sand. S-11: Brown, CLAY & SILT, trace fine to medium Sand, with a 1" lens of fine to medium Sand at ~19".			CLAY AND SILT	
17											
18											18
	S-12	18-20				0.5	S-12: 0-3": Brown, Silty CLAY. 3-8": Brown, fine to medium SAND, trace Silt. 8-24": Brown, fine SAND, trace Silt.			SILTY CLAY	18.3
19										SAND	
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Joe Workman

Boring No.:
HS-SB-209

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-210 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/1/2018 **Finish Date:** 6/1/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588672.2178 **E** 12788623.77 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	60		1.2	C-1:	1	TOPSOIL	0.2	
	S-1	0-2				0.3	S-1: 0-2": Dark brown, TOPSOIL, trace Organics.				
1							2-24": Brown, CLAY & SILT, trace fine Sand.	2			No Equipment Installed
2	S-2	2-4				0.2	S-2: Brown, CLAY & SILT, trace fine Sand.				
3											
4	S-3	4-6			4-6	0.2	S-3: Brown, CLAY & SILT, trace fine Sand.		CLAY AND SILT		
5	C-2	5-10	60	60		0.4	C-2:				
6	S-4	6-8				ND	S-4: 0-6": Brown, CLAY & SILT, trace fine Sand. 6-24": Gray, CLAY & SILT, trace fine Sand.				
7											
8	S-5	8-10			8-10	0.1	S-5: Brown, fine to coarse SAND, trace Silt.			8	
9									SAND		
10	C-3	10-15	60	56		0.4	C-3:			10	
	S-6	10-12				0.5	S-6: 0-4": No Recovery. 4-24": Brown, CLAY & SILT, trace Gravel.				
11											
12	S-7	12-14				0.3	S-7: 0-5": Gray, CLAY & SILT, trace fine Sand. 5-19": Brown, CLAY & SILT, trace fine Sand. 19-24": Brown, fine to coarse SAND, trace Silt, trace Gravel.		CLAY AND SILT		
13										13.6	
14									SAND		

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.3 ppmv.
2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-210

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-210
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/1/2018
Finish Date: 6/1/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588672.2178 **E** 12788623.77
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-8	14-15				0.3	S-8: Brown, fine to coarse SAND, trace Silt, trace Gravel.				
15											
	C-4	15-20	60	44		0.5	C-4:			SAND	
	S-9	15-16				NA	S-9: No Recovery.				
16											
	S-10	16-18				0.5	S-10: 0-4": No Recovery.				16.3
							4-21": Brown, CLAY & SILT, trace fine to medium Sand.				
17							21-24": Brown, fine to coarse SAND, trace Silt, trace Gravel.			CLAY AND SILT	
											17.7
18											
	S-11	18-20				0.3	S-11: 0-3": Brown, fine to coarse SAND, trace Silt, trace Gravel.				
19							3-24": Light brown, fine to medium SAND, trace Silt.			SAND	
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-210

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-211 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Joe Workman **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/6/2018 **Finish Date:** 6/6/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 587872.2178 **E** 12788623.77 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Stratum Description	Elev. (ft.) / Depth (ft.)	Equipment Installed
	C-1	0-5	60	49		0.1	C-1:	1			
	S-1	0-2				1.1	S-1: 0-3": Dark brown, CLAY & SILT, little fine to coarse Sand, trace Organics (Roots).				
1							3-24": Brown, CLAY & SILT, little fine to coarse Sand.	2			No Equipment Installed
2	S-2	2-4			2-4	1.1	S-2: 0-12": Brown, CLAY & SILT, little fine to coarse Sand. 12-24": Brown, CLAY & SILT, little fine to coarse Sand, trace Gravel.		CLAY AND SILT		
3											
4	S-3	4-5				0.6	S-3: 0-1": Brown, fine to medium SAND. 1-12": No Recovery.		SAND	4	
5	C-2	5-10	60	60		0.2	C-2:			5	
	S-4	5-6				1.5	S-4: Brown, CLAY & SILT, little fine to coarse Sand.		CLAY AND SILT		
6	S-5	6-8				1.5	S-5: Brown, Silty CLAY, trace fine Sand.			6	
7									SILTY CLAY		
8	S-6	8-10			8-10	1.1	S-6: 0-2": Brown, Silty CLAY, trace fine Sand. 2-12": Brown, fine to medium SAND, trace Silt.			8.2	
9											
10	C-3	10-15	60	50		0.3	C-3:				
	S-7	10-12				0.6	S-7: Brown, fine to medium SAND, trace Silt.				
11									SAND		
12	S-8	12-14				1.3	S-8: Brown, fine to medium SAND, trace Silt.				
13											
14											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.3 ppmv.
2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Joe Workman

Boring No.:

HS-SB-211

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-211
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Joe Workman
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/6/2018
Finish Date: 6/6/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 587872.2178 **E** 12788623.77
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-9	14-15				1.3	S-9: 0-2": Brown, fine to medium SAND, trace Silt. 2-12": No Recovery.				
15	C-4	15-20	60	60		0.2	C-4:				
	S-10	15-16				1.0	S-10: Brown, fine to medium SAND, trace Silt with 1" lens of CLAY & SILT at ~5".				
16	S-11	16-18				1.2	S-11: Brown, fine to medium SAND, trace Silt.				
17										SAND	
18	S-12	18-20				1.2	S-12: Brown, fine to medium SAND, trace Silt.				
19											
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Joe Workman

Boring No.:
HS-SB-211

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-212 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Joe Workman **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/7/2018 **Finish Date:** 6/7/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 587472.2162 **E** 12788623.77 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):**5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	44	0-2	0.3	C-1:	1		
	S-1	0-2				1.2	S-1: 0-6": Dark brown, fine to medium SAND, little Organics (Sticks, Roots), trace Silt.			
1							6-11': Dark brown, fine to medium SAND, trace Silt.	2		No Equipment Installed
							11-24" Brown, fine to medium SAND, trace Silt.			
2	S-2	2-4				2.7	S-2: 0-4": Brown, fine to medium SAND, trace Silt.			
							4-20": Brown, fine to course SAND, trace Silt, trace Gravel.			
3							20-24" No Recovery.			
4	S-3	4-5				NA	S-3: No Recovery.		SAND	
5	C-2	5-10	60	50		0.2	C-2:			
	S-4	5-6				0.8	S-4: 0-10": No Recovery.			
6							10-12": Brown, fine to coarse SAND, trace Silt.			
	S-5	6-8			6-8	3.2	S-5: Brown, fine to coarse SAND, trace Silt, with 0.5" lenses of CLAY & SILT at 10" and 15".			
7										
8	S-6	8-10				1.9	S-6: 0-4": Brown, CLAY & SILT, little fine to coarse Sand, trace Gravel.		8 CLAY AND SILT 8.3 SAND 8.4	
9							4-5": Brown, fine to coarse SAND, trace Silt.			
							5-24": Brown, Silty CLAY with 3" lens of fine to medium SAND, trace Silt at 14".		SILTY CLAY	
10	C-3	10-15	60	53		0.3	C-3:			
	S-7	10-12				1.8	S-7: 0-7": No Recovery.		10.6	
11							7-9": Brown, SAND, trace Silt.		SAND 10.8	
							9-24" Brown, Silty CLAY.			
12									SILTY CLAY	
	S-8	12-14				1.7	S-8: 0-8": Brown, Silty CLAY.			
							8-24": Brown, fine to medium SAND, trace Silt.		12.7	
13									SAND	
14										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.1 ppmv.
2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Joe Workman

Boring No.:

HS-SB-212

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-212
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Joe Workman
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/7/2018
Finish Date: 6/7/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 587472.2162 **E** 12788623.77
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-9	14-15				1.3	S-9: Brown, fine to medium SAND, trace Silt.				
15	C-4	15-20	60	44		0.2	C-4:				
	S-10	15-16				NA	S-10: No Recovery.				
16	S-11	16-18				2.1	S-11: 0-4": No Recovery. 4-24": Brown, fine to medium SAND, trace Silt.				
17										SAND	
18	S-12	18-20				1.9	S-12: Brown, fine to medium SAND, trace Silt.				
19											
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Joe Workman

Boring No.:
HS-SB-212

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-213 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Joe Workman **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/5/2018 **Finish Date:** 6/5/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** TBD **E** TBD **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** ~15' West **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Depth (ft.) Description	Equipment Installed
	C-1	0-5	60	38		ND	C-1:	1		
	S-1	0-2				1.3	S-1: 0-6": Dark brown, CLAY & SILT, trace fine to medium Sand, trace Organics (Sticks, Leaves).			
1							6-24": Brown, CLAY & SILT, little fine to coarse Sand.	2		No Equipment Installed
2	S-2	2-4				0.7	S-2: 0-14": Brown, CLAY & SILT, little fine to coarse Sand. 14-24" - No Recovery.		CLAY AND SILT	
3										
4	S-3	4-5				NA	S-3: No Recovery.			
5									5	
	C-2	5-10	60	43		ND	C-2:			
	S-4	5-6				NA	S-4: No Recovery.			
6	S-5	6-8				1.0	S-5: 0-5": No Recovery.			
					6-8		5-24": Brown, fine SAND, trace Silt, with ~ 2" lens of Clay & Silt, trace Organics (Roots) at 20".			
7										
8	S-6	8-10				0.8	S-6: Brown, fine SAND, trace Silt.			
9									SAND	
10						ND				
	C-3	10-15	60	60			C-3:			
	S-7	10-12				0.8	S-7: Brown, fine SAND, little Silt.			
11										
12	S-8	12-14				0.4	S-8: Brown, fine SAND, little Silt.			
13										
14										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.
2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Joe Workman

Boring No.:

HS-SB-213

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-213
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Joe Workman
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/5/2018
Finish Date: 6/5/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N TBD **E** TBD
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
~15' West
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) / Stratum Description / Depth (ft.)
	S-9	14-15				0.2	S-9: 0-2": Brown, fine SAND, little Silt. 2-12": Brown, CLAY & SILT, trace fine to coarse Sand.		14.2 CLAY AND SILT
15	C-4	15-20	60	60		ND	C-4:		15.2
	S-10	15-16				0.5	S-10: 0-2": Brown, CLAY & SILT, trace fine to coarse Sand.		
16	S-11	16-18				0.4	2-12": Brown, fine SAND, little Silt. S-11: 0-14": Brown, fine to medium SAND, some Silt.		SAND
17							14-22": Brown, CLAY & SILT, trace fine Sand. 22-24": Brown, fine to medium SAND, trace Silt.		17.2 CLAY AND SILT 17.8
18	S-12	18-20			18-20	0.9	S-12: 0-20": Brown, fine to medium, SAND, trace Silt. 20-24": Brown, fine to medium, SAND, little Gravel, trace Silt.		
19									SAND
20									20
							End of exploration at 20 feet.		
21									
22									
23									
24									
25									
26									
27									
28									

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Joe Workman

Boring No.:
HS-SB-213

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-214 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Joe Workman **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/6/2018 **Finish Date:** 6/6/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588578.4678 **E** 12788831.06 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	55		0.2	C-1:	1		
	S-1	0-2				3.6	S-1: 0-5": Dark brown, CLAY & SILT, little fine to medium Sand, trace Organics (Roots).			
1							5-24": Brown, CLAY & SILT, little fine to medium Sand.			
2	S-2	2-4			2-4	3.3	S-2: Brown, CLAY & SILT, little fine to medium Sand.			
3										
4	S-3	4-5				1.2	S-3: 0-7": Brown, CLAY & SILT, little fine to medium Sand. 7-12": No Recovery			
5	C-2	5-10	60	60		ND	C-2:			
	S-4	5-6				0.7	S-4: Brown, CLAY & SILT, little fine to coarse Sand, trace Gravel.			
6	S-5	6-8				1.0	S-5: Brown, CLAY & SILT, little fine to coarse Sand, trace Gravel.		CLAY AND SILT	
7										Bentonite 0-14'
8	S-6	8-10				1.1	S-6: Brown, CLAY & SILT, little fine to coarse Sand, trace Gravel.			
9										1" PVC Riser 0-15'
10	C-3	10-15	60	60		ND	C-3:			
	S-7	10-12				1.4	S-7: Brown, CLAY & SILT, trace fine to coarse Sand, trace Gravel with 2" lens of dark brown Clay & Silt, little fine to medium Sand, trace Organics (Roots) at 15".			
11										
12	S-8	12-14				2.2	S-8: 0-11": Brown, fine to coarse SAND, trace Gravel, trace Silt with a 2" lens of Clay & Silt at 4".		12	
13							11-22": Brown, fine to medium SAND, trace Silt. 22-24": Brown, CLAY & SILT, trace fine to coarse Sand.		SAND	
14									13.8	

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.2 ppmv.

Logger Initials:

Joe Workman

Boring No.:

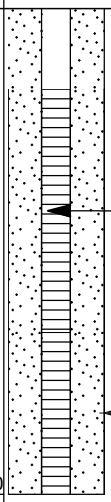
HS-SB-214

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-214 **SHEET:** 2 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Joe Workman **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/6/2018 **Finish Date:** 6/6/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588578.4678 **E** 12788831.06 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):**5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-9	14-15				2.1	S-9: Brown, CLAY & SILT, trace fine to coarse Sand.			CLAY AND SILT	
15											
	C-4	15-20	60	60		ND	C-4:	2			
	S-10	15-16				1.1	S-10: Gray, CLAY & SILT, little fine to coarse Sand, trace Gravel.				
16											
	S-11	16-18				0.4	S-11: Gray, CLAY & SILT, little fine to coarse Sand, trace Gravel.				
17										CLAY AND SILT	
18											
	S-12	18-20			18-20	1.2	S-12: Gray, CLAY & SILT, little fine to coarse Sand, trace Gravel.				
19											
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											



Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

REMARKS

2. Groundwater was encountered at approximately 15 feet below ground surface.

Logger Initials:

Joe Workman

Boring No.:

HS-SB-214

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-215 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Christopher Melby/Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/7/2018 **Finish Date:** 6/7/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588272.217 **E** 12789023.77 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	60	0-2	0.1	C-1:	1	TOPSOIL 0.2	
	S-1	0-2				1.3	S-1: 0-2": Dark brown, TOPSOIL.			
1							2-24": Brown, CLAY & SILT, trace fine to medium Sand, trace Organics (Roots).	2		No Equipment Installed
2	S-2	2-4				1.2	S-2: Brown, CLAY & SILT, trace fine to medium Sand, trace Organics (Roots).			
3										
4	S-3	4-5				1.3	S-3: Brown, CLAY & SILT, trace fine to medium Sand, trace Organics (Roots).			
5	C-2	5-10	60	12		0.2	C-2:		CLAY AND SILT	
	S-4	5-6				NA	S-4: No Recovery.			
6	S-5	6-8				NA	S-5: No Recovery.			
7										
8	S-6	8-10				0.7	S-6: 0-2": No Recovery.	3		
							2-20": Brown, CLAY & SILT, trace fine to coarse Sand, trace Gravel.			
9							20-24": Brown, fine to coarse SAND, little Gravel, trace Silt.		9.7	
10	C-3	10-15	60	58	10-12	0.2	C-3:		SAND 10	
	S-7	10-12				1.3	S-7: 0-2": No Recovery.		SAND	
11							2-11": Brown, CLAY & SILT, trace fine to medium Sand, trace Gravel.		10.9	
							11-18": Brown, fine to coarse SAND, little Gravel, trace Silt.		CLAY AND SILT 11.5	
12	S-8	12-14				1.6 5.8	18-24": Brown, CLAY & SILT, trace fine to medium Sand, trace Gravel.		CLAY AND SILT	
13							S-8: 0-12: Brown, CLAY & SILT, trace fine to medium Sand, trace Gravel.		13	
14							12-24": Brown, fine to coarse SAND, trace Silt.		SAND	

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.3 ppmv.
2. Groundwater was not encountered during drilling or upon completion.
3. Rock in tip of sleeve.

Logger Initials:

Christopher Melby/Allison Hazard

Boring No.:

HS-SB-215

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-215
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Christopher Melby/Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/7/2018
Finish Date: 6/7/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588272.217 **E** 12789023.77
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-9	14-15				0.7	S-9: Light brown, fine to medium SAND, trace Silt.				
15	C-4	15-20	60	60		0.5	C-4:			SAND	
	S-10	15-16				1.9	S-10: Brown, fine to coarse SAND, trace Silt, trace Gravel.				
16											16
	S-11	16-18				1.0	S-11: 0-16": Brown, CLAY & SILT, trace fine to coarse Sand with 1" fine to coarse Sand lens at 12". 16-24": Light brown, fine to medium SAND, trace Silt.			CLAY AND SILT	
17											17.3
18	S-12	18-20				0.8	S-12: 0-15": Light brown, fine to medium SAND, trace Silt. 15-20": Brown, CLAY & SILT, trace fine Sand. 20-24": Light brown, fine to medium SAND, trace Silt.			SAND	
19											19.3
										CLAY AND SILT	19.7
20										SAND	20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Christopher Melby/Allison Hazard

Boring No.:
HS-SB-215

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-216 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/7/2018 **Finish Date:** 6/7/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 587872.2162 **E** 12789023.77 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	48		0.5	C-1:	1	TOPSOIL	0.3	
	S-1	0-2				2.0	S-1: 0-4": Dark brown, TOPSOIL, trace Organics (Roots).				
1							4-24": Brown, CLAY & SILT, trace fine Sand, trace Organics.	2			No Equipment Installed
2	S-2	2-4			2-4	1.7	S-2: Brown, CLAY & SILT, trace fine Sand, trace Organics.				
3											
4	S-3	4-5				NA	S-3: No Recovery.		CLAY AND SILT		
5	C-2	5-10	60	50		0.4	C-2:				
	S-4	5-6				2.1	S-4: 0-10": No Recovery.				
6	S-5	6-8				1.9	10-12": Brown, CLAY & SILT, trace fine Sand. S-5: 0-18": Brown, CLAY & SILT, trace fine Sand.				
7							18-24': Brown, fine to medium SAND, trace Silt, trace Gravel.			7.5	
8	S-6	8-10			8-10	1.9	S-6: 0-5": Brown, fine to medium SAND, trace Silt, trace Gravel.		SAND	8.4	
9							5-21": Brown, Clayey SILT, trace fine to coarse Sand, trace Gravel.		CLAYEY SILT		
10							21-24": Brown, fine to coarse SAND, trace Silt, trace Gravel.			9.8	
	C-3	10-15	60	45		0.4	C-3:				
	S-7	10-12				2.0	S-7: 0-15": No Recovery.		SAND		
11							15-17": Brown, CLAY & SILT, trace fine to medium Sand.			11.3	
							17-24": Brown, fine to coarse SAND, trace Silt, trace Gravel.		CLAY AND SILT	11.4	
12	S-8	12-14				1.1	S-8: Brown, fine to medium SAND, trace Silt.				
13									SAND		
14											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.4 ppmv.
2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-216

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-216
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/7/2018
Finish Date: 6/7/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 587872.2162 **E** 12789023.77
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-9	14-15				1.3	S-9: Brown, fine to medium SAND, trace Silt.				
						1.5					
15						0.4					
	C-4	15-20	60	42			C-4:				
	S-10	15-16				NA	S-10: No Recovery.				
16											
	S-11	16-18				1.5	S-11: 0-6": No Recovery.				
							6-24": Brown, fine to medium SAND, trace Silt.				
17										SAND	
18											
	S-12	18-20				1.7	S-12: 0-21": Brown, fine to medium SAND, trace Silt.				
							21-24": Brown, fine to coarse SAND, trace Silt, trace				
19							Gravel.				
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-216

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-217 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/8/2018 **Finish Date:** 6/8/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** TBD **E** TBD **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** ~10' West **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	45		ND	C-1:	1	TOPSOIL	0.2	
	S-1	0-2				4.4	S-1: 0-3": Dark brown, TOPSOIL.				
1							3-24": Dark brown-brown, fine to medium SAND, trace Silt, trace Organics (Roots).	2	SAND		No Equipment Installed
2						3.4				2	
	S-2	2-4			2-4		S-2: 0-3": Brown, CLAY & SILT, trace fine to medium Sand.		CLAY AND SILT	2.2	
									SAND AND GRAVEL	2.5	
3							3-6": Brown, fine to coarse SAND and GRAVEL, trace Silt. 6-24": Brown, CLAY & SILT, trace fine to medium Sand.				
4									CLAY AND SILT		
	S-3	4-5				NA	S-3: No Recovery.				
5										5	
	C-2	5-10	60	60		ND	C-2:				
	S-4	5-6				2.0	S-4: Brown, SILT & CLAY, trace fine to medium Sand.				
6	S-5	6-8				2.0	S-5: Brown, SILT & CLAY, trace fine to coarse Sand, trace Gravel.				
7									SILT AND CLAY		
8	S-6	8-10				1.5	S-6: 0-12": Brown, SILT & CLAY, trace fine to coarse Sand, trace Gravel.				
9							12-22": Brown, fine to coarse SAND, trace Silt. 22-24": Brown, SILT & CLAY, trace fine to medium Sand.			9	
									SAND	9.8	
10	C-3	10-15	60	52		ND	C-3:				
	S-7	10-12				1.7	S-7: 0-8": No Recovery.		SILT AND CLAY		
11							8-12": Brown, SILT & CLAY, trace fine to coarse Sand. 12-24": Brown, fine to coarse SAND, trace Silt.			11	
12	S-8	12-14			12-14	2.5	S-8: 0-18": Brown, fine to coarse SAND, little Gravel, trace Silt.		SAND		
13							18-24": Brown, fine to medium SAND, trace Silt.				
14											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.3 ppmv.
2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-217

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-217
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/8/2018
Finish Date: 6/8/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N TBD **E** TBD
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
~10' West
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-9	14-15				2.4	S-9: 0-3": Brown, fine to medium SAND, trace Silt.				14.2
							3-12": Brown, CLAY & SILT, trace fine Sand.			CLAY AND SILT	
15						ND					15
	C-4	15-20	60	47			C-4:				
	S-10	15-16				NA	S-10: No Recovery.				
16											
	S-11	16-18				1.8	S-11: 0-1": No Recovery.			SAND	
							1-11": Brown, fine to coarse SAND, trace Silt				
17							11-15": Brown, fine to medium SAND, trace Silt.				
							15-20": Brown, CLAY & SILT, trace fine Sand.				17.3
							20-24": Brown, fine to medium SAND, trace Silt.			CLAY AND SILT	17.7
18						1.6					
	S-12	18-20					S-12: Brown, fine to medium SAND, trace Silt.				
19										SAND	
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-217

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-218 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/5/2018 **Finish Date:** 6/5/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588553.8279 **E** 12789417.4 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	48		ND	C-1:	1	TOPSOIL 0.4	
	S-1	0-2				1.2	S-1: 0-5": Dark brown, TOPSOIL. 5-24": Brown, CLAY & SILT, little fine Sand.			
1								2		No Equipment Installed
2	S-2	2-4			2-4	0.7	S-2: Brown, CLAY & SILT, trace fine to medium Sand.			
3									CLAY AND SILT	
4	S-3	4-6			4-6	NA	S-3: No Recovery.			
5	C-2	5-10	60	43		ND	C-2:		5	
6	S-4	6-8				1.4	S-4: 0-6": No Recovery. 6-24": Brown, fine to coarse SAND, trace Gravel, trace Silt with intermittent 2" lenses of Clay & Silt.		SAND	
7										
8	S-5	8-10				1.4	S-5: 0-11": Brown, CLAY & SILT, little Gravel, little fine to coarse Sand. 11-24": Light brown, fine to medium SAND, trace Silt.		8 CLAY AND SILT	
9									9	
10	C-3	10-15	60	43		ND	C-3:			
	S-6	10-12				1.5	S-6: 0-17": No Recovery. 17-24": Light brown, fine to medium SAND, trace Silt, trace Organics.		SAND	
11										
12	S-7	12-14			10-12	1.0	S-7: 0-4": Light brown, fine to medium SAND, trace Silt. 4-24": Brown, CLAY & SILT and fine to coarse SAND, trace Gravel.		12.3	
13									CLAY AND SILT AND SAND	
14										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.
2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-218

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-218
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/5/2018
Finish Date: 6/5/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588553.8279 **E** 12789417.4
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-8	14-16			14-16	1.2	S-8: 0-12": Brown, CLAY & SILT and fine to coarse SAND, trace Gravel.				
15	C-4	15-20	60	48		0.1	12-24": No Recovery. C-4:			CLAY AND SILT AND SAND	
16	S-9	16-18				1.1	S-9: 0-5": Brown, CLAY & SILT, trace fine Sand. 5-15": Brown, CLAY & SILT, little fine to coarse Sand, trace Gravel. 15-24": Light brown, fine to medium SAND, trace Silt.			CLAY AND SILT	16
17											17.3
18	S-10	18-20				0.6	S-10: Light brown, fine to medium SAND, trace Silt.			SAND	
19											
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Allison Hazard

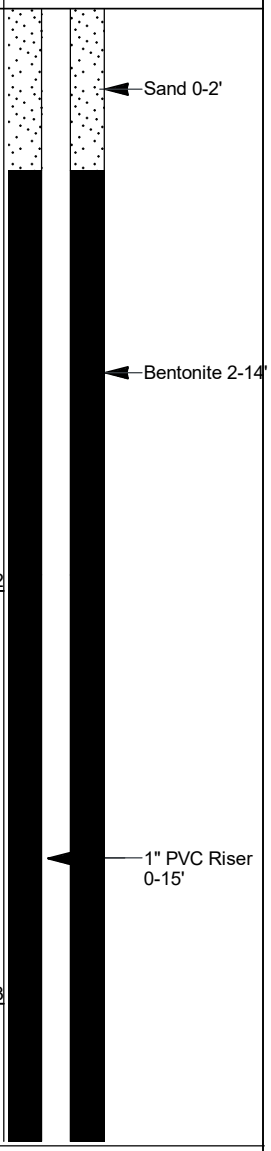
Boring No.:
HS-SB-218

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-219 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Joe Workman **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/8/2018 **Finish Date:** 6/8/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** TBD **E** TBD **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** 4' East **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Depth (ft.) Description
	C-1	0-5	60	52		0.1	C-1:	1	
	S-1	0-2				1.1	S-1: 0-8": Dark brown, CLAY & SILT, little fine to medium Sand, trace Organics (Roots, Sticks). 8-24": Brown, CLAY & SILT, little fine to medium Sand, trace Organics (Roots).		
1									
2	S-2	2-4				1.1	S-2: Brown, CLAY & SILT, little fine to medium Sand, trace Gravel.		
3									
4	S-3	4-5			4-6	0.9	S-3: 0-4": Brown, CLAY & SILT. 4-12": No Recovery.		CLAY AND SILT
5	C-2	5-10	60	46		0.1	C-2:		
	S-4	5-6				NA	S-4: No Recovery.		
6	S-5	6-8				1.0	S-5: 0-2": No Recovery. 2-14": Brown, CLAY & SILT, little fine to medium Sand. 14-24": Brown, fine to coarse SAND, little Gravel, trace Silt, trace Clay.		
7									7.2
8	S-6	8-10				0.6	S-6: Brown, fine to coarse SAND, little Gravel, trace Silt, trace Clay with intermittent 1-4" lenses of CLAY & SILT.		
9									
10						ND			SAND
	C-3	10-15	60	45			C-3:		
	S-7	10-12			10-12	1.1	S-7: 0-15": No Recovery. 15-24": Brown, fine to coarse SAND, little Gravel, trace Clay, trace Silt with 4" lens of CLAY & SILT, little fine to coarse SAND, little Gravel at 20".		
11									
12	S-8	12-14				0.3	S-8: 0-4": Brown, fine to coarse SAND, little Gravel, trace Clay, trace Silt. 4-24": Brown, CLAY & SILT, some fine to coarse Sand, little Gravel.		12.3
13									CLAY AND SILT
14									



Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.
2. Groundwater was encountered at approximately 14.3 feet below ground surface.

Logger Initials:

Joe Workman

Boring No.:

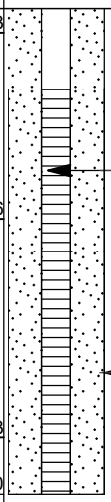
HS-SB-219

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-219 **SHEET:** 2 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Joe Workman **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/8/2018 **Finish Date:** 6/8/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** TBD **E** TBD **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):**5.0'	**Offset of Boring From Original Location:** 4' East **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) / Stratum Description / Depth (ft.)
	S-9	14-15				-	S-9: 0-3": Brown, CLAY & SILT, some fine to coarse Sand, little Gravel.	2	14.3
15	C-4	15-20	60	43		ND	3-12": Brown, fine to coarse SAND, trace Gravel, trace Silt, trace Clay.		SAND
	S-10	15-16				NA	C-4:		
16	S-11	16-18				0.7	S-10: No Recovery. S-11: 0-5": No Recovery.		16.6
17							5-7": Brown, fine to coarse SAND, trace Gravel, trace Silt, trace Clay.		
18	S-12	18-20				0.6	7-24": Brown, CLAY & SILT, trace fine to coarse Sand, with 1 1/2" lens of fine to coarse Sand at 23". S-12: 0-16": Brown, CLAY & SILT, little fine to coarse Sand, trace Gravel with a 2" lens of fine to coarse Sand at 4".		CLAY AND SILT
19							16-24": Brown, fine to coarse SAND, little Gravel, trace Silt.		19.3
20									SAND 20
21							End of exploration at 20 feet.		
22									
23									
24									
25									
26									
27									
28									



Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

REMARKS

Logger Initials:

Joe Workman

Boring No.:

HS-SB-219

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-220 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/11/2018 **Finish Date:** 6/11/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** TBD **E** TBD **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** ~15' North **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	42		0.3	C-1:	1	TOPSOIL 0.3	No Equipment Installed
	S-1	0-2				5.2	S-1: 0-4": Dark brown, TOPSOIL.			
1							4-20": Brown fine to medium SAND, trace Silt, trace Organics (Roots).		SAND	
							20-24": Brown SILT & CLAY, trace fine Sand, trace Organics (Roots).		1.7	
2	S-2	2-4			2-4	0.7	S-2: 0-18": Brown, SILT & CLAY, trace fine Sand, trace Organics (Roots).	2		
3							18-24": No Recovery.		SILT AND CLAY	
4	S-3	4-5				NA	S-3: No Recovery.			
5	C-2	5-10	60	27		ND	C-2:		5	
	S-4	5-6				NA	S-4: No Recovery.			
6	S-5	6-8				0.8	S-5: 0-21": No Recovery. 21-24": Brown, fine to coarse SAND, trace Silt.			
7										
8	S-6	8-10				0.4	S-6: Brown, fine to coarse SAND, trace Silt.			
9									SAND	
10	C-3	10-15	60	35		ND	C-3:			
	S-7	10-12				NA	S-7: No Recovery.			
11										
12	S-8	12-14				0.8	S-8: 0-1": No Recovery. 1-24": Brown, fine to coarse SAND, trace Silt.			
13										
14										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.1 ppmv.
2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-220

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-220
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/11/2018
Finish Date: 6/11/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N TBD **E** TBD
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
~15' North
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-9	14-15				2.4	S-9: Brown, fine to coarse SAND, trace Silt.				
15	C-4	15-20	60	45		0.1	C-4:				
	S-10	15-16				NA	S-10: No Recovery.				
16	S-11	16-18			16-18	2.1	S-11: 0-3": No Recovery. 3-24": Brown, fine to coarse SAND, trace Silt.				
17										SAND	
18	S-12	18-20				2.0	S-12: Brown, fine to coarse SAND, trace Silt.				
19											
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-220

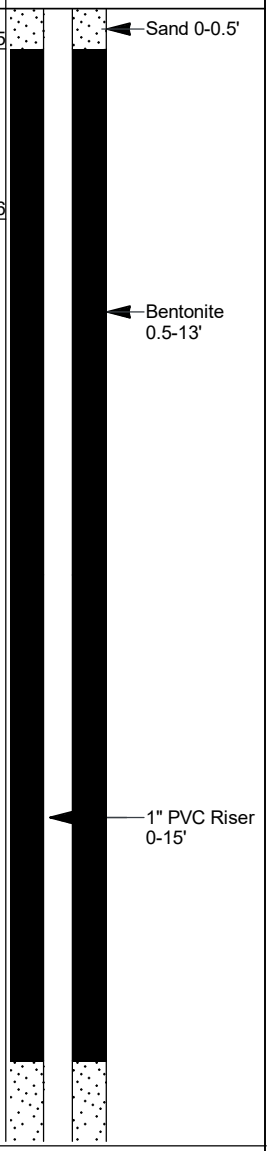
GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-221 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/11/2018 **Finish Date:** 6/11/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588553.8279 **E** 12789817.58 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):**5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	C-1	0-5	60	52		ND	C-1:	1		TOPSOIL	0.5
	S-1	0-2				1.2	S-1: 0-5": TOPSOIL.				
1							5-24": Brown, fine to medium SAND, little Silt.			SAND	
2	S-2	2-4				1.3	S-2: 0-7": Brown, fine to medium SAND, little Silt.				
							7-24": Brown, CLAY & SILT, trace fine to medium Sand.				2.6
3										CLAY AND SILT	
4	S-3	4-5			4-6	1.0	S-3: 0-4": Brown, CLAY & SILT, trace fine to medium Sand.				
5							4-12": No Recovery.				
	C-2	5-10	60	60		ND	C-2:				
	S-4	5-6				1.9	S-4: Brown, CLAY & SILT, trace fine to medium Sand.				
6	S-5	6-8			6-8	1.6	S-5: 0-3": Brown, CLAY & SILT, trace fine to medium Sand.				
7							3-24": Brown, CLAY & SILT, trace fine to coarse Sand.				
8	S-6	8-10				1.1	S-6: Brown, CLAY & SILT, trace fine to coarse Sand.				
9											
10						ND					
	C-3	10-15	60	60			C-3:				
	S-7	10-12				1.2	S-7: Brown, CLAY & SILT, trace fine to coarse Sand, trace Gravel.				
11											
12	S-8	12-14				1.1	S-8: 0-19": Brown, CLAY & SILT, trace fine to coarse Sand, trace Gravel.				
13							19-24": Brown, CLAY & SILT, some fine to medium Sand.				
14											

Equipment Installed



Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.
2. Groundwater was encountered at approximately 14 feet below ground surface.

Logger Initials:

Julie Groenleer

Boring No.:

HS-SB-221

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-221
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Julie Groenleer
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/11/2018
Finish Date: 6/11/2018
Final Depth (ft.): 20

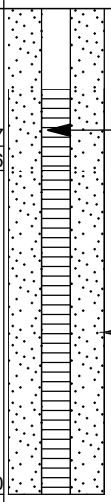
BORING COORDINATES (International Feet):
N 588553.8279 **E** 12789817.58
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) / Stratum Description / Depth (ft.)
	S-9	14-15				1.1	S-9: 0-4": Brown, CLAY & SILT, some fine to medium Sand.	2	
15	C-4	15-20	60	59		ND	4-12": Brown, CLAY & SILT, trace fine to medium Sand. C-4:		CLAY AND SILT
	S-10	15-16				0.3	S-10: 0-1": No Recovery.		15.7
16	S-11	16-18				0.3	1-8": Brown, CLAY & SILT, trace fine to medium Sand. 8-12": Brown, fine to coarse SAND, little Silt.		SAND 16
17							S-11: Brownish gray, CLAY & SILT, trace fine to coarse Sand, trace Gravel.		
18	S-12	18-20				0.3	S-12: Brownish gray, CLAY & SILT, trace fine to coarse Sand, trace Gravel.		CLAY AND SILT
19									
20									20
							End of exploration at 20 feet.		
21									
22									
23									
24									
25									
26									
27									
28									



Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Julie Groenleer

Boring No.:
HS-SB-221

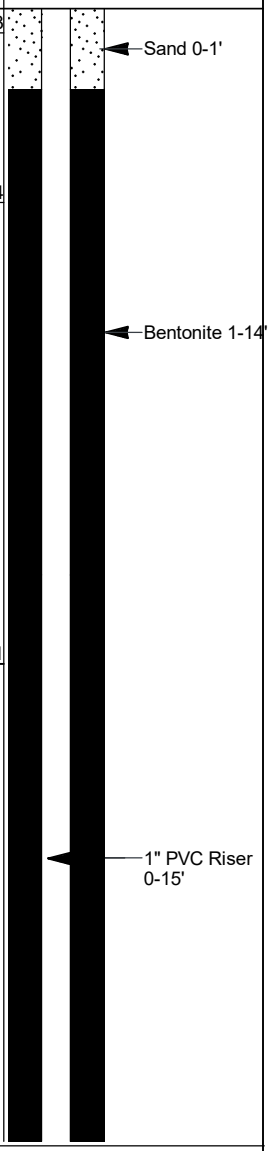
GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-222 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/11/2018 **Finish Date:** 6/11/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** TBD **E** TBD **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** ~50' West **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)
	C-1	0-5	60	41		ND	C-1:	1	TOPSOIL	0.3
	S-1	0-2				0.4	S-1: 0-4": TOPSOIL.			
1							4-24": Brown, fine to medium SAND, little Silt, trace Clay.	2	SAND	
2	S-2	2-4			2-4	0.5	S-2: 0-4.5": Brown, fine to medium SAND, trace Silt.			2.4
3							4.5-17": Brown with gray mottling, CLAY & SILT, trace fine Sand. 17-24": No Recovery.			
4	S-3	4-5				NA	S-3: No Recovery.			
5	C-2	5-10	60	44		ND	C-2:		CLAY AND SILT	
	S-4	5-6				NA	S-4: No Recovery.			
6	S-5	6-8			6-8	0.4	S-5: 0-4": No Recovery.			
7							4-24": Brown with gray mottling, CLAY & SILT, trace fine Sand.			
8	S-6	8-10				0.7	S-6: 0-1": Brown with gray mottling, CLAY & SILT, trace fine Sand.			8.1
9							1-24": Brown, fine to medium SAND, trace Silt.			
10	C-3	10-15	60	40		1.1	C-3:			
	S-7	10-12				-	S-7: 0-20": No Recovery.			
11							20-24": Brown, fine to medium SAND, trace Silt.		SAND	
12	S-8	12-14				0.9	S-8: Brown, fine to coarse SAND, trace Silt.			
13										
14										

Equipment Installed:



Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.
2. Groundwater was encountered at approximately 14 feet below ground surface.

Logger Initials:

Julie Groenleer

Boring No.:

HS-SB-222

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-222
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Julie Groenleer
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/11/2018
Finish Date: 6/11/2018
Final Depth (ft.): 20

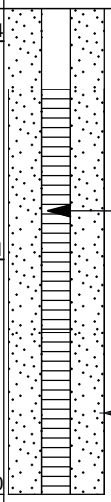
BORING COORDINATES (International Feet):
N TBD **E** TBD
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
~50' West
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) / Stratum Description / Depth (ft.)
	S-9	14-15				1.4	S-9: 0-5": Brown, fine to coarse SAND, trace Silt.		
							5-12": Brown, CLAY & SILT, trace fine Sand.		14.4
15									
	C-4	15-20	60	43		-	C-4:		
	S-10	15-16				NA	S-10: No Recovery.		
16									CLAY AND SILT
	S-11	16-18				0.8	S-11: 0-5": No Recovery.		
							5-13": Brown, CLAY & SILT, trace fine Sand.		
17							13-24": Brown, fine to medium SAND, trace Silt.		17.1
18									
	S-12	18-20				0.6	S-12: Brown, fine to medium SAND, trace Silt.		
									SAND
19									
20									20
							End of exploration at 20 feet.		
21									
22									
23									
24									
25									
26									
27									
28									



Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Julie Groenleer

Boring No.:
HS-SB-222

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-223 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Joe Workman **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/8/2018 **Finish Date:** 6/8/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** TBD **E** TBD **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):**5.0'	**Offset of Boring From Original Location:** **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	48		ND	C-1:	1		
	S-1	0-2				0.3	S-1: 0-4": Dark brown, CLAY & SILT, little fine to medium Sand, trace Organics (Roots).			
1							4-24": Brown, CLAY & SILT, little fine to medium Sand, trace Gravel.		CLAY AND SILT	No Equipment Installed
2	S-2	2-4			2-4	0.4	S-2: 0-5": Brown, CLAY & SILT, little fine to medium Sand, trace Gravel.	2	2.4	
3							5-12": Brown, fine to coarse SAND, trace Gravel, trace Silt.			
							12-24": Brown, fine to medium SAND, trace Silt.			
4	S-3	4-5				NA	S-3: No Recovery.			
5	C-2	5-10	60	48			C-2:			
	S-4	5-6				NA	S-4: No Recovery.			
6	S-5	6-8				0.7	S-5: Brown, fine to medium SAND, trace Silt.			
7										
8	S-6	8-10				0.5	S-6: Brown, fine to medium SAND, trace Silt.		SAND	
9										
10	C-3	10-15	60	57		0.1	C-3:			
	S-7	10-12			10-12	0.4	S-7: 0-3": No Recovery.			
11							3-24": Brown, fine to medium SAND, trace Silt.			
12	S-8	12-14				0.8	S-8: 0-3": No Recovery.			
							3-24": Brown, fine to medium SAND, trace Silt.			
13										
14										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.1 ppmv.
2. Location of borings in the observed trench between HS-SB-216 and HS-SB-211 on eastern side of trench. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Joe Workman

Boring No.:

HS-SB-223

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-223
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Joe Workman
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/8/2018
Finish Date: 6/8/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N TBD **E** TBD
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:

Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-9	14-15				0.3	S-9: Brown, fine to medium SAND, trace Silt.				
15											
	C-4	15-20	60	45		ND	C-4:				
	S-10	15-16				NA	S-10: No Recovery.				
16											
	S-11	16-18				0.7	S-11: 0-3": No Recovery. 3-24": Brown, fine to medium SAND, trace Silt.				
17										SAND	
18											
	S-12	18-20				0.8	S-12: Brown, fine to medium SAND, trace Silt, trace Gravel.				
19											
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Joe Workman

Boring No.:
HS-SB-223

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-224 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/12/2018 **Finish Date:** 6/12/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588546.5527 **E** 12790037.63 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):**5.0'	**Offset of Boring From Original Location:** **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	60		ND	C-1:	1	TOPSOIL 0.2	
	S-1	0-2				1.0	S-1: 0-2": TOPSOIL			
1							2-24": Brown, CLAY & SILT, trace fine to coarse Sand.	2		No Equipment Installed
2	S-2	2-4				1.1	S-2: Brown, CLAY & SILT, trace fine to coarse Sand.			
3										
4	S-3	4-5				1.5	S-3: Brown, CLAY & SILT, trace fine to coarse Sand.		CLAY AND SILT	
5	C-2	5-10	60	46		0.1	C-2:			
	S-4	5-6				NA	S-4: 0-12": No Recovery.			
6	S-5	6-8				1.1	S-5: 0-2": No Recovery. 2-22": Brown, CLAY & SILT, trace fine to coarse Sand. 22-24": Brown, fine to medium SAND, little Silt.			
7									7.8	
8	S-6	8-10			8-10	0.5	S-6: 0-22": Brown, fine to coarse SAND, little Silt, trace Gravel.			
9							22-24": Brown, CLAY & SILT, little fine to medium Sand.		SAND	
10									9.8	
	C-3	10-15	60	60	10-12	0.1	C-3:			
	S-7	10-12					S-7: Brown, CLAY & SILT, little fine to medium Sand.			
11										
12	S-8	12-14				0.7	S-8: Brown, CLAY & SILT, little fine to medium Sand.		CLAY AND SILT	
13										
14										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.
2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Julie Groenleer

Boring No.:

HS-SB-224

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-224
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Julie Groenleer
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/12/2018
Finish Date: 6/12/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588546.5527 **E** 12790037.63
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:

Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-9	14-15				0.9	S-9: Brown, CLAY & SILT, little fine to medium Sand.				
15											
	C-4	15-20	60	51		ND	C-4:				
	S-10	15-16				1.5	S-10: 0-9": No Recovery.				
16							9-12": Brown, CLAY & SILT, little fine to medium Sand.			CLAY AND SILT	
	S-11	16-18				1.1	S-11: 0-21": Brown, CLAY & SILT, little fine to medium Sand, 1" lens of brown, fine to medium SAND, trace Silt at 12".				
17							21-24": Brown, fine to medium SAND, trace Silt.				
											17.8
18										SAND	
	S-12	18-20				0.6	S-12: 0-7": Brown, fine to medium SAND, trace Silt.				
							7-24": Brown, CLAY & SILT, trace fine to coarse Sand.				18.6
19										CLAY AND SILT	
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Julie Groenleer

Boring No.:
HS-SB-224

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-225 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/11/2018 **Finish Date:** 6/11/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588435.8684 **E** 12790001.62 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	40		0.1	C-1:	1	TOPSOIL 0.2	
	S-1	0-2				1.5	S-1: 0-2": TOPSOIL.			
1							2-24": Brown, CLAY & SILT, little fine to medium Sand.	2	CLAY AND SILT	No Equipment Installed
2									2	
	S-2	2-4			2-4	3.1	S-2: 0-3": Brown, fine SAND, little Silt.		SAND 2.3	
							3-16": Brown, CLAY & SILT, trace fine to medium Sand.			
3							16-24": No Recovery.			
4	S-3	4-5				NA	S-3: No Recovery.		CLAY AND SILT	
5	C-2	5-10	60	56		0.1	C-2:			
	S-4	5-6				3.2	S-4: 0-4": No Recovery.			
6							4-12": Brown, CLAY & SILT, some fine to medium Sand.		6.1	
	S-5	6-8				1.7	S-5: 0-1": Brown, CLAY & SILT, some fine to medium Sand.			
7							1-24": Brown, fine to medium SAND, trace Silt.			
8	S-6	8-10				1.5	S-6: Brown, fine to medium SAND, trace Silt.			
9										
10	C-3	10-15	60	60		ND	C-3:		SAND	
	S-7	10-12				1.9	S-7: Brown, fine to medium SAND, trace Silt.			
11										
12	S-8	12-14				1.3	S-8: Brown, fine to medium SAND, trace Silt.			
13										
14										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.
2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Julie Groenleer

Boring No.:

HS-SB-225

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-225
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Julie Groenleer
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/11/2018
Finish Date: 6/11/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588435.8684 **E** 12790001.62
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:

Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-9	14-15				1.4	S-9: Brown, fine to medium SAND, trace Silt.				
15											
	C-4	15-20	60	57		ND	C-4:				
	S-10	15-16				1.8	S-10: 0-3": No Recovery.				
16							3-12": Brown, fine to medium SAND, trace Silt.				
	S-11	16-18				2.5	S-11: Brown, fine to medium SAND, trace Silt.				
17										SAND	
18											
	S-12	18-20			18-20	3.3	S-12: Brown, fine to medium SAND, trace Silt.				
19											
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Julie Groenleer

Boring No.:
HS-SB-225

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-101 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/15/2018 **Finish Date:** 6/15/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588764.6 **E** 12787823.2 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	49		0.7	C-1:	1	TOPSOIL	0.3	No Equipment Installed
	S-1	0-1				2.5	S-1: 0-4": Dark brown, TOPSOIL.		SILT	0.9	
1							4-11": Dark brown, SILT, trace fine Sand, trace Organics (Roots).				
	S-2	1-2				2.0	11-12": Brown, fine to medium SAND, trace Silt.		SAND		
2							S-2: Brown, fine to coarse SAND, trace Silt.			2	
	S-3	2-3				2.6	S-3: Brown, Clayey SILT, trace fine to medium Sand.		CLAYEY SILT		
3										3	
	S-4	3-4				3.0	S-4: 0-9": Brown, SILT & CLAY, trace fine to medium Sand.	2			
4							9-12": Brown-black, SILT & CLAY, trace fine to medium Sand.		SILT & CLAY		
	S-5	4-5				5.4	S-5: 0-1": Brown-dark gray, SILT & CLAY, trace fine to medium Sand.	2			
5	C-2	5-10	60	42		7.2	1-12": No Recovery.	3		5.3	
	S-6	5-6			5-6	NA	C-2:				
6							S-6: No Recovery.				
	S-7	6-7				66.5	S-7: 0-6": No Recovery.		WASTE		
7							6-12": Dark gray, WASTE.				
	S-8	7-8				61.6	S-8: 0-7": Dark gray, WASTE.				
							7-12": Brown-dark gray, SILT & CLAY, little fine to medium Sand.			7.6	
8									SILT & CLAY	8	
	S-9	8-9			8-9	28.6	S-9: 0-10": Dark brown, fine to medium SAND, trace Silt, (Color change to black for 1" at 5")		SAND	8.8	
9							10-12": Dark gray, WASTE		WASTE	9.2	
	S-10	9-10				146.2	S-10: 0-3": Dark gray, WASTE				
							2-9': Brown-dark gray, SILT % CLAY, trace fine Sand.		SILT & CLAY	9.8	
10	C-3	10-15	60	35		1.2	9-12': Brown-black, fine to medium SAND, trace Silt.	2			
	S-11	10-11				NA	C-3:				
11							S-11: No Recovery.				
	S-12	11-12				NA	S-12: No Recovery.				
12									SAND		
	S-13	12-13			12-13	29.2	S-13: 0-1": No Recovery.				
							1-8": Brown-black, fine to medium SAND, little Clay, trace Silt				
13											
	S-14	13-14				8.8	8-12": Brown-black, fine to medium SAND, trace Silt.				
14							S-14: Brown-black, fine to medium SAND, trace Silt.				

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.2 ppmv.
2. Petroleum odor noted in sample.
3. Soil sample from 5-6 feet below ground surface for laboratory analysis was collected from the second Geoprobe run.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-101

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-101
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/15/2018
Finish Date: 6/15/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588764.6 **E** 12787823.2
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)
	S-15	14-15				7.7	S-15: Light brown-brown, fine to medium SAND, trace Silt.			
15										
	C-4	15-20	60	39		0.5	C-4:	2		
	S-16	15-16				NA	S-16: No Recovery.			
16										
	S-17	16-17				4.7	S-17: 0-9": No Recovery.			
							9-12": Brown-black, fine to medium SAND, trace Silt.			
17										
	S-18	17-18				36.4	S-18: Brown-black, fine to medium SAND, trace Silt.		SAND	
18										
	S-19	18-19				5.5	S-19: Light brown, fine to medium SAND, trace Silt.			
19										
	S-20	19-20				3.1	S-20: Light brown, fine to medium SAND, trace Silt.			
20								4		20
							End of exploration at 20 feet.			
21										
22										
23										
24										
25										
26										
27										
28										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

4. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-101

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-102 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/15/2018 **Finish Date:** 6/15/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588738.2 **E** 12787786.6 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	44		3.8	C-1:		TOPSOIL 0.3	
	S-1	0-1				4.1	S-1: 0-3": Dark brown, TOPSOIL			
1	S-2	1-2				5.7	3-12": Brown, SILT, trace fine to medium Sand, trace Organics (Roots). S-2: 0-2": Brown, SILT, trace fine to medium Sand, trace Organics (Roots).	1	SILT 1.2	No Equipment Installed
2	S-3	2-3				5.8	2-12": Brown, Clayey SILT, trace fine to medium Sand.		CLAYEY SILT 2	
3	S-4	3-4				4.3	S-3: Brown, SILT & CLAY, trace fine to medium Sand. (1" fine to medium Sand lens at 6" and 9".) S-4: 0-8": Brown, SILT & CLAY, trace fine to medium Sand. (1" fine to medium Sand lens at 1").		SILT & CLAY	
4	S-5	4-5				NA	8-12": No Recovery. S-5: No Recovery.			
5	C-2	5-10	60	43		1.2	C-2:	2	5	
	S-6	5-6				NA	S-6: No Recovery.			
6	S-7	6-7				65.4	S-7: 0-5": No Recovery. 5-7": Brown, fine to medium SAND, little Silt, trace Organics.		SAND 6.6	
7	S-8	7-8			7-8	51.4	7-12": Dark gray, WASTE, trace fine Sand. S-8: 0-10": Dark gray, WASTE, trace fine Sand.			
8	S-9	8-9				71.9	10-12": Black, fine sandy WASTE. S-9: 0-2": Black, fine sandy WASTE. 2-11": Dark gray, WASTE, trace fine to medium Sand. (1" Black fine sandy WASTE lens at 5" and 10".)		WASTE	
9	S-10	9-10				11.1	11-12": Brown, Clayey SILT, trace fine to medium Sand. S-10: Brown, Clayey SILT, trace fine to medium Sand.		8.9	
10	C-3	10-15	60	46		ND	C-3:	2	CLAYEY SILT	
	S-11	10-11				NA	S-11: No Recovery.		10.6	
11	S-12	11-12			11-12	91.5	S-12: 0-2": No Recovery. 2-12": Dark gray, WASTE, little Clay & Silt, trace fine to medium Sand.		WASTE	
12	S-13	12-13				22.9	S-13: 0-4": Dark gray, WASTE, little Clay & Silt, trace fine to medium Sand.		12.3	
13	S-14	13-14				4.3	4-9": Brown, fine to medium SAND, trace Silt. 9-12": Brown, SILT & CLAY, trace fine to medium Sand. S-14: Brown, SILT & CLAY, trace fine to medium Sand.		SAND 12.8 SILT & CLAY	
14										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.2 ppmv.
2. Petroleum odor noted in sample.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-102

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-102 **SHEET:** 2 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/15/2018 **Finish Date:** 6/15/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588738.2 **E** 12787786.6 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):**5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)
	S-15	14-15			14-15	1.4	S-15: 0-4": Brown, SILT & CLAY, trace fine to medium Sand.			14.3
15							4-12": Brown, Clayey SILT, trace fine Sand.		CLAYEY SILT	
	C-4	15-20	60	38		0.2	C-4:			
	S-16	15-16				NA	S-16: No Recovery.			
16										15.9
	S-17	16-17				10.1	S-17: 0-10": No Recovery.			
							10-12": Brown, SILT & CLAY, trace fine to medium Sand.		SILT & CLAY	
17										17.1
	S-18	17-18				57.3	S-18: 0-1": Brown, SILT & CLAY, trace fine to medium Sand.		WASTE	17.3
							1-4": Dark gray, WASTE, trace fine to medium Sand.		SILT & CLAY	17.5
18									SAND	
	S-19	18-19				6.2	4-6": Brown, SILT & CLAY, trace fine to medium Sand.			
							6-12": Brown, fine to coarse SAND, trace Silt.			18.6
19							S-19: 0-7": Brown, fine to coarse SAND, trace Silt.		CLAYEY SILT	
	S-20	19-20				1.4	7-12": Brown, Clayey SILT, trace fine Sand.			19.3
							S-20: 0-3": Brown, Clayey SILT, trace fine Sand.	3	SILT & CLAY	19.5
20							3-6": Brown, SILT & CLAY, little fine to coarse Sand.		SAND	20
							6-12": Brown, fine to medium SAND, trace Silt.			
21							End of exploration at 20 feet.			
22										
23										
24										
25										
26										
27										
28										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

REMARKS

3. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-102

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-103 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/18/2018 **Finish Date:** 6/18/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588740.6 **E** 12787724.8 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	46		0.1	C-1:		TOPSOIL	0.4	
	S-1	0-1				1.3	S-1: 0-5": Dark brown, TOPSOIL				
1	S-2	1-2				1.8	5-12": Brown, fine to medium SAND, trace Gravel, trace Organics (Roots).	1	SAND	1.3	
2	S-3	2-3				1.5	S-2: 0-4": Brown, fine to medium SAND, trace Gravel, trace Organics (Roots). 4-12": Brown, Clayey SILT, little fine to medium Sand.		CLAYEY SILT	2.3	
							S-3: 0-4": Brown, Clayey SILT, little fine to medium Sand.		CLAY & SILT	2.7	
3	S-4	3-4				4.0	4-8": Brown-gray, CLAY & SILT, some fine to medium Sand.		CLAYEY SILT	3.1	
4	S-5	4-5				NA	8-12": Brown, Clayey SILT, trace fine to medium Sand. S-4: 0-1": Brown, Clayey SILT, trace fine to medium Sand. 1-10": Brown-gray, CLAY & SILT, little fine to medium Sand (1" fine to medium Sand lens at 6")		CLAY & SILT	5	Bentonite 0.5-8.6'
5	C-2	5-10	60	48		0.8	10-12": No Recovery.				
	S-6	5-6				NA	S-5: No Recovery.				
6	S-7	6-7				72.4	C-2: S-6: No Recovery. S-7: 0-3": Brown-gray, fine to medium SAND, trace Silt.	2	SAND	6.3	
7	S-8	7-8			7-8	80.2	3-12": Dark gray, WASTE, trace fine to medium Sand. S-8: 0-9": Dark gray, WASTE, trace fine to medium Sand.		WASTE		
8	S-9	8-9				84.2	9-10": Black, fine Sandy WASTE. 10-12": Brown, CLAY & SILT, trace fine Sand. S-9: 0-1": Brown, CLAY & SILT, trace fine Sand.		CLAY & SILT	7.8 8.1	
9	S-10	9-10				42.4	1-11": Dark gray, WASTE, trace fine to medium Sand. 11-12": Black, fine Sandy WASTE. S-10: 0-8": Brown-gray, CLAY & SILT, trace fine to medium Sand.		WASTE CLAY & SILT	9 9.7	
10	C-3	10-15	60	55		0.3	8-12": Dark gray, WASTE, trace fine to medium Sand.	2			
	S-11	10-11				31.7	C-3: S-11: 0-5": No Recovery.				
11	S-12	11-12				21.4	5-12": Dark gray, WASTE, trace fine to medium Sand. S-12: 0-5": Dark gray, WASTE, trace fine to medium Sand.		WASTE		Sand 8.6-20'
12	S-13	12-13			12-13	2.7	5-12": Black-dark gray, fine Sandy WASTE. S-13: 0-2": Dark gray-gray, fine Sandy WASTE.			12.2	
13	S-14	13-14				1.8	2-12": Brown, SILT & CLAY, trace fine to medium Sand. S-14: Brown, SILT & CLAY, trace fine to medium Sand. (Color change to yellow brown at 4".)		SILT & CLAY		
14											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.
2. Petroleum odor noted in sample.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-103

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-103
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/18/2018
Finish Date: 6/18/2018
Final Depth (ft.): 20

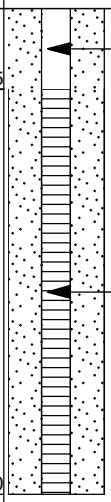
BORING COORDINATES (International Feet):
N 588740.6 **E** 12787724.8
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) / Stratum Description / Depth (ft.)
	S-15	14-15				2.8	S-15: Yellow brown, SILT & CLAY, trace fine to medium Sand.		SILT & CLAY
15	C-4	15-20	60	60	15-16	ND	C-4:		15
	S-16	15-16				6.9	S-16: Dark gray, fine to medium SAND, trace Silt.		
16	S-17	16-17				3.8	S-17: Dark gray, fine to medium SAND, trace Silt.		
17	S-18	17-18				2.1	S-18: 0-8": Dark gray, fine to medium SAND, trace Silt. (2" Brown, Silty CLAY lens at 4")		SAND
18	S-19	18-19				1.4	8-12": Brown-gray, fine to medium SAND, little Silt, trace Gravel. S-19: Brown, fine to coarse SAND, some Silt, trace Gravel.		
19	S-20	19-20				2.4	S-20: Brown-light brown, fine to medium SAND, trace Silt.		
20									20
							End of exploration at 20 feet.		
21									
22									
23									
24									
25									
26									
27									
28									



Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-103

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-104 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/18/2018 **Finish Date:** 6/18/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** TBD **E** TBD **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** 5' NE **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	60		ND	C-1:		TOPSOIL	0.1	No Equipment Installed
	S-1	0-1				5.3	S-1: 0-0.5": Dark brown, TOPSOIL				
1							0.5 - 12": Brown, Clayey SILT, trace fine to medium Sand.		CLAYEY SILT		
	S-2	1-2				1.5	S-2: 0-8": Brown, Clayey SILT, trace fine to medium Sand.	1			
							8-12": Brown, SILT & CLAY, trace fine to medium Sand.			1.7	
2											
	S-3	2-3				1.6	S-3: Brown, SILT & CLAY, trace fine to medium Sand.				
									SILT & CLAY		
3											
	S-4	3-4				2.0	S-4: 0-5": Brown, SILT & CLAY, trace fine to medium Sand.			3.4	
4							5-10": Brown, CLAY & SILT, trace fine to coarse Sand, trace Gravel.		CLAY & SILT		
	S-5	4-5				1.5					
							10-12": Brown, CLAY & SILT, some fine to coarse Sand.			4.5	
5							S-5: 0-1": Brown, CLAY & SILT, some fine to coarse Sand.		SILT & CLAY		
	C-2	5-10	60	52		ND					
	S-6	5-6			5-6	5.4	1-6": Brown, CLAY & SILT, trace fine to coarse Sand.			5.7	
6							6-12": Brown, SILT & CLAY, trace fine to coarse Sand.				
	S-7	6-7				4.5	C-2:				
7							S-6: 0-8": No Recovery.				
	S-8	7-8			7-8	4.0	8-12": Brown, Clayey SILT, trace fine to coarse Sand.		CLAYEY SILT		
							S-7: Brown, Clayey SILT, trace fine to coarse Sand.				
8							S-8: Brown, Clayey SILT, trace fine to coarse Sand.				
	S-9	8-9				4.4	S-9: 0-8": Brown, Clayey SILT, trace fine to coarse Sand.				
							8-12": Brown, fine to coarse SAND, little Gravel, little Clay, trace Silt.			8.7	
9											
	S-10	9-10				2.9	S-10: Brown, fine to coarse SAND, little Gravel, trace Silt.				
10											
	C-3	10-15	60	42		ND	C-3:				
	S-11	10-11				NA	S-11: No Recovery.				
11											
	S-12	11-12				0.3	S-12: 0-6": No Recovery.				
							6-12": Brown, fine to coarse SAND, little Gravel, trace Silt.		SAND		
12											
	S-13	12-13			12-13	1.0	S-13: Light brown, fine to medium SAND, trace Silt.				
13											
	S-14	13-14				1.1	S-14: Light brown, fine to medium SAND, trace Silt.				
14											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.2 ppmv.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-104

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-104
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/18/2018
Finish Date: 6/18/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N TBD **E** TBD
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
5' NE
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) / Stratum Description / Depth (ft.)
	S-15	14-15				1.3	S-15: Light brown, fine to medium SAND, trace Silt.		
15									
	C-4	15-20	60	49		ND	C-4:		
	S-16	15-16				0.6	S-16: 0-11": No Recovery.		
16							11-12": Brown, fine to coarse SAND, trace Silt.		
	S-17	16-17				2.2	S-17: 0-8": Light brown, fine to medium SAND, trace Silt.		
							8-12": Brown, fine to coarse SAND, trace Silt.		
17									SAND
	S-18	17-18				1.0	S-18: 0-2": Brown, fine to coarse SAND, trace Silt.		
							2-12": Light brown, fine to medium SAND, trace Silt.		
18									
	S-19	18-19				1.0	S-19: Light brown, fine to medium SAND, trace Silt.		
19									
	S-20	19-20				1.2	S-20: 0-10": Light brown, fine to medium SAND, trace Silt.		
							10-12": Brown, Silty Clay, little fine to medium Sand.	2	19.8
20									SILTY CLAY 20
							End of exploration at 20 feet.		
21									
22									
23									
24									
25									
26									
27									
28									

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-104

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-105 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/18/2018 **Finish Date:** 6/18/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588777.1 **E** 12787643.7 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	36		0.2	C-1:		TOPSOIL	0.3	No Equipment Installed
	S-1	0-1				1.9	S-1: 0-3": Dark brown, TOPSOIL 3-11": Brown, Clayey SILT, trace fine to medium Sand.		CLAYEY SILT	0.9	
1	S-2	1-2				1.2	11-12": Brown, CLAY & SILT, trace fine to medium Sand. S-2: Brown, CLAY & SILT, trace fine to medium Sand.	1	CLAY & SILT		
2	S-3	2-3				1.2	S-3: 0-2": Brown, CLAY & SILT, trace fine to medium Sand. 2-12": Brown, Silty CLAY, trace fine to medium Sand.			2.2	
3	S-4	3-4				NA	S-4: No Recovery.		SILTY CLAY		
4	S-5	4-5				NA	S-5: No Recovery.			4	
5	C-2	5-10	60	60		ND	C-2:				
	S-6	5-6				1.1	S-6: Brown, SILT & CLAY, trace fine to coarse Sand.				
6	S-7	6-7			6-7	2.0	S-7: Brown, SILT & CLAY, trace fine to coarse Sand.				
7	S-8	7-8				1.6	S-8: Brown, SILT & CLAY, trace fine to coarse Sand.		SILT & CLAY		
8	S-9	8-9			8-9	1.8	S-9: 0-10": Brown, SILT & CLAY, trace fine to coarse Sand. 10-12": Dark brown, SILT & CLAY, some fine to coarse Sand, trace Gravel.				
9	S-10	9-10				2.1	S-10: 0-8": Dark brown, SILT & CLAY, some fine to coarse Sand, trace Gravel.			9.7	
10	C-3	10-15	60	34		ND	8-12": Brown, fine to medium SAND, trace Silt. C-3:				
	S-11	10-11				NA	S-11: No Recovery.				
11	S-12	11-12				NA	S-12: No Recovery.				
12	S-13	12-13				1.8	S-13: 0-2": No Recovery. 2-12": Brown, fine to medium SAND, trace Silt.		SAND		
13	S-14	13-14			13-14	2.8	S-14: Brown, fine to medium SAND, trace Silt.				
14											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-105

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-105
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/18/2018
Finish Date: 6/18/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588777.1 **E** 12787643.7
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-15	14-15				2.5	S-15: Brown, fine to medium SAND, trace Silt.				
15											
	C-4	15-20	60	52		ND	C-4:				
	S-16	15-16				2.2	S-16: 0-8": No Recovery.				
16							8-12": Brown, fine to medium SAND, trace Silt.				
	S-17	16-17				2.3	S-17: Brown-light brown, fine to medium SAND, trace Silt.				
17											
	S-18	17-18				2.2	S-18: Light brown, fine to medium SAND, trace Silt.			SAND	
18											
	S-19	18-19				1.9	S-19: Light brown, fine to medium SAND, trace Silt.				
19											
	S-20	19-20				1.3	S-20: 0-3": Light brown-brown, fine to medium SAND, trace Silt.				
20							3-12": Brown, fine to medium SAND, little Clay, trace Silt.	2			20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-105

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-106 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/19/2018 **Finish Date:** 6/19/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588896.3 **E** 12788036.5 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):**5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	33		ND	C-1:		TOPSOIL 0.3	
	S-1	0-1				1.5	S-1: 0-3": Dark brown, TOPSOIL		CONCRETE 0.7	
1	S-2	1-2				1.0	3-8":Brown, CONCRETE, some fine to coarse Sand, some Silt. 8-12": Brown, fine to coarse SAND, some Clay & Silt.	1		No Equipment Installed
2	S-3	2-3				1.2	S-2: Brown, fine to coarse SAND, some Clay & Silt S-3: 0-9": Brown, fine to coarse SAND, some Clay & Silt 9-12": No Recovery.		SAND	
3	S-4	3-4				NA	S-4: No Recovery.			
4	S-5	4-5				NA	S-5: No Recovery.			
5	C-2	5-10	60	30		ND	C-2:		5	
	S-6	5-6				NA	S-6: No Recovery.			
6	S-7	6-7				NA	S-7: No Recovery.			
7	S-8	7-8			7-8	1.6	S-8: 0-6": No Recovery. 6-12": Brown, SILT & CLAY, some fine to coarse Sand, trace Gravel.		SILT & CLAY	
8	S-9	8-9			8-9	1.4	S-9: Brown, SILT & CLAY, some fine to coarse Sand, trace Gravel. (2" Clayey SILT, trace fine to coarse Sand lens at 2".)			
9	S-10	9-10				1.3	S-10: Brown, fine to coarse SAND, little Silt, (color changed to light brown at 7").		9	
10	C-3	10-15	60	43		ND	C-3:			
	S-11	10-11				NA	S-11: No Recovery.			
11	S-12	11-12				1.5	S-12: 0-5": No Recovery. 5-12": Brown-light brown, fine to medium SAND, little Silt, (0.5" fine to medium SAND, some Gravel, little Silt lens at 8").		SAND	
12	S-13	12-13				1.3	S-13: Brown-light brown, fine to medium SAND, trace Silt.			
13	S-14	13-14				1.4	S-14: Brown-light brown, fine to medium SAND, trace Silt.			
14										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-106

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-106
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/19/2018
Finish Date: 6/19/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588896.3 **E** 12788036.5
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-15	14-15			14-15	1.6	S-15: 0-2": Brown-light brown, fine to medium SAND, trace Silt.			GRAVEL	14.2 / 14.3
15	C-4	15-20	60	52		ND	2-3": Brown, GRAVEL, some fine to coarse Sand, some Silt.				
	S-16	15-16				1.5	3-7": Brown, fine SAND, some Silt, little Gravel.				
16	S-17	16-17				1.5	7-12": Brown, fine SAND, trace Silt.				
							C-4:				
							S-16: 0-8": No Recovery.				
17	S-18	17-18				1.4	8-12": Brown, fine to medium SAND, little Silt.			SAND	
							S-17: 0-2": Brown, fine to medium SAND, little Silt.				
							2-8": Dark Brown, fine to medium SAND, little Silt.				
18	S-19	18-19				1.3	8-12": Brown, fine to medium SAND, little Silt.				
							S-18: 0-2": Brown, fine to medium SAND, little Silt.				
							2-12": Light brown, fine SAND, trace Silt.				
19	S-20	19-20				1.3	S-19: Light brown, fine SAND, trace Silt.				
							S-20: Light brown, fine SAND, trace Silt.	2			
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-106

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-107 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/19/2018 **Finish Date:** 6/19/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588900.2 **E** 12787961.7 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	45		ND	C-1:		TOPSOIL	0.3	
	S-1	0-1				0.9	S-1: 0-4": TOPSOIL 4-12": Brown, fine to medium SAND, trace Silt.				
1	S-2	1-2				0.6	S-2: 0-2": Brown, fine to medium SAND, trace Silt. 2-12": Brown, fine to coarse SAND, trace Gravel, trace Silt.	1			No Equipment Installed
2	S-3	2-3				0.7	S-3: 0-6": Brown, fine to coarse SAND, trace Gravel, trace Silt. 6-12": Brown, fine to medium SAND, trace Silt.				
3	S-4	3-4				1.1	S-4: 0-9": Brown, fine to medium SAND, trace Silt. 9-12": No Recovery.				
4	S-5	4-5				NA	S-5: No Recovery.				
5	C-2	5-10	60	45		ND	C-2:		SAND		
	S-6	5-6				NA	S-6: No Recovery.				
6	S-7	6-7				1.2	S-7: 0-3": No Recovery. 3-12": Brown, fine to medium SAND, trace Silt.				
7	S-8	7-8				1.1	S-8: 0-5": Brown, fine to medium SAND, trace Silt. 5-12": Brown, fine to coarse SAND, trace Silt, trace Gravel.				
8	S-9	8-9			8-9	1.0	S-9: Brown, fine to coarse SAND, trace Silt, trace Gravel.				
9	S-10	9-10				0.9	S-10: 0-7": Brown, fine to coarse SAND, trace Silt, trace Gravel. 7-12": Brown, CLAY & SILT, little fine Sand.			9.6	
10	C-3	10-15	60	52		ND	C-3:		CLAY & SILT		
	S-11	10-11				0.9	S-11: 0-8": No Recovery. 8-12": Brown, fine to coarse SAND, trace Silt.			10.7	
11	S-12	11-12				1.0	S-12: 0-2": Brown, fine to coarse SAND, trace Silt. 2-12": Brown, fine to medium SAND, little Silt.		SAND		
12	S-13	12-13				0.4	S-13: 0-1": Brown, fine to medium SAND, little Silt. 1-6": Brown grading to dark brown, fine to medium SAND, trace Silt.			12.5	
13	S-14	13-14			13-14	1.4	6-12": Brown, CLAY & SILT, trace fine to medium Sand. S-14: Brown, CLAY & SILT, trace fine to medium Sand.		CLAY & SILT		
14											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.3 ppmv.

Logger Initials:

Julie Groenleer

Boring No.:

HS-SB-107

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-107
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Julie Groenleer
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/19/2018
Finish Date: 6/19/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588900.2 **E** 12787961.7
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-15	14-15				1.6	S-15: 0-2": Brown, CLAY & SILT, trace fine to medium Sand.				14.2
15							2-6": Brown, fine to coarse SAND, trace Silt.				
	C-4	15-20	60	58		ND	6-12": Brown, fine to medium SAND, trace Silt.				
	S-16	15-16			15-16	1.0	C-4:			SAND	
16							S-16: 0-2": No Recovery.				
	S-17	16-17				1.0	2-12": Brown, fine to coarse SAND, little Silt.				
							S-17: Brown grading to dark brown, fine to medium				
17							SAND, little Silt.				17
	S-18	17-18				0.9	S-18: 0-6": Brown, CLAY & SILT, trace fine Sand.			CLAY & SILT	17.5
18							6-12": Brown, fine to coarse SAND, trace Silt.			SAND	
	S-19	18-19				1.0	S-19: 0-3": Brown, fine to coarse SAND, trace Silt.				18.3
							3-12": Brown, CLAY & SILT, trace fine Sand.				
19										CLAY & SILT	
	S-20	19-20				0.8	S-20: 0-3": Brown, CLAY & SILT, trace fine Sand.				19.3
							3-12": Brown, fine to medium SAND, trace Silt.	2		SAND	
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Julie Groenleer

Boring No.:
HS-SB-107

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-108 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/19/2018 **Finish Date:** 6/19/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588897.0168 **E** 127883136.11 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)
	C-1	0-5	60	47		0.1	C-1:		TOPSOIL	0.3
	S-1	0-1				3.0	S-1: 0-4": TOPSOIL			
1							4-12": Brown, CLAY & SILT, little fine to medium Sand.		CLAY & SILT	
	S-2	1-2				1.1	S-2: 0-5": Brown, CLAY & SILT, little fine to medium Sand.	1		1.4
							5-12": Brown, fine to medium SAND, little Silt.		SAND	
2										2
	S-3	2-3				1.2	S-3: 0-3": Brown, CLAY & SILT, little fine to medium Sand.		CLAY & SILT	2.3
							3-12": Brown, fine to medium SAND, little Clay, trace Silt.			
3										
	S-4	3-4				0.8	S-4: 0-11": Brown, fine to medium SAND, little Clay, trace Silt.			
4							11-12": No Recovery.			
	S-5	4-5				NA	S-5: No Recovery.			
5									SAND	
	C-2	5-10	60	46		0.1	C-2:			
	S-6	5-6				NA	S-6: No Recovery.			
6										
	S-7	6-7				1.2	S-7: 0-2": No Recovery.			
							2-12": Brown, fine to medium SAND, little Silt.			
7										7.1
	S-8	7-8				0.7	S-8: 0-1": Brown, fine to medium SAND, little Silt.		CLAY & SILT	7.3
							4-12": Brown, fine to medium SAND, little silt.			
8									SAND	
	S-9	8-9			8-9	3.0	S-9: 0-2" Brown, fine to medium SAND, little Silt.			8.2
							2-5": Brown, CLAY & SILT, trace fine to medium Sand.		CLAY & SILT	8.4
9							5-8": Gray, SILT & CLAY, trace fine Sand.		SILT & CLAY	8.7
	S-10	9-10				1.6	8-10": Brown, CLAY & SILT, trace fine to medium Sand.		CLAY & SILT	9.1
							10-12": Brown, fine to medium SAND, trace Silt.		SAND	9.4
10							S-10: 0-1": Brown, fine to medium SAND, trace Silt.		CLAY & SILT	9.6
	C-3	10-15	60	60		ND	1-3": Brown, CLAY & SILT, trace fine to medium Sand.		SAND	9.9
	S-11	10-11				0.8	3-5": Brown, fine to medium SAND, little Silt.		CLAY & SILT	10.4
11							5-6": Brown, CLAY & SILT, trace fine to medium Sand.		SAND	
	S-12	11-12				0.9	6-12": Brown, fine to medium SAND, little Silt.		CLAY & SILT	
							C-3:			11.8
12							S-11: 0-5": Brown, fine to medium SAND, little Silt.		SAND	12
	S-13	12-13			12-13	1.2	5-12": Brown, CLAY & SILT, little fine to medium Sand.		CLAY & SILT	
13							S-12: 0-9": Brown, CLAY & SILT, little fine to medium Sand.			12.9
	S-14	13-14				1.1	9-12": Brown, fine to medium SAND, little Silt.		SAND	
14							S-13: 0-11": Brown, CLAY & SILT, trace fine to coarse			13.8

Equipment Installed: Bentonite 0.5-13'

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.5 ppmv.

Logger Initials:

Julie Groenleer

Boring No.:

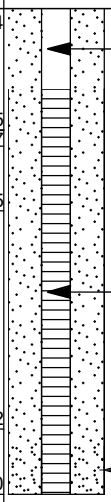
HS-SB-108

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-108 **SHEET:** 2 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/19/2018 **Finish Date:** 6/19/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588897.0168 **E** 127883136.11 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) / Stratum Description / Depth (ft.)
	S-15	14-15				0.9	Sand.		ROCK FRAGMENTS 14
							11-12": Brown, fine to coarse SAND, trace Silt.		
15							S-14: 0-9": Brown, fine to coarse SAND, trace Gravel, trace Silt.		SAND
	C-4	15-20	60	54		ND			
	S-16	15-16				0.7	9-12": ROCK FRAGMENTS.		15.5
16							S-15: Brown, fine to medium SAND, trace Silt.		15.7 CLAY & SILT
	S-17	16-17			16-17	1.1	C-4:		SAND 16.5
							S-16: 0-6": No Recovery.		
17							6-8": Brown, CLAY & SILT, little fine Sand.		
	S-18	17-18				0.8	8-12": Brown, fine to medium SAND, little Silt.		
							S-17: 0-6": Brown, fine to medium SAND, little Silt.		
18							6-12": Brown, CLAY & SILT, trace fine Sand.		CLAY & SILT
	S-19	18-19				0.9	S-18: Brown, CLAY & SILT, trace fine Sand.		
							S-19: Brown, CLAY & SILT, trace fine Sand.		
19							S-20: 0-2": Brown, CLAY & SILT, trace fine Sand.		19.2
	S-20	19-20				1.0	2-12": Brown, fine to coarse SAND, trace Gravel, trace Silt.		SAND
20									20
							End of exploration at 20 feet.		
21									
22									
23									
24									
25									
26									
27									
28									



Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

REMARKS

Logger Initials:

Julie Groenleer

Boring No.:

HS-SB-108

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-109 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/19/2018 **Finish Date:** 6/19/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588829.9 **E** 12788030.7 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	42		ND	C-1:		TOPSOIL	0.3	
	S-1	0-1				1.4	S-1: 0-3": Brown, TOPSOIL, trace Organics (Roots).		GRAVEL	0.4	
1							3-4": Brown, GRAVEL, trace fine to coarse Sand.		SAND	1	
	S-2	1-2				1.2	4-12": Brown, fine to medium SAND, little Silt, trace Clay, trace Organics (Roots).	1	SILT & CLAY	1.1	No Equipment Installed
2							S-2: 0-1": Brown, SILT & CLAY, little fine to medium SAND.		SAND		
	S-3	2-3				1.0	1-12": Brown, fine to coarse SAND, some Silt & Clay.			2.6	
3							S-3: 0-7": Brown, fine to coarse SAND, some Silt & Clay.		SILT & CLAY	2.8	
	S-4	3-4				1.1	7-9": Brown, SILT & CLAY, little fine to medium Sand.		SAND	3.3	
4							9-12": Brown, fine to coarse SAND, some Silt & Clay.				
	S-5	4-5				NA	S-4: 0-3": Brown, fine to coarse SAND, some Silt & Clay.				
							3-6": Brown, SILT & CLAY, little fine to medium Sand.		SILT & CLAY		
5							6-12": No Recovery.				
	C-2	5-10	60	36		ND	S-5: No Recovery.			5.3	
	S-6	5-6				NA	C-2:				
6							S-6: No Recovery.				
	S-7	6-7				NA	S-7: No Recovery.				
									SAND		
7											
	S-8	7-8				0.9	S-8: 0-8": Brown, fine to coarse SAND, some Silt & Clay.				
							8-12": Brown, SILT & CLAY, little fine to medium Sand.			7.7	
8									SILT & CLAY	8	
	S-9	8-9				1.1	S-9: Brown, fine to coarse SAND, some Silt & Clay (4" Silt & Clay, little fine to medium Sand lens at 2").				
									SAND		
9											
	S-10	9-10			9-10	18.6	S-10: 0-2": Brown, fine to coarse SAND, some Silt & Clay.			9.2	
							2-4": Olive gray, WASTE, trace fine Sand.		WASTE	9.5	
10							4-6.5": Black, WASTE, trace fine Sand.				
	C-3	10-15	60	44		0.2	6.5-12": Brown, fine to coarse SAND, little Silt.				
	S-11	10-11				NA	C-3:		SAND		
11							S-11: No Recovery.				
	S-12	11-12				15.4	S-12: 0-4": No Recovery.			11.4	
							4-5": Brown, fine to coarse SAND, little Silt.		WASTE	11.5	
12							5-5.5": Black, WASTE.		SAND	11.6	
	S-13	12-13				1.4	5.5-7": Brown, fine to coarse SAND, little Silt.		WASTE	11.7	
							7-8": Olive gray-black, WASTE, trace fine to medium Sand.		SAND		
13										13	
	S-14	13-14				1.4	8-12": Brown, fine to coarse SAND, little Silt.		SILT & CLAY	13.4	
14							S-13: Brown, fine to coarse SAND, little Silt.		SAND		

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.1 ppmv.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-109

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-109
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/19/2018
Finish Date: 6/19/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588829.9 **E** 12788030.7
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-15	14-15			14-15	1.4	S-14: 0-5": Brown, SILT & CLAY, trace fine Sand.				
							5-6": Brown, fine to coarse SAND, little Gravel, little SIlt.			SAND	14.7
15							6-12": Light brown, fine to medium SAND, trace Silt.				
	C-4	15-20	60	39		0.3	S-15: 0-8": Light brown, fine to medium SAND, trace Silt.				
	S-16	15-16				NA	8-12": Brown, CLAY.			CLAY	
16							C-4:				16
	S-17	16-17				3.1	S-16: No Recovery.				
							S-17: 0-9": No Recovery.				
17							9-11": Brown, fine to coarse SAND, little Silt.				
	S-18	17-18				1.6	11-12": Light brown, fine to medium SAND, trace Silt.				
							S-18: Brown-light brown, fine to coarse SAND, trace			SAND	
18							Gravel.				
	S-19	18-19				1.3	S-19: Brown, fine to coarse SAND, trace Silt, trace Gravel.				
19											
	S-20	19-20				1.3	S-20: 0-2": Brown, fine to coarse SAND, trace Silt, trace				19.2
							Gravel.				
20							2-12": Brown, CLAY, trace fine Sand.	2		CLAY	20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-109

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-110 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/18/2018 **Finish Date:** 6/18/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588838.7316 **E** 12787748.84 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	42		0.2	C-1:		TOPSOIL	0.3	
	S-1	0-1				2.6	S-1: 0-3": TOPSOIL				
1							3-12": Brown, fine to medium SAND, little Silt.				
	S-2	1-2				1.4	S-2: Brown, fine to medium SAND, little Silt.	1			No Equipment Installed
2											
	S-3	2-3				1.9	S-3: Brown, fine to medium SAND, little Silt.				
3											
	S-4	3-4				1.8	S-4: 0-6": Brown, fine to medium SAND, little Silt.				
							6-12': No Recovery.				
4									SAND		
	S-5	4-5				NA	S-5: No Recovery.				
5											
	C-2	5-10	60	38		0.1	C-2:				
	S-6	5-6				NA	S-6: No Recovery.				
6											
	S-7	6-7				NA	S-7: 0-10": No Recovery.				
							10-12": Brown, fine to medium SAND, little Silt.				
7										7.2	
	S-8	7-8			7-8	1.8	S-8: 0-2": Brown, fine to medium SAND, little Silt.		CLAY & SILT	7.3	
							2-4": Gray, CLAY & SILT, trace fine Sand.				
8							4-12": Brown, fine to coarse SAND, little Silt.				
	S-9	8-9				3.4	S-9: Brown, fine to coarse SAND, little Silt.				
9											
	S-10	9-10				3.0	S-10: Brown, fine to coarse SAND, little Silt.				
10											
	C-3	10-15	60	49		2.7	C-3:		SAND		
	S-11	10-11				2.3	S-11: 0-11": No Recovery.				
11							11-12": Brown, fine to coarse SAND, little Silt.				
	S-12	11-12			11-12	2.3	S-12: Brown, fine to coarse SAND, little Silt.				
12											
	S-13	12-13				1.8	S-13: 0-8": Brown, fine to medium SAND, little Silt.				
							8-12": Brown, CLAY & SILT, trace fine to medium Sand.			12.7	
13											
	S-14	13-14				2.0	S-14: 0-9": Brown, CLAY & SILT, trace fine to medium Sand.		CLAY & SILT		
14							9-12": Brown, fine to medium SAND, trace Silt.			13.8	

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.4 ppmv.

Logger Initials:

Julie Groenleer

Boring No.:

HS-SB-110

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-110
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Julie Groenleer
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/18/2018
Finish Date: 6/18/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588838.7316 **E** 12787748.84
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)
	S-15	14-15			14-15	2.3	S-15: Brown, fine to medium SAND, trace Silt.			
15										
	C-4	15-20	60	48		ND	C-4:			
	S-16	15-16				NA	S-16: No Recovery.			
16										
	S-17	16-17				2.5	S-17: Brown, fine to medium SAND, trace Silt (1" lens of Brown, CLAY & SILT, trace fine Sand from 8-9").		SAND	
17										
	S-18	17-18				1.2	S-18: 0-5": Brown, fine to medium SAND, trace Silt (1" thick lens of CLAY & SILT, trace fine Sand at 1-2"). 5-12": Brown, fine to medium SAND, trace Silt.			
18										
	S-19	18-19				1.4	S-19: 0-4": Brown, fine to medium SAND, trace Silt. 4-8": Brown, CLAY & SILT, trace fine Sand. 8-12": Brown, fine to medium SAND, trace Silt.			18.3
									CLAY & SILT	18.7
19										
	S-20	19-20				1.9	S-20: Brown, fine to medium SAND, trace Silt.		SAND	
20								2		20
							End of exploration at 20 feet.			
21										
22										
23										
24										
25										
26										
27										
28										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Julie Groenleer

Boring No.:
HS-SB-110

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-111 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/20/2018 **Finish Date:** 6/20/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588513.7 **E** 12788665.7 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):**5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Stratum Description	Elev. (ft.) / Depth (ft.)	Equipment Installed
	C-1	0-5	60	45		ND	C-1:		TOPSOIL	0.3	
	S-1	0-1				1.7	S-1: 0-4": TOPSOIL 4-12": Brown, CLAY & SILT, little fine to medium Sand.				
1	S-2	1-2				1.5	S-2: Brown, CLAY & SILT, little fine to medium Sand.	1			No Equipment Installed
2	S-3	2-3				0.8	S-3: Brown, CLAY & SILT, little fine to medium Sand.				
3	S-4	3-4				0.4	S-4: 0-9": Brown, CLAY & SILT, little fine to medium Sand. 9-12": No Recovery.				
4	S-5	4-5				NA	S-5: No Recovery.				
5	C-2	5-10	60	50		ND	C-2:				
	S-6	5-6				1.0	S-6: 0-10": No Recovery. 10-12": Brown, CLAY & SILT, little fine to medium Sand.				
6	S-7	6-7				0.9	S-7: Brown, CLAY & SILT, little fine to medium Sand.		CLAY & SILT		
7	S-8	7-8				1.0	S-8: 0-2": Brown, CLAY & SILT, little fine to medium Sand. 2-12": Brown-gray, CLAY & SILT, some fine to medium Sand.				
8	S-9	8-9				0.9	S-9: Brown-gray, CLAY & SILT, some fine to medium Sand.				
9	S-10	9-10				1.0	S-10: Brown-gray, CLAY & SILT, some fine to medium Sand.				
10	C-3	10-15	60	48		0.1	C-3:				
	S-11	10-11				NA	S-11: No Recovery.				
11	S-12	11-12			11-12	0.8	S-12: Brown, CLAY & SILT, little fine to medium Sand.				
12	S-13	12-13			12-13	5.1	S-13: 0-4": Brown, CLAY & SILT, little fine to medium Sand. 4-8": Dark gray, WASTE, trace fine Sand.			12.3	
									WASTE	12.7	
13	S-14	13-14				0.8	8-12": Brown, CLAY & SILT, trace fine Sand. S-14: Brown, CLAY & SILT, trace fine Sand.		CLAY & SILT		
14											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.3 ppmv.

Logger Initials:

Julie Groenleer

Boring No.:

HS-SB-111

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-111
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Julie Groenleer
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/20/2018
Finish Date: 6/20/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588513.7 **E** 12788665.7
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)
	S-15	14-15			14-15	0.7	S-15: Brown, CLAY & SILT, trace fine Sand.			
15									CLAY & SILT	
	C-4	15-20	60	52		0.1	C-4:			
	S-16	15-16				0.3	S-16: 0-8": No Recovery.			
							8-12": Brown, SILT & CLAY, trace fine Sand.			15.7
16									SILT & CLAY	
	S-17	16-17				1.2	S-17: 0-5": Brown, SILT & CLAY, trace fine Sand.			16.4
							5-7": Brown, fine to coarse SAND.		SAND	16.6
17							7-12": Brown, SILT & CLAY, trace fine Sand.		SILT & CLAY	17.1
	S-18	17-18				1.4	S-18: 0-1": Brown, SILT & CLAY, trace fine Sand.			
							1-12": Brown, fine SAND, some Silt.		SAND	
18										18.1
	S-19	18-19				1.3	S-19: 0-1": Brown, fine SAND, some Silt.			
							1-8": Brown, SILT & CLAY, little fine Sand.		SILT & CLAY	18.7
19							8-12": Brown, fine SAND, some Silt.			
	S-20	19-20				1.3	S-20: 0-7": Brown, fine SAND, some Silt.		SAND	
							7-12": Brown, fine SAND, trace Silt.	2		
20										20
							End of exploration at 20 feet.			
21										
22										
23										
24										
25										
26										
27										
28										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Julie Groenleer

Boring No.:
HS-SB-111

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-112 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/20/2018 **Finish Date:** 6/20/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588514 **E** 12788605.8 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):**5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	54		ND	C-1:		TOPSOIL	0.2	
	S-1	0-1				0.4	S-1: 0-2": TOPSOIL 2-12": Brown, CLAY & SILT, some fine to medium Sand.				
1	S-2	1-2				0.6	S-2: Brown, CLAY & SILT, some fine to medium Sand.	1			No Equipment Installed
2	S-3	2-3				0.9	S-3: Brown, CLAY & SILT, some fine to medium Sand.				
3	S-4	3-4				0.6	S-4: Brown, CLAY & SILT, some fine to medium Sand.				
4	S-5	4-5				0.7	S-5: 0-6": Brown, CLAY & SILT, some fine to medium Sand. 6-12": No Recovery.		CLAY & SILT		
5	C-2	5-10	60	36		ND	C-2:				
	S-6	5-6				NA	S-6: No Recovery.				
6	S-7	6-7				NA	S-7: No Recovery.				
7	S-8	7-8				0.9	S-8: Brown, CLAY & SILT, little fine to medium Sand.				
8	S-9	8-9			8-9	0.9	S-9: 0-6": Brown, CLAY & SILT, little fine to medium Sand. 6-9": Brown, fine to medium SAND, little Silt, trace Gravel.			8.5	
9	S-10	9-10			9-10	0.6	9-12": Brown, CLAY & SILT, little fine medium Sand. S-10: 0-3": Brown, CLAY & SILT, little fine to medium Sand.		SAND CLAY & SILT SILT & CLAY	8.9 9.3 9.6	
10	C-3	10-15	60	48		ND	3-7": Gray, SILT & CLAY, little fine to medium Sand. 7-12": Brown, fine to medium SAND, little Clay, trace Silt. C-3:				
	S-11	10-11				NA	S-11: No Recovery.				
11	S-12	11-12			11-12	0.8	S-12: 0-5": Brown, fine to medium SAND, little Clay, trace Silt.				
12	S-13	12-13				0.8	5-12": Brown, fine to coarse SAND, trace Gravel, trace Silt. S-13: Brown, fine to coarse SAND, trace Gravel, trace Silt.		SAND		
13	S-14	13-14				0.7	S-14: 0-5": Brown, fine to coarse SAND, trace Gravel, trace Silt.				
14							5-12": Brown, fine to medium SAND, trace Silt.				

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.3 ppmv.

Logger Initials:

Julie Groenleer

Boring No.:

HS-SB-112

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-112
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Julie Groenleer
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/20/2018
Finish Date: 6/20/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588514 **E** 12788605.8
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)
	S-15	14-15				0.8	S-15: Brown, fine to medium SAND, trace Silt.			
15										
	C-4	15-20	60	56		ND	C-4:		SAND	
	S-16	15-16				1.1	S-16: 0-4": No Recovery.			
16							4-12": Brown, fine to coarse SAND, trace Silt.			
	S-17	16-17				1.0	S-17: 0-3": Brown, fine to coarse SAND, trace Silt.			16.3
							3-12": Brown, CLAY & SILT, little fine Sand.			
17										
	S-18	17-18				0.8	S-18: Brown, CLAY & SILT, little fine Sand.		CLAY & SILT	
18										18
	S-19	18-19				0.5	S-19: 0-9": Brown, fine to medium SAND, little Silt.			
							9-12": Brown, CLAY & SILT, little fine to medium Sand.		SAND	18.8
19										
	S-20	19-20				1.1	S-20: 0-4": Brown, CLAY & SILT, little fine to medium Sand.		CLAY & SILT	19.3
20							4-12": Brown, fine to medium SAND, little Silt.	2	SAND	20
							End of exploration at 20 feet.			
21										
22										
23										
24										
25										
26										
27										
28										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Julie Groenleer

Boring No.:
HS-SB-112

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-113 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/20/2018 **Finish Date:** 6/20/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588349 **E** 12788603.4 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	41		ND	C-1:		TOPSOIL 0.4	No Equipment Installed
	S-1	0-1				0.9	S-1: 0-5": Dark Brown, TOPSOIL.			
1	S-2	1-2				0.9	5-12": Brown, fine to coarse SAND, little Silt & Clay, little Gravel. S-2: 0-2": Brown, fine to coarse SAND, little Silt & Clay, little Gravel.	1	SAND 1.2 SILT & CLAY 1.5	
2	S-3	2-3			2-3	0.8	2-6": Brown, SILT & CLAY, little fine to medium Sand.		SAND	
3	S-4	3-4				-	6-8": Brown, fine to coarse SAND, little Silt. 8-12": Brown, fine to medium SAND, some Silt. S-3: 0-8": Brown, fine to medium SAND, some Silt. 8-10': Dark gray-black, fine SAND to solidified WASTE.		2.7 WASTE 2.8	
4	S-5	4-5				NA	10-12': Brown, fine to medium SAND, trace Silt. S-4: 0-5": Brown, fine to medium SAND, trace Silt. 5-12": No Recovery.			
5	C-2	5-10	60	36		ND	S-5: No Recovery.			
	S-6	5-6				NA	C-2: S-6: No Recovery.			
6	S-7	6-7				NA	S-7: No Recovery.			
7	S-8	7-8			7-8	1.0	S-8: Brown, fine to medium SAND, trace Silt.			
8	S-9	8-9				0.9	S-9: Brown, fine to medium SAND, trace Silt.		SAND	
9	S-10	9-10			9-10	1.2	S-10: Brown, fine to medium SAND, trace Silt.			
10	C-3	10-15	60	34		ND	C-3:			
	S-11	10-11				NA	S-11: No Recovery.			
11	S-12	11-12				NA	S-12: No Recovery.			
12	S-13	12-13				0.8	S-13: 0-2": No Recovery. 2-7": Brown, fine to medium SAND, trace Silt.			
13	S-14	13-14				0.8	7-9": Brown-gray, fine to medium SAND, trace Silt. 9-12": Brown, fine to medium SAND, little Silt. S-14: Brown, fine to medium SAND, little Silt.			
14										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.1 ppmv.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-113

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-113
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/20/2018
Finish Date: 6/20/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588349 **E** 12788603.4
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-15	14-15				1.1	S-15: 0-1": Brown, fine to medium SAND, little Silt.				
							1-9": Brown, fine to coarse SAND, some Silt & Clay.				
15							9-12": Brown, fine to coarse SAND, little Silt & Clay.				
	C-4	15-20	60	40		0.1	C-4:				
	S-16	15-16				NA	S-16: No Recovery.			SAND	
16											
	S-17	16-17				1.1	S-17: 0-8": No Recovery.				
							8-12": Brown, fine to medium SAND, little Silt.				
17											
	S-18	17-18				1.2	S-18: 0-3": Brown, fine to coarse SAND, trace Silt,				17.3
							3-5": ROCK, trace Silty Clay.			ROCK	17.4
18							5-12": Brown, fine SAND, trace Silt.				
	S-19	18-19				1.0	S-19: Brown, fine SAND, trace Silt.			SAND	
19											
	S-20	19-20				0.8	S-20: 0-5": Brown, fine SAND, trace Silt.				19.4
							5-8": Brown, fine SAND and CLAY, trace Silt.	2		SAND AND CLAY	19.7
20							8-12": Brown, fine SAND, trace Silt.			SAND	20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-113

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-114 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/20/2018 **Finish Date:** 6/20/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588341.8 **E** 12788664 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	40		ND	C-1:		TOPSOIL	0.2	
	S-1	0-1			0-1	1.0	S-1: 0-2": Dark Brown, TOPSOIL.		CLAYEY SILT	0.6	
1							2-7": Brown, Clayey SILT, trace fine to coarse Sand.		SILT & CLAY	0.7	
	S-2	1-2				1.2	7-10": Gray, SILT & CLAY, little fine Sand, trace Organics (Roots).	1	SAND	0.8	No Equipment Installed
2							10-12": Brown, fine to medium SAND, little Silt.				
	S-3	2-3			2-3	0.9	S-2: 0-11": Brown, fine to medium SAND, little Silt (3" Brown, Clayey SILT lens at 6").	2			
3							11-12": Brown, fine to medium SAND, little Clay & Silt.				
	S-4	3-4				0.7	S-3: Brown, Clayey SILT, little fine to coarse Sand.				
4							S-4: 0-4": Brown, Clayey SILT, little fine to coarse Sand.				
	S-5	4-5				NA	4-12": No Recovery.				
							S-5: No Recovery.				
5									CLAYEY SILT		
	C-2	5-10	60	44		0.1	C-2:				
	S-6	5-6				NA	S-6: No Recovery.				
6											
	S-7	6-7			6-7	1.1	S-7: 0-4": No Recovery.				
							4-12": Brown, Clayey SILT, trace fine to medium Sand, trace Gravel.				
7											
	S-8	7-8				1.1	S-8: Brown, Clayey SILT, trace fine to medium Sand, trace Gravel.				
8											
	S-9	8-9				1.3	S-9: 0-7": Brown, Clayey SILT, trace fine to medium Sand, trace Gravel.			8.6	
9							7-12": Brown, fine to coarse SAND, little Gravel, trace Silt.		SAND		
	S-10	9-10				1.3	S-10: 0-5": Brown, fine to coarse SAND, little Gravel, trace Silt.			9.4	
									CLAY & SILT	9.6	
10							5-7": Brown, CLAY & SILT, some fine to coarse Sand.				
	C-3	10-15	60	22		ND	7-12": Brown, fine to coarse SAND, trace Gravel, trace Silt.				
	S-11	10-11				NA					
11							C-3:				
	S-12	11-12				NA	S-11: No Recovery.				
							S-12: No Recovery.				
12									SAND		
	S-13	12-13				NA	S-13: No Recovery.				
13											
	S-14	13-14				1.2	S-14: 0-2": No Recovery.				
							2-12": Brown, fine to coarse SAND, trace Silt, trace Gravel.				
14											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.1 ppmv.
2. Petroleum odor noted in sample.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-114

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-114
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/20/2018
Finish Date: 6/20/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588341.8 **E** 12788664
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-15	14-15				1.0	S-15: Brown, fine to coarse SAND, trace Silt, trace Gravel.				
15											
	C-4	15-20	60	42		ND	C-4:				
	S-16	15-16				NA	S-16: No Recovery.				
16											
	S-17	16-17				1.2	S-17: 0-6": No Recovery. 6-12": Brown, fine to coarse SAND, trace Silt, trace Gravel.				
17										SAND	
	S-18	17-18				1.0	S-18: 0-4": Brown, fine to coarse SAND, trace Silt, trace Gravel. 4-12": Brown, fine SAND, little Silt.				
18											
	S-19	18-19				0.7	S-19: Brown, fine SAND, little Silt.				
19											
	S-20	19-20				1.1	S-20: Brown, fine to medium SAND, little Silt.				
20								3			20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

3. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-114

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-115 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Sheryl Stephenson **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/20/2018 **Finish Date:** 6/20/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588423.4 **E** 12788636.2 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	48		0.1	C-1:		TOPSOIL	0.3	
	S-1	0-1				0.8	S-1: 0-4": TOPSOIL				
1							4-12": Brown, CLAY & SILT, little fine Sand.		CLAY & SILT		
	S-2	1-2				0.9	S-2: 0-3": Brown, CLAY & SILT, little fine Sand.	1		1.3	No Equipment Installed
							3-12": Brown, fine to medium SAND, little Silt.		SAND		
2	S-3	2-3				0.8	S-3: Brown, CLAY & SILT, trace fine to coarse Sand.			2	
3									CLAY & SILT		
	S-4	3-4			3-4	0.9	S-4: 0-4": Brown, CLAY & SILT, trace fine to coarse Sand.			3.3	
							4-12": Brown, fine to coarse SAND, some Silt.				
4	S-5	4-5				NA	S-5: No Recovery.				
5	C-2	5-10	60	36		ND	C-2:				
	S-6	5-6				NA	S-6: No Recovery.		SAND		
6	S-7	6-7				NA	S-7: No Recovery.				
7	S-8	7-8			7-8	0.9	S-8: Brown, fine to coarse SAND, some Silt.				
8										8.1	
	S-9	8-9				0.8	S-9: 0-1": Brown, fine to coarse SAND, some Silt.		ROCK FRAGMENTS	8.2	
							1-2": ROCK FRAGMENTS.				
9							2-12": Brown, fine to medium SAND, little Silt.		SAND		
	S-10	9-10			9-10	1.0	S-10: 0-8": Brown, fine to medium SAND, little Silt.				
							8-12": Brown, CLAY & SILT, trace fine Sand.			9.7	
10	C-3	10-15	60	40		0.1	C-3:				
	S-11	10-11				NA	S-11: No Recovery.		CLAY & SILT		
11	S-12	11-12				1.2	S-12: 0-8": No Recovery.				
							8-9": ROCK FRAGMENTS			11.7	
12							9-12": Brown, fine to medium SAND, trace Silt.		ROCK FRAGMENTS	11.8	
	S-13	12-13				1.4	S-13: Brown, fine to medium SAND, trace Silt.				
13									SAND		
	S-14	13-14				1.0	S-14: 0-6": Brown, fine to medium SAND, trace Silt.				
							6-12": Brown, CLAY & SILT, trace fine Sand.			13.5	
14									CLAY & SILT		

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.3 ppmv.

Logger Initials:

Sheryl Stephenson

Boring No.:

HS-SB-115

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-115
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Sheryl Stephenson
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/20/2018
Finish Date: 6/20/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588423.4 **E** 12788636.2
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)
	S-15	14-15				1.1	S-15: Brown, CLAY & SILT, trace fine Sand.			
15									CLAY & SILT	
	C-4	15-20	60	54		ND	C-4:			
	S-16	15-16				1.4	S-16: 0-6": No Recovery.			
							6-9": Brown, CLAY & SILT, trace fine Sand.			15.8
16	S-17	16-17				1.3	9-12": Brown, fine to medium SAND, little Silt.		SAND	16.2
							S-17: 0-2": Brown, fine to medium SAND, little Silt.			
17							2-12": Brown, CLAY & SILT, little fine Sand.			
	S-18	17-18				1.6	S-18: Brown, CLAY & SILT, little fine Sand.			
18									CLAY & SILT	
	S-19	18-19				-	S-19: 0-9": Brown, CLAY & SILT, little fine Sand.			
							9-12": Brown, fine SAND, little Silt.			18.8
19	S-20	19-20				1.5	S-20: Brown, fine SAND, little Silt.		SAND	
20								2		20
							End of exploration at 20 feet.			
21										
22										
23										
24										
25										
26										
27										
28										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Sheryl Stephenson

Boring No.:
HS-SB-115

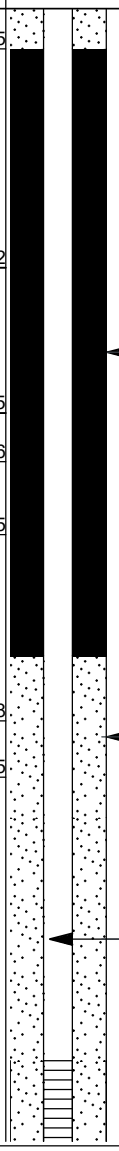
GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-116 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/21/2018 **Finish Date:** 6/21/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** TBD **E** TBD **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** 5' East **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark
	C-1	0-5	60	48		ND	C-1:	
	S-1	0-1				1.1	S-1: 0-6": TOPSOIL 6-12": Brown, fine to medium SAND, little Silt.	
1	S-2	1-2				1.1	S-2: 0-6": Brown, fine to medium SAND, little Silt. 6-12": Brown, fine to medium SAND, trace Silt.	1
2	S-3	2-3				1.2	S-3: Brown, fine to medium SAND, trace Silt.	
3	S-4	3-4				1.1	S-4: 0-2": Brown, fine to medium SAND, trace Silt. 2-12": Brown, CLAY & SILT, trace fine to medium Sand.	
4	S-5	4-5				NA	S-5: No Recovery.	
5	C-2	5-10	60	60		ND	C-2:	
	S-6	5-6			5-6	1.5	S-6: 0-7": Brown, fine to medium SAND, little Silt. 7-12": Brown, CLAY & SILT, trace fine to coarse Sand.	
6	S-7	6-7				1.6	S-7: 0-6": Brown, CLAY & SILT, trace fine to coarse Sand. 6-12": Brown, fine to medium SAND, trace Silt.	
7	S-8	7-8				1.2	S-8: Brown, fine to medium SAND, trace Silt.	
8	S-9	8-9			8-9	1.1	S-9: 0-10": Brown, fine to medium SAND, trace Silt. 10-12": Brown, CLAY & SILT, trace fine Sand.	
9	S-10	9-10				1.2	S-10: 0-6": Brown, CLAY & SILT, trace fine Sand. 6-12": Brown, fine to medium SAND, trace Silt.	
10	C-3	10-15	60	59		ND	C-3:	
	S-11	10-11				1.3	S-11: 0-1": No Recovery. 1-12": Brown, fine to medium SAND, trace Silt.	
11	S-12	11-12			11-12	1.5	S-12: Brown, fine to medium SAND, trace Silt.	
12	S-13	12-13				1.1	S-13: Brown, fine to medium SAND, trace Silt, (1" lens of brown, CLAY & SILT at approximately 9-10").	
13	S-14	13-14				1.1	S-14: Brown, fine to medium SAND, trace Silt.	
14								

Elev. (ft.)	Stratum Description	Depth (ft.)
	TOPSOIL	0.5
	SAND	3.2
	CLAY & SILT	5
	SAND	5.6
	CLAY & SILT	6.5
	SAND	8.8
	CLAY & SILT	9.5
	SAND	



Equipment Installed

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.1 ppmv.

Logger Initials:

Julie Groenleer

Boring No.:

HS-SB-116

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-116
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Julie Groenleer
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/21/2018
Finish Date: 6/21/2018
Final Depth (ft.): 20

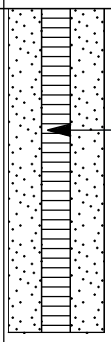
BORING COORDINATES (International Feet):
N TBD **E** TBD
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
5' East
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) / Stratum Description / Depth (ft.)
	S-15	14-15				1.1	S-15: Brown, fine to medium SAND, trace Silt.		
15									
	C-4	15-20	60	59		ND	C-4:		
	S-16	15-16				1.2	S-16: 0-1": No Recovery.		
16							1-12": Brown, fine to medium SAND, trace Silt.		
	S-17	16-17				1.5	S-17: Brown, fine to medium SAND, trace Silt.		SAND
17									
	S-18	17-18				1.5	S-18: Brown, fine to medium SAND, trace Silt.		
18									
	S-19	18-19				0.9	S-19: 0-5": Brown, fine to medium SAND, trace Silt.		
							8-12': brown, CLAY & SILT, trace fine Sand.		18.7
19									CLAY & SILT 19.1
	S-20	19-20				0.9	S-20: 0-1": Brown, CLAY & SILT, trace fine Sand.		SAND 19.3
							1-3": Brown, fine to coarse SAND, trace Silt.		19.5
20							3-6": Brown, CLAY & SILT, trace fine Sand.		CLAY & SILT 20
							6-12": Brown, fine to medium SAND, trace Silt.		SAND
21							End of exploration at 20 feet.		
22									
23									
24									
25									
26									
27									
28									



Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Julie Groenleer

Boring No.:
HS-SB-116

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-117 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/14/2018 **Finish Date:** 6/14/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588402.6 **E** 12788426.2 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)
	C-1	0-5	60	41		ND	C-1:		TOPSOIL	0.5
	S-1	0-1				2.5	S-1: 0-6": Dark brown, TOPSOIL.			
1							6-12": Dark brown, SILT, little fine to medium Sand.		SILT	
	S-2	1-2			1-2	3.4	S-2: 0-5": Dark brown, SILT, little fine to medium Sand.	1		1.4
							5-12": Brown, fine to medium SAND, trace Silt.			
2										
	S-3	2-3				1.6	S-3: 0-9": Brown, fine to medium SAND, trace Silt.		SAND	
							9-12": Brown, CLAY & SILT, trace fine to medium Sand.			2.8
3										
	S-4	3-4				2.8	S-4: 0-5": Brown, CLAY & SILT, trace fine to medium Sand.			
4							5-12": No Recovery.		CLAY & SILT	
	S-5	4-5				NA	S-5: No Recovery.			
5										5
	C-2	5-10	60	40		ND	C-2:			
	S-6	5-6				NA	S-6: No Recovery			
6										
	S-7	6-7				3.4	S-7: 0-8": No Recovery.			
							8-11": Brown, fine to coarse SAND, trace Silt.			
7							11-12": Light brown, fine to coarse SAND, trace Silt.			
	S-8	7-8			7-8	3.6	S-8: Light brown-brown, fine to coarse SAND, trace Silt.		SAND	
8										
	S-9	8-9				3.2	S-9: Brown, fine to coarse SAND, trace Silt.			
9										
	S-10	9-10				2.6	S-10: Brown, fine to coarse SAND, trace Silt.			
10										10
	C-3	10-15	60	60		ND	C-3:			
	S-11	10-11				2.4	S-11: Brown, Clayey SILT, trace fine to coarse Sand, trace Gravel.		CLAYEY SILT	
11										
	S-12	11-12				2.7	S-12: 0-6": Brown, Clayey SILT, trace fine to coarse Sand, trace Gravel.			11.5
12							6-12": Brown, fine to coarse SAND, little Clay, trace Silt, trace Gravel.	2	SAND	12
	S-13	12-13			12-13	3.1	S-13: 0-4": Brown, Clayey SILT, little fine to coarse Sand.		CLAYEY SILT	12.3
									SAND	12.5
13							4-6": Olive gray, fine to coarse SAND, trace Silt.			
	S-14	13-14				2.6	6-12": Brown, Clayey SILT, trace fine to medium Sand.		CLAYEY SILT	
14							S-14: Brown-gray, Clayey SILT, trace fine Sand.			

Equipment Installed

- Bentonite 0-9'
- 1" PVC Riser 0-11'
- 1" PVC Screen 11-16'

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.2 ppmv.
2. Groundwater was encountered at approximately 11.5 feet below ground surface.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-117

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-117
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/14/2018
Finish Date: 6/14/2018
Final Depth (ft.): 20

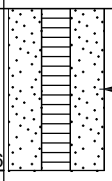
BORING COORDINATES (International Feet):
N 588402.6 **E** 12788426.2
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.):5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-15	14-15				2.2	S-15: Gray, Clayey SILT, trace fine Sand.				
15	C-4	15-20	60	48		ND	C-4:			CLAYEY SILT	
	S-16	15-16				NA	S-16: No Recovery.				
16											16
	S-17	16-17				3.9	S-17: Brown, fine to medium SAND, trace Silt.			SAND	
17											17
	S-18	17-18				2.9	S-18: Gray, SILT & CLAY, trace fine Sand.				
18											
	S-19	18-19				3.0	S-19: Gray, SILT & CLAY, trace fine Sand.				
19										SILT & CLAY	
	S-20	19-20				3.6	S-20: Gray, SILT & CLAY, trace fine Sand.				
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											



Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-117

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-118 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/14/2018 **Finish Date:** 6/14/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588338.3 **E** 12788420.5 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	48		ND	C-1:		TOPSOIL 0.3	
	S-1	0-1				3.4	S-1: 0-4": Brown, TOPSOIL			
1	S-2	1-2				3.9	4-12": Brown, fine SAND, some Silt, trace Organics (Roots). S-2: Brown, fine SAND, some Silt, trace Organics (Roots).	1		No Equipment Installed
2	S-3	2-3				2.9	S-3: Brown, fine to medium SAND, some Silt, trace Clay.			
3	S-4	3-4				2.5	S-4: Brown, fine to medium SAND, some Silt, trace Clay.			
4	S-5	4-5				NA	S-5: No Recovery.		SAND	
5	C-2	5-10	60	43		ND	C-2:			
	S-6	5-6				NA	S-6: No Recovery.			
6	S-7	6-7				3.0	S-7: 0-5": No Recovery. 5-12": Brown, fine to medium SAND, some Silt, trace Organics (Roots).			
7	S-8	7-8			7-8	2.7	S-8: 0-2": Brown, fine to medium SAND, some Silt. 2-12": Brown, Clayey SILT, little fine to medium Sand.		7.2	
8	S-9	8-9				1.3	S-9: 0-10": Brown, Clayey SILT, little fine to medium Sand. 10-12": Brown, CLAY & SILT, trace fine Sand.		CLAYEY SILT 8.8	
9	S-10	9-10				2.7	S-10: Brown, CLAY & SILT, trace fine Sand.		CLAY & SILT 10	
10	C-3	10-15	60	60		ND	C-3:			
	S-11	10-11				3.8	S-11: Brown, fine to medium SAND, some Silt.			
11	S-12	11-12				4.7	S-12: Brown, fine to medium SAND, some Silt, little Clay.		SAND 12.4	
12	S-13	12-13			12-13	4.5	S-13: 0-5": Brown, fine to medium SAND, some Silt, little Clay. 5-12": Brown, Clayey SILT, trace fine to medium Sand.			
13	S-14	13-14			13-14	4.7	S-14: 0-7": Brown, Clayey SILT, trace fine to medium Sand.		CLAYEY SILT 13.6	
14									CLAY & SILT	

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-118

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-118
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/14/2018
Finish Date: 6/14/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588338.3 **E** 12788420.5
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)
	S-15	14-15				1.8	7-12": Brown, CLAY & SILT, trace fine to medium Sand. S-15: Brown, CLAY & SILT, trace fine to medium Sand, (2" fine to medium Sand lens at 4").			
15	C-4	15-20	60	60		0.3	C-4:			
	S-16	15-16				2.5	S-16: Brown, CLAY & SILT, trace fine to medium Sand.		CLAY & SILT	
16	S-17	16-17				3.4	S-17: Brown, CLAY & SILT, trace fine to medium Sand.			
17										17
	S-18	17-18				2.0	S-18: Brown, fine to medium SAND, trace Silt.			
18	S-19	18-19				2.1	S-19: 0-11": Brown, fine to medium SAND, trace Silt. 11-12": Brown, Silty CLAY, trace fine Sand.		SAND	
19										18.9
	S-20	19-20				1.6	S-20: 0-3": Brown, Silty CLAY, trace fine Sand.		SILTY CLAY	19.3
20							3-12": Light brown, fine to medium SAND, trace Silt.	2	SAND	20
							End of exploration at 20 feet.			
21										
22										
23										
24										
25										
26										
27										
28										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-118

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-119 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/21/2018 **Finish Date:** 6/21/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** TBD **E** TBD **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** 5' East **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	47		ND	C-1:		TOPSOIL 0.4	No Equipment Installed
	S-1	0-1				1.4	S-1: 0-5": Dark brown, TOPSOIL, trace Organics (Roots).			
1							5-12": Brown, CLAY & SILT, little fine to medium Sand.			
	S-2	1-2				1.1	S-2: 0-7": Brown, CLAY & SILT, little fine to medium Sand.	1	CLAY & SILT	
							7-12": Brown, fine to medium SAND, little Clay & Silt.		1.6	
2									SAND 2	
	S-3	2-3			2-3	1.6	S-3: 0-8": Brown, CLAY & SILT, little fine to coarse Sand.			
							8-12": Brown, Silty CLAY, trace fine Sand.		CLAY & SILT 2.7	
3										
	S-4	3-4				1.5	S-4: 0-11": Brown, Silty CLAY, trace fine Sand.			
							11-12": No Recovery.			
4									SILTY CLAY	
	S-5	4-5				NA	S-5: No Recovery.			
5									5	
	C-2	5-10	60	49		ND	C-2:			
	S-6	5-6				1.8	S-6: 0-11": No Recovery.			
							11-12": Brown, CLAY.		CLAY	
6									6.2	
	S-7	6-7			6-7	2.0	S-7: 0-2": Brown, CLAY.		6.5	
							2-3": Brown, fine to medium SAND, trace Organics		SAND	
7							(Roots), trace Silt.		SILTY CLAY	
	S-8	7-8				1.9	3-12": Brown, Silty CLAY, trace fine to medium Sand,		7.3	
							trace Gravel.			
8										
	S-9	8-9				2.0	S-8: 0-4": Brown, Silty CLAY, trace fine to medium Sand,			
							trace Gravel.			
							4-12": Brown, fine to medium SAND, trace Silt.			
9										
	S-10	9-10				2.2	S-9: Brown, fine to medium SAND, trace Silt.			
							S-10: Brown, fine to medium SAND, trace Silt.			
10										
	C-3	10-15	60	56		0.3	C-3:			
	S-11	10-11			10-11	3.5	S-11: 0-4": No Recovery.		SAND	
11							4-12": Brown-gray, fine to medium SAND, trace Silt.			
	S-12	11-12				2.6	S-12: Brown, fine to medium SAND, trace Silt (2" lens of			
							Brown, fine to medium SAND, little Silt at 1").			
12										
	S-13	12-13				2.0	S-13: 0-11": Brown, fine to medium SAND, trace Silt.			
							11-12": Brown, fine SAND, little Clay, little Silt.			
13										
	S-14	13-14				2.4	S-14: Brown, fine to medium SAND, trace Silt.			
14										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.2 ppmv.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-119

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-119
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/21/2018
Finish Date: 6/21/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N TBD **E** TBD
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
5' East
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-15	14-15				2.7	S-15: Brown, fine to medium SAND, trace Silt.				
15											
	C-4	15-20	60	54		ND	C-4:				
	S-16	15-16				1.4	S-16: 0-6": No Recovery.				
16							6-12": Brown-gray, fine SAND, trace Silt.			SAND	
	S-17	16-17				2.3	S-17: Brown-gray, fine SAND, trace Silt.				
17											
	S-18	17-18				1.6	S-18: 0-4": Brown-gray, fine SAND, trace Silt.				
							4-8": Brown, fine to medium SAND, trace Gravel, trace				17.7
18							Silt.			CLAY	17.8
	S-19	18-19				1.8	8-9": Brown, CLAY, trace fine to medium Sand.				
							9-12": Brown, fine to medium SAND, trace Silt.				
19							S-19: Brown, fine to medium SAND, trace Silt.			SAND	
	S-20	19-20				2.0	S-20: Brown, fine to medium SAND, trace Silt.				
20								2			20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-119

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-120 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Ally Suding **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/13/2018 **Finish Date:** 6/13/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588369.6 **E** 12788464.3 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	60		ND	C-1:		TOPSOIL 0.2	No Equipment Installed
	S-1	0-1				2.4	S-1: 0-2": Dark brown, TOPSOIL.			
1	S-2	1-2				1.1	2-12": Dark brown, Clayey SILT, some fine Sand, trace Gravel, trace Roots. S-2: Dark brown, Clayey SILT, some fine Sand, trace Gravel, trace Roots.	1	CLAYEY SILT 2	
2	S-3	2-3				1.2	S-3: Brown, SILT & CLAY, some fine to medium Sand.		SILT & CLAY 3	
3	S-4	3-4			3-4	2.4	S-4: 0-2": Brown, SILT, some fine to medium Sand. 2-12": Brown, SILT & CLAY, trace fine Sand.		SILT 3.2	
4	S-5	4-5				1.6	S-5: 0-10": Brown, SILT & CLAY, trace fine Sand. 10-12": Brown, fine to medium SAND, trace Silt.		SILT & CLAY 4.8	
5	C-2	5-10	60	46		ND	C-2:			
	S-6	5-6				NA	S-6: No Recovery.		SAND	
6	S-7	6-7			6-7	2.4	S-7: 0-2": No Recovery. 2-12": Brown, SILT & CLAY, some fine to medium Sand, some Gravel.		6.2 SILT & CLAY 7	
7	S-8	7-8				2.4	S-8: Brown, CLAY & SILT, trace fine Sand.		CLAY & SILT 8	
8	S-9	8-9			8-9	2.8	S-9: Brown, Silty CLAY, some fine to medium Sand.			
9	S-10	9-10				0.9	S-10: 0-9": Brown, Silty CLAY, some fine to medium Sand. 9-12": Brown, fine SAND.		SILTY CLAY 9.8	
10	C-3	10-15	60	40		ND	C-3:			
	S-11	10-11				NA	S-11: No Recovery.			
11	S-12	11-12				1.3	S-12: 0-8": No Recovery. 8-12": Brown, fine SAND, trace Silt.		SAND	
12	S-13	12-13				2.1	S-13: Brown, fine SAND, trace Silt.			
13	S-14	13-14				1.3	S-14: Brown, Clayey SILT, some fine to medium Sand, trace Gravel.	2	13 CLAYEY SILT	
14									14	

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.2 ppmv.
2. Soil sample S-14 was wet.

Logger Initials:

Ally Suding

Boring No.:

HS-SB-120

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-120
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Ally Suding
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/13/2018
Finish Date: 6/13/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588369.6 **E** 12788464.3
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-15	14-15				1.5	S-15: Brown, CLAY & SILT, trace fine to coarse Sand, trace Gravel.				
15											
	C-4	15-20	60	41		ND	C-4:			CLAY & SILT	
	S-16	15-16				NA	S-16: No Recovery.				
16											
	S-17	16-17				2.1	S-17: 0-7": No Recovery 7-12": Brown, fine SAND.				16.6
17										SAND	
	S-18	17-18				2.5	S-18: 0-4": Brown, fine SAND. 4-12": Silty CLAY.				17.3
18										SILTY CLAY	
	S-19	18-19				1.8	S-19: 0-6": Silty CLAY. 6-12": Yellowish-orange, fine SAND.				18.5
19											
	S-20	19-20				2.5	S-20: Yellowish-orange, fine SAND.			SAND	
20											20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Ally Suding

Boring No.:
HS-SB-120

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-121 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/20/2018 **Finish Date:** 6/20/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** TBD **E** TBD **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** 5' West **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	46		ND	C-1:		TOPSOIL 0.3	
	S-1	0-1				0.8	S-1: 0-4": Dark brown, TOPSOIL.			
1	S-2	1-2			1-2	-	4-12": Brown, Silty CLAY, trace fine Sand, trace Organics (Roots).	1	SILTY CLAY	No Equipment Installed
2	S-3	2-3			2-3	-	S-2: Brown, Silty CLAY, trace fine Sand, trace Organics (Roots) (2" lens of Clayey SILT at 9").		2	
							S-3: Brown, Clayey SILT, trace fine to medium Sand (1" lens of fine to coarse SAND, some Gravel, at 8").		CLAYEY SILT	
3	S-4	3-4				-	S-4: 0-2": Brown, fine SAND, little Silt.		3 SAND 3.2	
							2-10": Brown, Silty CLAY, trace fine Sand.			
4							10-12": No Recovery.			
	S-5	4-5				NA	S-5: No Recovery.			
5	C-2	5-10	60	42		ND	C-2:			
	S-6	5-6				NA	S-6: No Recovery.			
6									SILTY CLAY	
	S-7	6-7			6-7	1.2	S-7: 0-6": No Recovery.			
							6-12": Brown, Silty CLAY, trace fine Sand.			
7	S-8	7-8				0.9	S-8: Brown, Silty CLAY, trace fine Sand.			
8	S-9	8-9				1.5	S-9: 0-2": Brown, Silty CLAY, trace fine Sand.		8.2	
							2-12": Light brown, fine SAND, trace Silt.			
9	S-10	9-10				1.5	S-10: Light brown, fine SAND, trace Silt.			
									SAND	
10	C-3	10-15	60	48		0.1	C-3:			
	S-11	10-11				NA	S-11: No Recovery.			
11	S-12	11-12				0.9	S-12: Brown, Silty CLAY, trace fine Sand.		11	
									SILTY CLAY	
12	S-13	12-13				1.1	S-13: 0-2": Brown, Silty CLAY, trace fine Sand.		12.2	
							2-12": Light brown, fine SAND, trace Silt.			
13	S-14	13-14				1.2	S-14: Light brown, fine SAND, trace Silt.		SAND	
14										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.1 ppmv.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-121

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-121
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/20/2018
Finish Date: 6/20/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N TBD **E** TBD
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
5' West
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-15	14-15				1.1	S-15: Light brown-brown, fine SAND, trace Silt.				
15											
	C-4	15-20	60	47		ND	C-4:				
	S-16	15-16				NA	S-16: No Recovery.				
16										SAND	
	S-17	16-17				1.2	S-17: 0-1": No Recovery, 1-12": Brown, fine SAND, trace Silt.				
17											
	S-18	17-18				1.2	S-18: 0-1": Brown, fine SAND, trace Silt. 1-10": Brown, fine to medium SAND, trace Gravel. 10-12": Brown, Silty CLAY, some fine to medium Sand.				17.8
18										SILTY CLAY	18.1
	S-19	18-19				1.2	S-19: 0-1": Brown, Silty CLAY, some fine to medium Sand. 1-12": Light brown, fine SAND, trace Silt.				
19										SAND	
	S-20	19-20				1.4	S-20: Light brown, fine SAND, trace Silt.				
20								2			20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-121

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	Wolverine World Wide House Street Rockford, Michigan	EXPLORATION NO.: HS-SB-122 SHEET: 1 of 2 PROJECT NO: 16.0062335.52 REVIEWED BY: SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/12/2018 **Finish Date:** 6/12/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588251.5 **E** 12788469.6 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	50		0.1	C-1:			TOPSOIL	0.2	
	S-1	0-1				8.3	S-1: 0-2": Dark brown, TOPSOIL.					
1	S-2	1-2				3.1	2-12": Dark brown, SILT, trace fine Sand, trace Organics (Roots). S-2: 0-8": Dark brown, SILT, trace fine Sand, trace Organics (Roots).	1		SILT	1.7	No Equipment Installed
2	S-3	2-3				1.8	8-12": Brown, CLAY & SILT, little fine to medium Sand. S-3: Brown, CLAY & SILT, trace fine to medium Sand.					
3	S-4	3-4				2.4	S-4: Brown, CLAY & SILT, trace fine to medium Sand.			CLAY & SILT		
4	S-5	4-5				4.3	S-5: 0-2": Brown, CLAY & SILT, trace fine to medium Sand. 2-12": No Recovery.					
5	C-2	5-10	60	60		ND	C-2:				5	
	S-6	5-6				2.5	S-6: 0-7": Brown, Silty CLAY, trace fine to medium Sand.			SILTY CLAY	5.6	
6	S-7	6-7				3.6	7-12": Brown, Clayey SILT, trace fine to medium Sand. S-7: Brown, Clayey SILT, trace fine to medium Sand.					
7	S-8	7-8			7-8	4.0	S-8: Brown, Clayey SILT, trace fine to medium Sand.			CLAYEY SILT		
8	S-9	8-9				2.3	S-9: 0-10": Brown, Clayey SILT, trace fine to medium Sand.				8.8	
9	S-10	9-10				2.5	10-12": Brown, fine to medium SAND, trace Silt. S-10: Brown, fine to medium SAND, trace Silt (1" lens of Clayey SILT at 1")			SAND		
10	C-3	10-15	60	52		0.1	C-3:					
	S-11	10-11				2.8	S-11: 0-8": No Recovery.				10.7	
11	S-12	11-12				1.5	8-12": Brown, CLAY & SILT, trace fine to medium Sand. S-12: Brown, fine to medium SAND, trace Silt (2" lens of CLAY & SILT at 7").			CLAY & SILT	11	
12	S-13	12-13				1.6	S-13: Brown, fine to medium SAND, trace Silt (3" lens of CLAY & SILT at 1").			SAND		
13	S-14	13-14				2.4	S-14: 0-5": Brown, fine to medium SAND, trace Silt. 5-12": Brown, CLAY & SILT, trace fine to medium Sand.				13.4	
14										CLAY & SILT		

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.5 ppmv.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-122

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-122
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/12/2018
Finish Date: 6/12/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588251.5 **E** 12788469.6
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) / Stratum Description	Depth (ft.)
	S-15	14-15			14-15	4.6	S-15: 0-4": Brown, CLAY & SILT, trace fine to medium Sand.			14.3
15	C-4	15-20	60	48		ND	4-12": Light brown, fine to medium SAND, trace Silt. C-4:		SAND	
	S-16	15-16				NA	S-16: No Recovery.			
16										16
	S-17	16-17			16-17	5.5	S-17: 0-6": Brown, CLAY & SILT, little fine to medium Sand.		CLAY & SILT	16.5
17							6-12": Light brown, fine to medium SAND, trace Silt.			
	S-18	17-18				3.2	S-18: Light brown, fine to medium SAND, trace Silt.			
18	S-19	18-19				3.5	S-19: Light brown, fine to medium SAND, trace Silt.		SAND	
19	S-20	19-20				2.6	S-20: Light brown, fine to medium SAND, trace Silt (3" lens of Silty CLAY at 6").	2		
20										20
							End of exploration at 20 feet.			
21										
22										
23										
24										
25										
26										
27										
28										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-122

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-123 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Ally Suding **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/12/2018 **Finish Date:** 6/12/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588172.8 **E** 12788475.4 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Stratum Description	Elev. (ft.) / Depth (ft.)	Equipment Installed
	C-1	0-5	60	60		ND	C-1:				
	S-1	0-1				3.9	S-1: Brown, Clayey SILT, trace fine to medium Sand, trace Roots.		CLAYEY SILT	1	
1	S-2	1-2				3.0	S-2: Brown, SILT & CLAY, trace fine Sand.	1			
2	S-3	2-3				3.2	S-3: Brown, SILT & CLAY, trace fine Sand.		SILT & CLAY		
3	S-4	3-4				2.8	S-4: Brown, SILT & CLAY, trace fine Sand.				
4	S-5	4-5				2.9	S-5: Brown, SILT, trace fine Sand.			4	
5	C-2	5-10	60	43		ND	C-2:				
	S-6	5-6				NA	S-6: No Recovery.				Bentonite 0-11'
6	S-7	6-7			6-7	1.6	S-7: 0-5": No Recovery. 5-12": Brown, SILT, some Gravel, little fine Sand.		SILT		
7	S-8	7-8			7-8	4.2	S-8: 0-11": Brown, SILT, some Gravel, little fine Sand. 11-12: Light gray, GRAVEL.				
8	S-9	8-9				3.2	S-9: 0-7": Brown, fine to coarse SAND and GRAVEL, some Silt. 7-12": Brown, fine to medium SAND, trace Gravel.		GRAVEL SAND & GRAVEL	7.9 8 8.6	
9	S-10	9-10					S-10: Brown, fine to medium SAND.		SAND		
10	C-3	10-15	60	60		ND	C-3:	2			
	S-11	10-11				3.4	S-11: 0-9": Brown, fine SAND, trace Silt. 9-12": Brown, Silty CLAY.			10.8	
11	S-12	11-12				1.9	S-12: 0-3": Brown, Silty CLAY. 3-12": Clayey SILT.		SILTY CLAY CLAYEY SILT	11.3 12	1" PVC Riser 0-12.5'
12	S-13	12-13			12-13	4.7	S-13: 0-5": Brown, fine SAND, some Silt. 5-12": Brown, fine to medium SAND.		SAND		
13	S-14	13-14				2.3	S-14: 0-4": Brown, fine to medium SAND. 4-12": Brown, SILT & CLAY.		SILT & CLAY	13.3	
14											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.9 ppmv.
2. Groundwater was encountered at approximately 10 feet below ground surface.

Logger Initials:

Ally Suding

Boring No.:

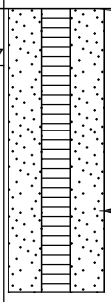
HS-SB-123

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-123 **SHEET:** 2 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Ally Suding **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/12/2018 **Finish Date:** 6/12/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588172.8 **E** 12788475.4 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):**5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)
	S-15	14-15				3.2	S-15: 0-8": Brown, SILT & CLAY. 8-12": Brown, fine to medium SAND, trace Gravel.		SILT & CLAY 14.7
15	C-4	15-20	60	60		ND	C-4:		
	S-16	15-16				3.4	S-16: Brown, fine to medium SAND, trace Gravel.		
16	S-17	16-17				3.1	S-17: Brown, fine to medium SAND, trace Gravel.		
17	S-18	17-18				2.5	S-18: Brown, fine to medium SAND, trace Gravel.		SAND
18	S-19	18-19				3.3	S-19: Brown, fine to medium SAND, trace Gravel.		
19	S-20	19-20				3.3	S-20: 0-4": Brown, fine to medium SAND, trace Gravel. 4-12": Brown, fine to coarse SAND, trace Gravel.		
20							End of exploration at 20 feet.		20
21									
22									
23									
24									
25									
26									
27									
28									



Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

REMARKS

Logger Initials:

Ally Suding

Boring No.:

HS-SB-123

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-124 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/12/2018 **Finish Date:** 6/12/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588169.9 **E** 12788518.2 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	55		ND	C-1:		TOPSOIL 0.3	
	S-1	0-1				1.8	S-1: 0-3": Dark brown, TOPSOIL 3-12": Brown, CLAY & SILT, trace fine to medium Sand.			
1	S-2	1-2				1.4	S-2: Brown, CLAY & SILT, trace fine to medium Sand.	1		No Equipment Installed
2	S-3	2-3				2.0	S-3: Brown, CLAY & SILT, trace fine to medium Sand.			
3	S-4	3-4				1.8	S-4: Brown, CLAY & SILT, trace fine to medium Sand.			
4	S-5	4-5				2.1	S-5: 0-7": Brown, CLAY & SILT, trace fine medium Sand. 7-12": No Recovery.			
5	C-2	5-10	60	55		ND	C-2:		CLAY & SILT	
	S-6	5-6				1.1	S-6: 0-5": No Recovery. 5-12": Brown, CLAY & SILT, trace fine to medium Sand,			
6	S-7	6-7			6-7	1.7	trace Organics (Roots). S-7: Brown, CLAY & SILT, trace fine to medium Sand,			
7	S-8	7-8			7-8	0.5	trace Organics (Roots), (color change to brown-gray for 3" at 9"). S-8: Brown, CLAY & SILT, trace fine to medium Sand.			
8	S-9	8-9				1.8	S-9: Brown, CLAY & SILT, trace fine to medium Sand.			
9	S-10	9-10			9-10	1.0	S-10: 0-2": Brown, CLAY & SILT, trace fine to medium Sand. 2-12": Brown, fine to medium SAND, trace Silt.		9.2	
10	C-3	10-15	60	47		ND	C-3:			
	S-11	10-11				NA	S-11: No Recovery.		SAND	
11	S-12	11-12				1.2	S-12: 0-1" No Recovery. 1-8": Brown, fine to medium SAND, trace Silt.		11.7	
12	S-13	12-13				1.5	8-12": Brown, CLAY & SILT, trace fine to medium Sand. S-13: Brown, CLAY & SILT, trace fine to medium Sand.			
13	S-14	13-14				0.5	S-14: 0-9": Brown, CLAY & SILT, trace fine to medium Sand.		CLAY & SILT	
14							9-12": Brown, fine to medium Sand, trace Silt.		13.8	

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.1 ppmv.

Logger Initials:

Allison Hazard

Boring No.:

HS-SB-124

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-124
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/12/2018
Finish Date: 6/12/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588169.9 **E** 12788518.2
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)
	S-15	14-15				1.3	S-15: Light brown, fine to medium SAND, trace Silt.		SAND	
15										
	C-4	15-20	60	39		ND	C-4:		SAND	
	S-16	15-16				NA	S-16: No Recovery.			
16										16
	S-17	16-17				3.6	S-17: 0-9": No Recovery.			
							9-12": Brown, CLAY & SILT, trace fine to medium Sand.		CLAY & SILT	
17										
	S-18	17-18				0.9	S-18: 0-2": Brown, CLAY & SILT, trace fine to medium Sand.			17.2
18							2-12": Light brown, fine to medium SAND, trace Silt.			
	S-19	18-19				1.2	S-19: Light brown, fine to medium SAND, trace Silt.			
									SAND	
19										
	S-20	19-20				1.1	S-20: Light brown, fine to medium SAND, trace Silt.			
20								2		20
							End of exploration at 20 feet.			
21										
22										
23										
24										
25										
26										
27										
28										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Allison Hazard

Boring No.:
HS-SB-124

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-125 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Allison Hazard/Charles Lindner **Drilling Co.:** Stearns Drilling **Foreman:** Tom Ulrich	**Start Date:** 6/13/2018 **Finish Date:** 6/13/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** TBD **E** TBD **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** 10' Southeast **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	50		0.1	C-1:		TOPSOIL	0.2	No Equipment Installed
	S-1	0-1				2.1	S-1: 0-2": Brown, TOPSOIL.		CLAY & SILT		
1	S-2	1-2			1-2	3.5	2-12": Brown, CLAY & SILT, little Gravel, trace fine to medium Sand.	1	SILT & CLAY	1	
2	S-3	2-3				2.3	S-2: 0-10": Brown, SILT & CLAY, trace fine to medium Sand, trace Organics (Roots). 10-12": Brown, CLAY & SILT, trace fine to medium Sand. S-3: Brown, CLAY & SILT, trace fine to medium Sand.		CLAY & SILT	1.8	
3	S-4	3-4				2.1	S-4: 0-11": Brown, CLAY & SILT, trace fine to medium Sand.				
4	S-5	4-5				1.8	11-12": Brown, fine to medium SAND, trace Silt. S-5: 0-2": Brown, fine to medium SAND, trace Silt. 2-12": No Recovery.		SAND	3.9	
5	C-2	5-10	60	60		ND	C-2:		SILT & CLAY	5 5.3	
	S-6	5-6				2.0	S-6: 0-4": Brown, SILT& CLAY, trace fine to medium Sand.				
6	S-7	6-7				1.0	4-12": Brown, CLAY & SILT, trace fine to medium Sand. S-7: Brown, CLAY & SILT, trace fine to medium Sand.		CLAY & SILT		
7	S-8	7-8				2.1	S-8: Brown, CLAY & SILT, trace fine to medium Sand.				
8	S-9	8-9			8-9	1.4	S-9: 0-9": Brown, SILT & CLAY, little fine to coarse Sand. 9-12": Brown, CLAY & SILT, trace fine to medum Sand.		SILT & CLAY	8 8.8	
9	S-10	9-10				1.7	S-10: Brown, CLAY & SILT, trace fine to medium Sand.				
10	C-3	10-15	60	60		ND	C-3:				
	S-11	10-11				0.5	S-11: Brown, CLAY & SILT, trace fine to medium Sand.				
11	S-12	11-12			11-12	1.2	S-12: Brown, CLAY & SILT, trace fine to medium Sand.		CLAY & SILT		
12	S-13	12-13				1.2	S-13: Brown, CLAY & SILT, trace fine to medium Sand.				
13	S-14	13-14				0.9	S-14: Brown, CLAY & SILT, trace fine to medium Sand.				
14											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.1 ppmv.

Logger Initials:

Allison Hazard/Charles Lindner

Boring No.:

HS-SB-125

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-125
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Allison Hazard/Charles Lindner
Drilling Co.: Stearns Drilling
Foreman: Tom Ulrich

Start Date: 6/13/2018
Finish Date: 6/13/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N TBD **E** TBD
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
10' Southeast
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)
	S-15	14-15				0.3	S-15: 0-10": Brown, CLAY & SILT, trace fine to medium Sand.		CLAY & SILT	14.8
15	C-4	15-20	60	55		ND	10-12": Light brown, fine to medium SAND, trace Silt. C-4:		SAND	15
	S-16	15-16				1.8	S-16: 0-5": No Recovery.		SILT & CLAY	15.6
16	S-17	16-17				2.0	5-7": Brown, SILT & CLAY, fine to coarse Sand, trace Gravel. 7-12": Brown, CLAY & SILT. S-17: Brown, CLAY & SILT.		CLAY & SILT	
17	S-18	17-18				1.9	S-18: 0-10": Brown, CLAY & SILT. 10-12": Light brown, fine to medium SAND, trace Silt.			17.8
18	S-19	18-19				1.0	S-19: Light brown, fine to medium SAND, trace Silt.		SAND	
19	S-20	19-20				ND	S-20: Light brown, fine to medium SAND, trace Silt.	2		20
20							End of exploration at 20 feet.			
21										
22										
23										
24										
25										
26										
27										
28										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Allison Hazard/Charles Lindner

Boring No.:
HS-SB-125

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-126 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/13/2018 **Finish Date:** 6/13/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588097 **E** 12788521.6 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	57		ND	C-1:			
	S-1	0-1				0.5	S-1: 0-11": TOPSOIL 11-12": Brown, CLAY & SILT, little fine to medium Sand.		TOPSOIL 0.9	
1	S-2	1-2			1-2	0.5	S-2: Brown, CLAY & SILT, little fine to medium Sand.	1		No Equipment Installed
2	S-3	2-3				0.6	S-3: Brown, CLAY & SILT, little fine to medium Sand.			
3	S-4	3-4			3-4	0.4	S-4: 0-7": Brown, CLAY & SILT, little fine to medium Sand. 7-12": Brown, CLAY & SILT, trace fine Sand.		CLAY & SILT	
4	S-5	4-5				0.7	S-5: 0-9": Brown, CLAY & SILT, trace fine Sand. 9-12": No Recovery.			
5	C-2	5-10	60	48		ND	C-2:			
	S-6	5-6				NA	S-6: No Recovery.			
6	S-7	6-7				0.3	S-7: 0-9": Brown, CLAY & SILT, trace fine Sand. 9-12": Brown, fine to medium SAND, trace Silt.		6.8	
7	S-8	7-8				0.3	S-8: Brown, fine to medium SAND, trace Silt.		SAND	
8	S-9	8-9				0.4	S-9: 0-8": Brown, fine to medium SAND, trace Silt. 8-12": Brown, CLAY & SILT, trace fine Sand.		8.7	
9	S-10	9-10				0.5	S-10: Brown, fine to medium SAND, trace Silt.		CLAY & SILT 9	
10	C-3	10-15	60	48		ND	C-3:			
	S-11	10-11				NA	S-11: No Recovery.		SAND	
11	S-12	11-12			11-12	0.5	S-12: 0-8": Brown, fine to medium SAND, trace Silt. 8-12": Brown, CLAY & SILT, trace fine Sand.		11.7	
12	S-13	12-13				0.2	S-13: 0-8": Brown, CLAY & SILT, trace fine Sand (1" lens of brown, fine to medium SAND, trace Silt at 1"). 8-12": Brown, fine to medium SAND, trace Silt.		CLAY & SILT 12.7	
13	S-14	13-14				0.5	S-14: 0-5": Brown, fine to medium SAND, trace Silt. 5-12": Brown, CLAY & SILT, trace fine Sand.		SAND 13.4	
14									CLAY & SILT	

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.

Logger Initials:

Julie Groenleer

Boring No.:

HS-SB-126

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-126
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Julie Groenleer
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/13/2018
Finish Date: 6/13/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588097 **E** 12788521.6
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)
	S-15	14-15				0.5	S-15: 0-1: Brown, CLAY & SILT, trace fine Sand. 1-12": Brown, fine to medium SAND, trace Silt.			14.1
15	C-4	15-20	60	48		ND	C-4:			
	S-16	15-16				NA	S-16: No Recovery.			
16	S-17	16-17				0.4	S-17: Dark brown, fine to medium SAND, trace Silt.			
17	S-18	17-18				0.5	S-18: Brown, fine to medium SAND, trace Silt.		SAND	
18	S-19	18-19				0.6	S-19: Brown, fine to medium SAND, trace Silt.			
19	S-20	19-20				0.6	S-20: Brown, fine to medium SAND, trace Silt.			
20								2		20
							End of exploration at 20 feet.			
21										
22										
23										
24										
25										
26										
27										
28										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Julie Groenleer

Boring No.:
HS-SB-126

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-127 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/14/2018 **Finish Date:** 6/14/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588096 **E** 12788474.5 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	43		ND	C-1:			
	S-1	0-1			0-1	ND	S-1: TOPSOIL		TOPSOIL	
1	S-2	1-2				0.2	S-2: 0-4": TOPSOIL 4-12": Brown, fine to medium SAND, trace Silt.	1	1.3	No Equipment Installed
2	S-3	2-3			2-3	0.1	S-3: Brown, fine to medium SAND, trace Silt.			
3	S-4	3-4				0.3	S-4: 0-7": Brown, fine to medium SAND, trace Silt. 7-12": No Recovery.		SAND	
4	S-5	4-5				NA	S-5: No Recovery.			
5	C-2	5-10	60	60		ND	C-2:			
	S-6	5-6				0.8	S-6: 0-8": Brown, fine to medium SAND, trace Silt. 8-12": Brown, fine to medium SAND, little Silt.		6	
6	S-7	6-7				0.3	S-7: Brown, CLAY & SILT, little fine to medium Sand.			
7	S-8	7-8				0.3	S-8: Brown, CLAY & SILT, little fine to medium Sand.			
8	S-9	8-9				ND	S-9: Brown, CLAY & SILT, little fine to medium Sand.		CLAY & SILT	
9	S-10	9-10				ND	S-10: Brown, CLAY & SILT, little fine to medium Sand.			
10	C-3	10-15	60	56		ND	C-3:			
	S-11	10-11			10-11	0.4	S-11: 0-4": No Recovery. 4-9": Brown, CLAY & SILT, little fine to medium Sand.		10.8	
11	S-12	11-12				0.7	9-12": Dark brown, fine to medium SAND, little Silt. S-12: 0-2": Dark brown, fine to medium SAND, little Silt.		SAND 11.2	
12	S-13	12-13				0.6	2-12": Brown, CLAY & SILT, trace fine Sand. S-13: Brown, fine to medium SAND, trace Silt.		CLAY & SILT 12	
13	S-14	13-14				0.6	S-14: Brown, fine to medium SAND, trace Silt (3" lens of brown, CLAY & SILT, trace fine Sand at 3-6").		SAND	
14										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.

Logger Initials:

Julie Groenleer

Boring No.:

HS-SB-127

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-127
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Julie Groenleer
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/14/2018
Finish Date: 6/14/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588096 **E** 12788474.5
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)
	S-15	14-15				0.3	S-15: Brown, fine to medium SAND, little Silt.				
15										SAND	
	C-4	15-20	60	53		ND	C-4:				
	S-16	15-16				0.9	S-16: 0-7": No Recovery.				15.6
16							7-11": Brown, CLAY & SILT, trace fine to medium Sand.			CLAY & SILT	15.9
	S-17	16-17				0.9	11-12": Brown, fine to medium SAND, trace Silt.				
							S-17: 0-7': Brown, fine to medium SAND, trace Silt.			SAND	
17							7-12": Brown, fine to medium SAND, little Silt.				
	S-18	17-18				0.4	S-18: 0-5": Brown, fine to medium SAND, trace Silt.				17.4
							5-12: Brown, CLAY & SILT, little fine to medium Sand.			CLAY & SILT	
18											
	S-19	18-19				0.2	S-19: 0-4": Brown, CLAY & SILT, little fine to medium Sand.				18.3
										SAND	18.8
19							4-9": Brown, fine to medium SAND, trace Silt.				
	S-20	19-20				0.2	9-12": Brown, CLAY & SILT, trace fine Sand.			CLAY & SILT	
							S-20: 0-11": Brown, CLAY & SILT, trace fine Sand.	2			19.9
20							11-12": Brown, fine to medium SAND, trace Silt.			SAND	20
							End of exploration at 20 feet.				
21											
22											
23											
24											
25											
26											
27											
28											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Julie Groenleer

Boring No.:
HS-SB-127

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-128 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer/Brian Luhrs **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/13/2018 **Finish Date:** 6/13/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588008.5 **E** 12788497.3 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	44		0.1	C-1:			
	S-1	0-1				0.8	S-1: TOPSOIL		TOPSOIL	
1	S-2	1-2				0.3	S-2: 0-4": TOPSOIL 4-12": Brown, fine to medium SAND, some Clay, trace Silt.	1	1.3	
									SAND 2	
2	S-3	2-3				0.8	S-3: 0-4": Brown, CLAY & SILT, trace fine Sand. 4-12": Brown, fine to medium SAND, some Clay, trace Silt.		CLAY & SILT 2.3	
3	S-4	3-4				0.5	S-4: 0-2": Brown, fine to medium SAND, some Clay, trace Silt.		SAND 3.2	
4	S-5	4-5				NA	2-8": Brown, CLAY & SILT, some fine to medium Sand. 8-12": No Recovery. S-5: No Recovery.			
5	C-2	5-10	60	55		0.1	C-2:		CLAY & SILT	
	S-6	5-6			5-6	0.6	S-6: 0-5": No Recovery 5-12": Brown, CLAY & SILT, trace fine Sand.			
6	S-7	6-7			6-7	0.6	S-7: 0-8": Brown, CLAY & SILT, trace fine Sand. 8-12": Brown, fine to medium SAND, trace Silt.		6.7	
7	S-8	7-8				0.6	S-8: Brown, fine to medium SAND, trace Silt.			Bentonite 0.5-13'
8	S-9	8-9				0.4	S-9: Brown, fine to medium SAND, trace Silt.		SAND	
9	S-10	9-10				0.3	S-10: 0-11": Brown, fine to medium SAND, some Clay, trace Silt.			
10	C-3	10-15	60	60		ND	11-12": Brown, CLAY & SILT, trace fine Sand. C-3:		9.9 CLAY & SILT 10	
	S-11	10-11				0.7	S-11: Brown, fine to medium SAND, little Silt.			
11	S-12	11-12				0.6	S-12: Brown, fine to medium SAND, little Silt.			
12	S-13	12-13				0.7	S-13: Brown, fine to medium SAND, little Silt.		SAND	
13	S-14	13-14				0.8	S-14: Brown, fine to medium SAND, little Silt.			1" PVC Riser 0-15'
14								2	14	

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.1 ppmv.
2. Groundwater was encountered at approximately 14 feet below ground surface.

Logger Initials:

Julie Groenleer/Brian Luhrs

Boring No.:

HS-SB-128

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-128
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Julie Groenleer/Brian Luhrs
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/13/2018
Finish Date: 6/13/2018
Final Depth (ft.): 20

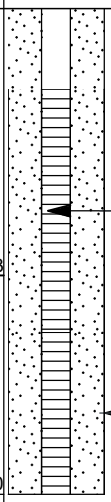
BORING COORDINATES (International Feet):
N 588008.5 **E** 12788497.3
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.):5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) / Stratum Description / Depth (ft.)
	S-15	14-15			14-15	0.5	S-15: Brown, CLAY & SILT, trace fine Sand.		
15									
	C-4	15-20	60	47		ND	C-4:		
	S-16	15-16				NA	S-16: No Recovery.		CLAY & SILT
16									
	S-17	16-17				0.8	S-17: 0-1": No Recovery. 1-12": Brown, CLAY & SILT, trace fine Sand.		
17									
	S-18	17-18				0.8	S-18: 0-3": Brown, CLAY & SILT, trace fine Sand. 3-12": Brown, fine to medium SAND, trace Silt.		17.3
18									
	S-19	18-19				0.3	S-19: Brown, fine to medium SAND, trace Silt.		SAND
19									
	S-20	19-20				0.9	S-20: Brown, fine to medium SAND, trace Silt.		
20									20
							End of exploration at 20 feet.		
21									
22									
23									
24									
25									
26									
27									
28									



Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Julie Groenleer/Brian Luhrs

Boring No.:
HS-SB-128

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-129 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/12/2018 **Finish Date:** 6/12/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588009.1 **E** 12788519.2 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):**5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	54		0.1	C-1:			TOPSOIL	0.4	
	S-1	0-1				1.3	S-1: 0-4": TOPSOIL 4-12": Brown, CLAY & SILT, little fine to medium Sand.					
1	S-2	1-2				0.9	S-2: Brown, CLAY & SILT, little fine to medium Sand.	1				
2	S-3	2-3				1.4	S-3: Brown, CLAY & SILT, little fine to coarse Sand, trace Gravel.			CLAY & SILT		
3	S-4	3-4				0.5	S-4: Brown, CLAY & SILT, little fine to coarse Sand, trace Gravel.					
4	S-5	4-5				0.8	S-5: 0-1": Brown, CLAY & SILT, little fine to coarse Sand, trace Gravel. 1-6": Gray, fine to medium SAND, trace Silt.				4.1	
5	C-2	5-10	60	47		0.7	6-12": No Recovery			SAND	5.3	
	S-6	5-6				NA	C-2: S-6: No Recovery.					
6	S-7	6-7				0.8	S-7: 0-1": No Recovery. 1-12": Brown, CLAY & SILT, little fine to medium Sand.			CLAY & SILT		Bentonite 0.5-12'
7	S-8	7-8			7-8	56.3	S-8: 0-4": Gray, WASTE, trace fine to medium Sand. 4-12": Brown, CLAY & SILT, little fine to medium Sand.			WASTE	7 7.3	
8	S-9	8-9			8-9	1.8	S-9: Brown, CLAY & SILT, little fine to medium Sand.			CLAY & SILT		
9	S-10	9-10				10.2	S-10: 0-5": Brown, CLAY & SILT, little fine to medium Sand. 5-7": Black, WASTE, little fine to medium Sand.			WASTE	9.4 9.6	
10	C-3	10-15	60	60		0.3	7-12": Brown, CLAY & SILT, little fine to medium Sand. C-3:			CLAY & SILT	10.7	
	S-11	10-11			10-11	2.3	S-11: 0-8": Brown,CLAY & SILT, some fine to medium Sand.					
11	S-12	11-12				4.0	8-12": Dark gray, fine to medium SAND, little Silt.					
12	S-13	12-13				2.3	S-12: 0-7": Dark gray, fine to medium SAND, little Silt. 7-12": Brown, fine to medium SAND, little Clay, trace Silt.			SAND		
13	S-14	13-14				2.0	S-13: 0-9": Brown, fine to medium SAND, little Clay, trace Silt. 9-12": Brown, fine to medium SAND, little Silt.					1" PVC Riser 0-15'
14							S-14: Brown, fine to medium SAND, little Silt.					

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.1 ppmv.

Logger Initials:

Julie Groenleer

Boring No.:

HS-SB-129

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-129
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Julie Groenleer
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/12/2018
Finish Date: 6/12/2018
Final Depth (ft.): 20

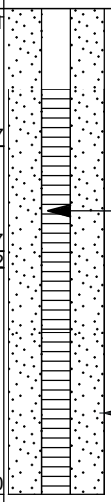
BORING COORDINATES (International Feet):
N 588009.1 **E** 12788519.2
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) / Stratum Description / Depth (ft.)
	S-15	14-15				1.6	S-15: 0-1": Brown, fine to medium SAND, little Silt. 1-12": Brown, CLAY & SILT, trace fine Sand.		14.1 CLAY & SILT
15	C-4	15-20	60	43		ND	C-4:		
	S-16	15-16				NA	S-16: No Recovery.		15.7
16	S-17	16-17				1.2	S-17: 0-5": No Recovery. 5-12": Gray, fine to medium SAND, trace Silt.		SAND
17	S-18	17-18				1.2	S-18: 0-2": Brown, CLAY & SILT, trace fine Sand. 2-12": Brown, fine to medium SAND, trace Silt.		17 CLAY & SILT 17.2
18	S-19	18-19				1.1	S-19: Brown, fine to medium SAND, trace Silt.		SAND
19	S-20	19-20				1.8	S-20: Brown, fine to medium SAND, trace Silt.		
20							End of exploration at 20 feet.		20
21									
22									
23									
24									
25									
26									
27									
28									



Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Julie Groenleer

Boring No.:
HS-SB-129

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-130 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer/Brian Luhrs **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/13/2018 **Finish Date:** 6/13/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588048.4 **E** 12788497.3 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	48		ND	C-1:		TOPSOIL	0.3	No Equipment Installed
	S-1	0-1			0-1	0.7	S-1: 0-4": TOPSOIL				
1	S-2	1-2				0.8	4-12": Dark brown, fine to medium SAND, little Silt, trace Organics (Roots). S-2: Dark brown, fine to medium SAND, little Silt.	1	SAND		
2	S-3	2-3				1.1	S-3: Dark brown grading to brown, fine to medium SAND, little Silt.				
3	S-4	3-4				0.4	S-4: 0-2": Dark brown grading to brown, fine to medium SAND, little Silt. 2-12": Brown, CLAY & SILT, little fine to medium Sand.			3.2	
4	S-5	4-5				NA	S-5: No Recovery.		CLAY & SILT		
5	C-2	5-10	60	49		ND	C-2:			5	
	S-6	5-6				1.1	S-6: 0-11": No Recovery. 11-12": Brown, fine to medium SAND, little Silt.		SAND	6	
6	S-7	6-7			6-7	1.0	S-7: Brown, CLAY & SILT, little fine to medium Sand.		CLAY & SILT		
7	S-8	7-8				0.6	S-8: 0-2": Brown, CLAY & SILT, little fine to medium Sand. 2-12": Brown, fine to medium SAND, trace Silt.			7.2	
8	S-9	8-9				0.4	S-9: 0-9": Brown, fine to medium SAND, trace Silt. 9-12": Brown, CLAY & SILT, some fine to medium Sand.		SAND	8.8	
9	S-10	9-10				0.6	S-10: Brown, fine to medium SAND, little Silt.		CLAY & SILT	9	
10	C-3	10-15	60	60		ND	C-3:				
	S-11	10-11				1.6	S-11: Brown, fine to medium SAND, little Silt.		SAND		
11	S-12	11-12				0.7	S-12: 0-7": Brown, fine to medium SAND, little Silt. 7-12": Brown, CLAY & SILT, trace fine Sand.			11.6	
12	S-13	12-13			12-13	0.5	S-13: Brown, CLAY & SILT, trace fine Sand.		CLAY & SILT		
13	S-14	13-14				0.5	S-14: 0-7": Brown, CLAY & SILT, trace fine Sand. 7-12": Brown, fine to medium SAND, trace Silt.			13.6	
14									SAND		

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.

Logger Initials:

Julie Groenleer/Brian Luhrs

Boring No.:

HS-SB-130

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-130
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Julie Groenleer/Brian Luhrs
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/13/2018
Finish Date: 6/13/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588048.4 **E** 12788497.3
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)
	S-15	14-15				0.3	S-15: Brown, fine to medium SAND, trace Silt.			
15									SAND	
	C-4	15-20	60	54		-	C-4:			
	S-16	15-16				0.4	S-16: 0-6": No Recovery.			15.5
16							6-11": Brown, CLAY & SILT, trace fine Sand.		CLAY & SILT	15.9
	S-17	16-17				0.7	11-12": Brown, fine to medium SAND, little Silt.			
							S-17: Brown, fine to medium SAND, little Silt.			
17										
	S-18	17-18				0.4	S-18: Brown, fine to medium SAND, little Silt.			
18									SAND	
	S-19	18-19				0.4	S-19: Brown, fine to medium SAND, little Silt.			
19										
	S-20	19-20				0.7	S-20: 0-5": Brown, fine to medium SAND, little Silt.			
							5-12": Brown, fine to coarse SAND, little Silt.	2		
20										20
							End of exploration at 20 feet.			
21										
22										
23										
24										
25										
26										
27										
28										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Julie Groenleer/Brian Luhrs

Boring No.:
HS-SB-130

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-131 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/14/2018 **Finish Date:** 6/14/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588538.2 **E** 12787914.1 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):**5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.)	Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	55		ND	C-1:			TOPSOIL	0.5	
	S-1	0-1				1.3	S-1: 0-6": TOPSOIL 6-12": Brown, CLAY & SILT, little fine to medium Sand.					
1	S-2	1-2				0.3	S-2: Brown, CLAY & SILT, little fine to medium Sand.	1				
2	S-3	2-3				0.4	S-3: Brown, CLAY & SILT, little fine to medium Sand.					
3	S-4	3-4			3-4	0.2	S-4: Brown, CLAY & SILT, little fine to medium Sand.					
4	S-5	4-5				0.4	S-5: 0-7": Brown, CLAY & SILT, little fine to medium Sand. 7-12": No Recovery.					
5	C-2	5-10	60	58		ND	C-2:					
	S-6	5-6				ND	S-6: 0-2": No Recovery. 2-12": Brown, CLAY & SILT, little fine to medium Sand.					
6	S-7	6-7				0.3	S-7: Brown, CLAY & SILT, little fine to medium Sand.					
7	S-8	7-8			7-8	0.2	S-8: Brown, CLAY & SILT, trace fine to coarse Sand.			CLAY & SILT		Bentonite 1-13'
8	S-9	8-9				0.5	S-9: Brown, CLAY & SILT, trace fine to coarse Sand.					
9	S-10	9-10				0.8	S-10: Brown, CLAY & SILT, trace fine to coarse Sand.					
10	C-3	10-15	60	33		ND	C-3:					
	S-11	10-11				NA	S-11: No Recovery.					
11	S-12	11-12				NA	S-12: No Recovery.					
12	S-13	12-13				0.5	S-13: 0-3": No Recovery. 3-12": Brown, CLAY & SILT, trace fine to medium Sand.					
13	S-14	13-14				ND	S-14: 0-6": Brown, CLAY & SILT, trace fine to medium Sand.				13.5	1" PVC Riser 0-15'
14							6-9": Brown, fine to medium SAND, trace Silt.			SAND	13.8	

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.

Logger Initials:

Julie Groenleer

Boring No.:

HS-SB-131

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-131
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Julie Groenleer
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/14/2018
Finish Date: 6/14/2018
Final Depth (ft.): 20

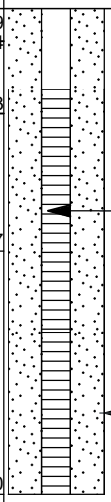
BORING COORDINATES (International Feet):
N 588538.2 **E** 12787914.1
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) / Stratum Description / Depth (ft.)
	S-15	14-15				ND	9-11": ROCK FRAGMENTS		ROCK FRAGMENTS 13.9
							11-12": Brown, fine to medium SAND, trace Silt.		SAND 14.4
15							S-15: 0-5": Brown, fine to medium SAND, trace Silt.		CLAY & SILT
	C-4	15-20	60	57		ND	5-12": Brown, CLAY & SILT, little fine to medium Sand.		15.3
	S-16	15-16				ND	C-4:		
16							S-16: 0-3": No Recovery.		
	S-17	16-17				ND	3-12": Brown, fine to medium SAND, trace Silt.		SAND
							S-17: Brown, fine to medium SAND, trace Silt.		
17									17
	S-18	17-18				ND	S-18: Brown, CLAY & SILT, trace fine Sand.		
18									
	S-19	18-19			18-19	ND	S-19: Brown, CLAY & SILT, trace fine Sand.		CLAY & SILT
19									
	S-20	19-20				ND	S-20: Brown, CLAY & SILT, trace fine Sand.		
20									20
							End of exploration at 20 feet.		
21									
22									
23									
24									
25									
26									
27									
28									



Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Julie Groenleer

Boring No.:
HS-SB-131

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-132 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/15/2018 **Finish Date:** 6/15/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588500.4 **E** 12787947.7 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Stratum Description	Elev. (ft.) / Depth (ft.)	Equipment Installed
	C-1	0-5	60	48		0.1	C-1:		TOPSOIL	0.3	
	S-1	0-1				0.7	S-1: 0-4": TOPSOIL				
1							4-12": Brown, CLAY & SILT, little fine to medium Sand,				
	S-2	1-2				0.8	trace Organics (Roots).	1			
							S-2: Brown, CLAY & SILT, little fine to medium Sand.				
2											
	S-3	2-3				0.6	S-3: Brown, CLAY & SILT, little fine to medium Sand (1" lens of ROCK FRAGMENT at 4-5").				
3											
	S-4	3-4				1.0	S-4: Brown, CLAY & SILT, little fine to medium Sand.		CLAY & SILT		
4											
	S-5	4-5				NA	S-5: No Recovery.				
5											
	C-2	5-10	60	51		0.3	C-2:				
	S-6	5-6				0.5	S-6: 0-9": No Recovery.				
6							9-12": Brown, CLAY & SILT, little fine to medium Sand.				
	S-7	6-7			6-7	11.8	S-7: 0-7": Brown, CLAY & SILT, little fine to medium Sand.	2			
							7-9": Brown, fine to medium SAND, trace Silt.			6.6	
7							9-12": Black, WASTE, trace fine Sand.		SAND	6.8	Bentonite 1 - 13'
	S-8	7-8				31.4	S-8: 0-4": Black, WASTE, trace fine Sand.		WASTE	7.3	
							4-12": Brown, CLAY & SILT, trace fine to medium Sand.		CLAY & SILT		
8										8.1	
	S-9	8-9			8-9	24.0	S-9: 0-1": Brown, CLAY & SILT, trace fine to medium Sand.		WASTE	8.4	
9							1-5": Black, WASTE, trace fine Sand.				
	S-10	9-10				1.2	5-12": Brown, CLAY & SILT, trace fine Sand.	2			
							S-10: Brown, CLAY & SILT, trace fine Sand.		CLAY & SILT		
10											
	C-3	10-15	60	45		ND	C-3:				
	S-11	10-11				NA	S-11: No Recovery.			10.7	
11											
	S-12	11-12			11-12	1.4	S-12: 0-3": No Recovery.				
							3-12": Brown, fine to medium SAND, trace Silt.				
12											
	S-13	12-13				0.8	S-13: Brown, fine to medium SAND, trace Silt.		SAND		
13											
	S-14	13-14				0.9	S-14: 0-7": Brown, fine to medium SAND, trace Silt.				
							7-12": Brown, fine to medium SAND, little Clay, trace Silt				
14							(1" lens of ROCK FRAGMENTS at 6-7").				

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.1 ppmv.
2. Petroleum odor noted in sample.

Logger Initials:

Julie Groenleer

Boring No.:

HS-SB-132

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-132
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Julie Groenleer
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/15/2018
Finish Date: 6/15/2018
Final Depth (ft.): 20

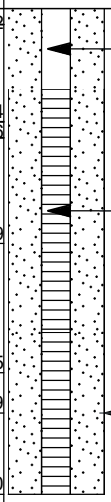
BORING COORDINATES (International Feet):
N 588500.4 **E** 12787947.7
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) / Stratum Description / Depth (ft.)
	S-15	14-15				0.8	S-15: 0-2": Brown, fine to medium SAND, little Clay, trace Silt.		14.2
15							2-12": Brown, CLAY & SILT, trace fine to medium Sand.		CLAY & SILT
	C-4	15-20	60	55		ND	C-4:		15.4
	S-16	15-16				2.7	S-16: 0-5": No Recovery.		15.6 SAND
16							5-7": Brown, fine to medium SAND, trace Silt.		
	S-17	16-17				0.7	7-12": Brown, CLAY & SILT, trace fine to medium Sand.		CLAY & SILT
17							S-17: 0-11: Brown, CLAY & SILT, trace fine to medium Sand.		16.9
	S-18	17-18				0.7	11-12": Brown, fine to coarse SAND, little Silt.		
18							S-18: 0-2": Brown, fine to coarse SAND, little Silt.		SAND
	S-19	18-19				0.9	2-12": Brown, fine to medium SAND, little Silt.		
							S-19: 0-6": Brown, fine to medium SAND, little Silt.		18.5
19							6-12": Brown, CLAY & SILT, little fine to medium Sand.		CLAY & SILT 19
	S-20	19-20				1.0	S-20: Brown, fine to medium SAND, little Silt.		SAND
20									20
21							End of exploration at 20 feet.		
22									
23									
24									
25									
26									
27									
28									



Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

Logger Initials:
Julie Groenleer

Boring No.:
HS-SB-132

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-133 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/15/2018 **Finish Date:** 6/15/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588423.9 **E** 12787928.4 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):**5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	56		0.1	C-1:		TOPSOIL	0.3	
	S-1	0-1				0.8	S-1: 0-3": TOPSOIL 3-12": Brown, CLAY & SILT, little fine to medium Sand.				
1	S-2	1-2				0.7	S-2: Brown, CLAY & SILT, little fine to medium Sand.	1			No Equipment Installed
2	S-3	2-3				0.9	S-3: Brown, CLAY & SILT, little fine to medium Sand.				
3	S-4	3-4				0.7	S-4: Brown, CLAY & SILT, little fine to medium Sand.				
4	S-5	4-5			4-5	0.5	S-5: 0-8": Brown, CLAY & SILT, little fine to medium Sand. 8-12": No Recovery.				
5	C-2	5-10	60	60		0.1	C-2:				
	S-6	5-6				1.0	S-6: Brown, CLAY & SILT, trace fine to medium Sand.				
6	S-7	6-7			6-7	0.8	S-7: Brown, CLAY & SILT, trace fine to medium Sand.				
7	S-8	7-8				0.9	S-8: Brown, CLAY & SILT, trace fine to medium Sand.		CLAY & SILT		
8	S-9	8-9				1.0	S-9: Brown, CLAY & SILT, trace fine to medium Sand.				
9	S-10	9-10				0.5	S-10: Brown, CLAY & SILT, trace fine to medium Sand.				
10	C-3	10-15	60	60		0.1	C-3:				
	S-11	10-11			10-11	0.7	S-11: Brown, CLAY & SILT, trace fine to medium Sand.				
11	S-12	11-12				0.6	S-12: Brown, CLAY & SILT, trace fine to medium Sand.				
12	S-13	12-13				0.5	S-13: Brown, CLAY & SILT, trace fine to medium Sand.				
13	S-14	13-14				0.6	S-14: 0-8": Brown, CLAY & SILT, trace fine to medium Sand.			13.7	
14							8-12": Brown, fine to coarse SAND, trace Silt, trace			14	

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was measured at 0.1 ppmv.

Logger Initials:

Julie Groenleer

Boring No.:

HS-SB-133

GEOPROBE LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide
House Street
Rockford, Michigan

EXPLORATION NO.: HS-SB-133
SHEET: 2 of 2
PROJECT NO: 16.0062335.52
REVIEWED BY: SB/NC

Logged By: Julie Groenleer
Drilling Co.: Stearns Drilling
Foreman: Roger Christensen

Start Date: 6/15/2018
Finish Date: 6/15/2018
Final Depth (ft.): 20

BORING COORDINATES (International Feet):
N 588423.9 **E** 12787928.4
H. Datum: MI State Plane S Zone NAD83

Type of Rig: Geoprobe
Rig Model: 7822 DT
Drilling Method: Direct Push

Sampler Type: Macro Core
Sampler O.D. (in.): 2.25" O.D.
Sampler Length (in.): 5.0'

Offset of Boring From Original Location:
NA
Ground Elevation: **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) / Stratum Description / Depth (ft.)
	S-15	14-15				0.6	Gravel.		SAND
							S-15: Brown, fine to coarse SAND, trace Silt, trace Gravel.		SAND
15									
	C-4	15-20	60	60		0.2	C-4:		15.2
	S-16	15-16				0.6	S-16: 0-2": Brown, fine to coarse SAND, trace Silt, trace Gravel.		
16									
	S-17	16-17				0.5	2-12": Brown, CLAY & SILT, trace fine Sand.		
							S-17: Brown, CLAY & SILT, trace fine Sand.		
17									
	S-18	17-18				0.6	S-18: Brown, CLAY & SILT, trace fine Sand.		
									CLAY & SILT
18									
	S-19	18-19				0.3	S-19: Brown, CLAY & SILT, trace fine Sand.		
19									
	S-20	19-20				0.3	S-20: Brown, CLAY & SILT, trace fine Sand.		
20								2	20
							End of exploration at 20 feet.		
21									
22									
23									
24									
25									
26									
27									
28									

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:
A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:
Julie Groenleer

Boring No.:
HS-SB-133

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-134 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/18/2018 **Finish Date:** 6/18/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588363.6 **E** 12787910.1 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):**5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description Depth (ft.)	Equipment Installed
	C-1	0-5	60	44		ND	C-1:		TOPSOIL 0.3	
	S-1	0-1				2.4	S-1: 0-4": TOPSOIL 4-12": Brown, CLAY & SILT, trace fine to medium Sand.			
1	S-2	1-2				0.6	S-2: 0-6": Brown, CLAY & SILT, trace fine to medium Sand.	1	CLAY & SILT 1.5	No Equipment Installed
2	S-3	2-3				1.2	6-12": Dark brown, fine to medium SAND, little Silt, trace Gravel. S-3: 0-3": Dark brown, fine to medium SAND, little Silt, trace Gravel.		SAND 2.3	
3	S-4	3-4				0.6	3-12": Brown, CLAY & SILT, little fine to medium Sand. S-4: 0-8": Brown, CLAY & SILT, little fine to medium Sand.			
4	S-5	4-5				NA	8-12": No Recovery. S-5: No Recovery.			
5	C-2	5-10	60	53		ND	C-2:			
	S-6	5-6				1.0	S-6: 0-7": No Recovery. 7-12": Brown, CLAY & SILT, little fine to medium Sand.			
6	S-7	6-7				0.4	S-7: Brown, CLAY & SILT, little fine to medium Sand.			
7	S-8	7-8			7-8	1.0	S-8: Brown, CLAY & SILT, little fine to medium Sand.			
8	S-9	8-9				0.5	S-9: Brown, CLAY & SILT, little fine to medium Sand.		CLAY & SILT	
9	S-10	9-10				0.5	S-10: Brown, CLAY & SILT, little fine to medium Sand.			
10	C-3	10-15	60	60		ND	C-3:			
	S-11	10-11				0.5	S-11: Brown, CLAY & SILT, little fine to medium Sand.			
11	S-12	11-12				0.4	S-12: Brown, CLAY & SILT, little fine to medium Sand, trace Gravel.			
12	S-13	12-13				0.3	S-13: Brown, CLAY & SILT, trace fine to medium Sand.			
13	S-14	13-14				0.5	S-14: Brown, CLAY & SILT, trace fine to medium Sand (1" lens of Brown, fine to medium SAND, trace Silt at 10-11").			
14										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.

Logger Initials:

Julie Groenleer

Boring No.:

HS-SB-134

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-134 **SHEET:** 2 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/18/2018 **Finish Date:** 6/18/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588363.6 **E** 12787910.1 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):**5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)
	S-15	14-15			14-15	0.8	S-15: Brown, CLAY & SILT, trace fine to medium Sand.			
15									CLAY & SILT	
	C-4	15-20	60	58		ND	C-4:			
	S-16	15-16			15-16	0.4	S-16: 0-2": No Recovery.			15.6
16							2-7": Brown, CLAY & SILT, trace fine to medium Sand.		ROCK FRAGMENT	15.8
	S-17	16-17				0.6	7-10": Gray, ROCK FRAGMENTS.			
							10-12": Dark brown, CLAY & SILT, trace fine to medium Sand.			
17	S-18	17-18				1.2	S-17: Dark brown, CLAY & SILT, trace fine to medium Sand.		CLAY & SILT	
18	S-19	18-19				1.2	S-18: 0-2": Dark brown, CLAY & SILT, trace fine to medium Sand.			18.2
							2-12": Brown, CLAY & SILT, little fine to medium Sand.		SAND	
19	S-20	19-20				1.0	S-19: 0-2": Brown, CLAY & SILT, little fine to medium Sand.			19.5
20							2-12": Brown, fine to coarse SAND, trace Gravel, trace Silt.	2	CLAY & SILT	20
21							S-20: 0-3": Brown, fine to coarse SAND, trace Gravel, trace Silt. 3-6":Brown, fine to medium SAND, little Silt. 6-12": Brown, CLAY & SILT, trace fine Sand.			
22							End of exploration at 20 feet.			
23										
24										
25										
26										
27										
28										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Julie Groenleer

Boring No.:

HS-SB-134

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-135 **SHEET:** 1 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/18/2018 **Finish Date:** 6/18/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588318.9 **E** 12787942.6 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)	Equipment Installed
	C-1	0-5	60	57		ND	C-1:		TOPSOIL	0.5	No Equipment Installed
	S-1	0-1				4.4	S-1: 0-6": TOPSOIL 6-12": Brown, CLAY & SILT, little fine to medium Sand.				
1	S-2	1-2				0.9	S-2: Brown, CLAY & SILT, little fine to medium Sand.	1			
2	S-3	2-3				1.2	S-3: Brown, CLAY & SILT, little fine to medium Sand.				
3	S-4	3-4				1.0	S-4: Brown, CLAY & SILT, little fine to medium Sand.		CLAY & SILT		
4	S-5	4-5				0.9	S-5: 0-9": Brown, CLAY & SILT, little fine to medium Sand. 9-12": No Recovery.				
5	C-2	5-10	60	56		0.5	C-2:				
	S-6	5-6				0.9	S-6: 0-4": No Recovery. 4-12": Brown, CLAY & SILT, little fine to medium Sand.				
6	S-7	6-7				34.4	S-7: 0-8": Brown, CLAY & SILT, little fine to medium Sand. 8-12": Dark gray, WASTE. trace fine Sand.			6.7	
7	S-8	7-8			7-8	130.8	S-8: 0-6": Dark gray, WASTE. trace fine Sand. 6-12": Dark brown, CLAY & SILT, trace fine to medium Sand.		WASTE	7.5	
8	S-9	8-9			8-9	2.1	S-9: Dark brown, CLAY & SILT, trace fine to medium Sand.				
9	S-10	9-10				0.2	S-10: 0-3": Dark brown, CLAY & SILT, trace fine to medium Sand. 3-12": Brown, CLAY & SILT, little fine to medium Sand.		CLAY & SILT		
10	C-3	10-15	60	48		ND	C-3:				
	S-11	10-11				NA	S-11: No Recovery.				
11	S-12	11-12				1.3	S-12: 0-2": Brown, CLAY & SILT, little fine to medium Sand. 2-5": Brown, fine to medium SAND, little Silt.			11.2	
12	S-13	12-13			12-13	1.4	5-12": Brown, fine to coarse SAND, trace Silt. S-13: 0-4": Brown, fine to coarse SAND, trace Silt.		SAND	12.7	
13	S-14	13-14				1.0	4-8": Brown, fine to medium SAND, trace Silt. 8-12": Brown, CLAY & SILT, trace fine to medium Sand. S-14: Brown, CLAY & SILT, trace fine Sand.		CLAY & SILT		
14											

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

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 represents <0.1 ppmv. Background was ND.

Logger Initials:

Julie Groenleer

Boring No.:

HS-SB-135

GEOPROBE LOG

GZA GeoEnvironmental, Inc. *Engineers and Scientists*	**Wolverine World Wide** **House Street** **Rockford, Michigan**	**EXPLORATION NO.:** HS-SB-135 **SHEET:** 2 of 2 **PROJECT NO:** 16.0062335.52 **REVIEWED BY:** SB/NC

Logged By: Julie Groenleer **Drilling Co.:** Stearns Drilling **Foreman:** Roger Christensen	**Start Date:** 6/18/2018 **Finish Date:** 6/18/2018 **Final Depth (ft.):** 20	**BORING COORDINATES (International Feet):** **N** 588318.9 **E** 12787942.6 **H. Datum:** MI State Plane S Zone NAD83
Type of Rig: Geoprobe **Rig Model:** 7822 DT **Drilling Method:** Direct Push	**Sampler Type:** Macro Core **Sampler O.D. (in.):** 2.25" O.D. **Sampler Length (in.):** 5.0'	**Offset of Boring From Original Location:** NA **Ground Elevation:** **V. Datum:**

Depth (ft)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Submitted To Lab	PID (ppm)	Sample Description & Configuration Modified Burmister	Remark	Elev. (ft.) Stratum Description	Depth (ft.)
	S-15	14-15				1.5	S-15: Brown, CLAY & SILT, trace fine Sand.			
15	C-4	15-20	60	37		0.1	C-4:		CLAY & SILT	
	S-16	15-16				NA	S-16: No Recovery.			
16										16
	S-17	16-17				1.2	S-17: 0-11": No Recovery. 11-12": Brown, fine to medium SAND, little Silt.		SAND	
17	S-18	17-18				1.3	S-18: 0-5": Brown, fine to medium SAND, little Silt. 5-12": Brown, CLAY & SILT, trace fine to medium Sand.			17.4
18	S-19	18-19				1.2	S-19: 0-9": Brown, CLAY & SILT, trace fine to medium Sand.		CLAY & SILT	
19	S-20	19-20				0.8	9-12": Brown, fine to coarse SAND, trace Gravel, trace Silt. S-20: 0-1": Brown, fine to coarse SAND, trace Gravel, trace Silt.	2	SAND CLAY & SILT ROCK FRAGMENT	18.8 19 19.3 19.4 19.5
20							1-4": Brown, CLAY & SILT, trace fine Sand. 4-5": ROCK FRAGMENTS. 5-6": Brown, CLAY & SILT, trace fine Sand. 6-12": Brown, fine to coarse SAND, trace Silt.		CLAY & SILT SAND	20
21										
22							End of exploration at 20 feet.			
23										
24										
25										
26										
27										
28										

Granular Soils Blows/FT Density	Cohesive Soils Blows/FT Consistency	Plasticity SM Thread Diameter Rolled	
0-4 -- Very Loose	<2 -- Very Soft	None	SILT
4-10 -- Loose	2-4 -- Soft	1/4"	Clayey SILT
10-30 -- Medium Dense	4-8 -- M. Stiff	1/8"	SILT & CLAY
30-50 -- Dense	8-15 -- Stiff	1/16"	CLAY & SILT
>50 -- Very Dense	15-30 -- V. Stiff	1/32"	Silty CLAY
	>30 -- Hard	1/64"	CLAY

MISSDIG Ticket Number:

A81571365

REMARKS

2. Groundwater was not encountered during drilling or upon completion.

Logger Initials:

Julie Groenleer

Boring No.:

HS-SB-135

Attachment B – Tables 1, 2, and 3

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-017	HS-SB-017	HS-SB-021	HS-SB-021	HS-SB-023	HS-SB-023	HS-SB-023
Sample Name		HS-SB-017 (9-10)	HS-SB-017 (13-14)	HS-SB-021 (9-10)	HS-SB-021 (11-12)	HS-SB-023 (9-10)	HS-SB-023 (12-13)	HS-SB-023 (12-13) DUP
Sample Depth Interval (feet)		9 - 10	13 - 14	9 - 10	11 - 12	9 - 10	12 - 13	12 - 13
Sample Date		6/22/2018	6/22/2018	6/22/2018	6/22/2018	6/22/2018	6/22/2018	6/22/2018
Parameter (ug/kg)								
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<9.6	<9.6	<9.6	<11	<9.2	<9	<10
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<9.6	<9.6	<9.6	<11	<9.2	<9	<10
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	<1.9	<1.9	<1.9	<2.1	<1.8	<1.8	<2
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<1.9	<1.9	<1.9	<2.1	<1.8	<1.8	<2
Perfluoro-1-butanesulfonate (PFBS)	NA	<4.8	<4.8	<4.8	<5.3	<4.6	<4.5	<5.1
Perfluorobutanoic Acid	NA	<4.8	<4.8	<4.8	<5.3	<4.6	<4.5	<5.1
Perfluorodecanoic acid (PFDA)	NA	<4.8	<4.8	<4.8	<5.3	<4.6	<4.5	<5.1
Perfluorododecanoic acid (PFDoA)	NA	<4.8	<4.8	<4.8	<5.3	<4.6	<4.5	<5.1
Perfluoro-1-heptanesulfonate (PFHpS)	NA	<4.8	<4.8	<4.8	<5.3	<4.6	<4.5	<5.1
Perfluoroheptanoic acid (PFHpA)	NA	<4.8	<4.8	<4.8	<5.3	<4.6	<4.5	<5.1
Perfluorohexanesulfonate (PFHxS)	NA	<4.8	<4.8	<4.8	<5.3	<4.6	<4.5	<5.1
Perfluorohexanoic acid (PFHxA)	NA	<4.8	<4.8	<4.8	<5.3	<4.6	<4.5	<5.1
Perfluoro-n-nonanoic acid (PFNA)	NA	<4.8	<4.8	<4.8	<5.3	<4.6	<4.5	<5.1
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<4.8	<4.8	<4.8	<5.3	<4.6	<4.5	<5.1
Perfluorooctanesulfonate (PFOS)	0.24	<4.8	<4.8	<4.8	***5.8 [H]***	<4.6	<4.5	<5.1
Perfluoro-n-octanoic acid (PFOA)	10,000	<4.8	<4.8	<4.8	<5.3	<4.6	<4.5	<5.1
Perfluoro-n-pentanoic acid (PFPeA)	NA	<4.8	<4.8	<4.8	<5.3	<4.6	<4.5	<5.1
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<4.8	<4.8	<4.8	<5.3	<4.6	<4.5	<5.1
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<4.8	<4.8	<4.8	<5.3	<4.6	<4.5	<5.1
Perfluoro-n-undecanoic acid (PFUdA)	NA	<4.8	<4.8	<4.8	<5.3	<4.6	<4.5	<5.1
Perfluoro-1-decanesulfonate (PFDS)	NA	<4.8	<4.8	<4.8	<5.3	<4.6	<4.5	<5.1
Perfluoro-1-nonanesulfonate (PFNS)	NA	<4.8	<4.8	<4.8	<5.3	<4.6	<4.5	<5.1
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<4.8	<4.8	<4.8	<5.3	<4.6	<4.5	<5.1

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-024	HS-SB-024	HS-SB-101	HS-SB-101	HS-SB-101	HS-SB-101	HS-SB-102
Sample Name		HS-SB-024 (9-10)	HS-SB-024 (12-13)	HS-SB-101 (5-6)	HS-SB-101 (8-9)	HS-SB-101 (8-9) DUP	HS-SB-101 (12-13)	HS-SB-102 (7-8)
Sample Depth Interval (feet)		9 - 10	12 - 13	5 - 6	8 - 9	8 - 9	12 - 13	7 - 8
Sample Date		6/22/2018	6/22/2018	6/15/2018	6/15/2018	6/15/2018	6/15/2018	6/15/2018
Parameter (ug/kg)								
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<9	<9.9	<62	<11	<11	<10	<2,100
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<9	<9.9	<62	<210	<11	<10	<2,100
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	<1.8	<2	**190**	**130**	**24**	<2.1	**10,000**
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<1.8	<2	<12	<2.1	<2.2	<2.1	<420
Perfluoro-1-butanesulfonate (PFBS)	NA	<4.5	<5	<31	<5.4	<5.5	<5.1	<1,000
Perfluorobutanoic Acid	NA	<4.5	<5	<31	<5.4	<5.5	<5.1	<1,000
Perfluorodecanoic acid (PFDA)	NA	<4.5	<5	<31	<5.4	<5.5	<5.1	<1,000
Perfluorododecanoic acid (PFDoA)	NA	<4.5	<5	<31	<5.4	<5.5	<5.1	<1,000
Perfluoro-1-heptanesulfonate (PFHpS)	NA	**5.2 [H]**	<5	<31	<5.4	<5.5	<5.1	<1,000
Perfluoroheptanoic acid (PFHpA)	NA	<4.5	<5	<31	<5.4	<5.5	<5.1	<1,000
Perfluorohexanesulfonate (PFHxS)	NA	<4.5	**31**	<31	<5.4	<5.5	<5.1	<1,000
Perfluorohexanoic acid (PFHxA)	NA	<4.5	<5	<31	<5.4	<5.5	<5.1	<1,000
Perfluoro-n-nonanoic acid (PFNA)	NA	<4.5	<5	<31	<5.4	<5.5	<5.1	<1,000
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<4.5	<5	<31	**6.7**	<5.5	<5.1	<1,000
Perfluorooctanesulfonate (PFOS)	0.24	***6.4 [H]***	<5	***3,200***	***1,500***	***330***	<5.1	***89,000***
Perfluoro-n-octanoic acid (PFOA)	10,000	**5.6 [H]**	**77**	<31	**19**	<5.5	<5.1	<1,000
Perfluoro-n-pentanoic acid (PFPeA)	NA	<4.5	<5	<31	<5.4	<5.5	<5.1	<1,000
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<4.5	<5	<31	<5.4	<5.5	<5.1	<1,000
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<4.5	<5	<31	<5.4	<5.5	<5.1	<1,000
Perfluoro-n-undecanoic acid (PFUdA)	NA	<4.5	<5	<31	<5.4	<5.5	<5.1	<1,000
Perfluoro-1-decanesulfonate (PFDS)	NA	<4.5	<5	**41**	**14**	<5.5	<5.1	<1,000
Perfluoro-1-nonanesulfonate (PFNS)	NA	<4.5	<5	**39**	**12**	<5.5	<5.1	<1,000
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<4.5	<5	<31	<5.4	<5.5	<5.1	<1,000

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-102	HS-SB-102	HS-SB-103	HS-SB-103	HS-SB-103	HS-SB-104	HS-SB-104
Sample Name		HS-SB-102 (11-12)	HS-SB-102 (14-15)	HS-SB-103 (7-8)	HS-SB-103 (12-13)	HS-SB-103 (15-16)	HS-SB-104 (5-6)	HS-SB-104 (7-8)
Sample Depth Interval (feet)		11 - 12	14 - 15	7 - 8	12 - 13	15 - 16	5 - 6	7 - 8
Sample Date		6/15/2018	6/15/2018	6/18/2018	6/18/2018	6/18/2018	6/18/2018	6/18/2018
Parameter (ug/kg)								
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<300	<11	<1,300	<9	<9.4	<11	<11
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<300	<11	<1,300	<9	<9.4	<11	<11
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	**3,200**	**4.8**	**12,000**	**51**	**8.7**	<2.3	<2.1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<61	<2.2	<260	<1.8	<1.9	<2.3	<2.1
Perfluoro-1-butanesulfonate (PFBS)	NA	<150	<5.4	<640	<4.5	<4.7	<5.7	<5.3
Perfluorobutanoic Acid	NA	<150	<5.4	<640	<4.5	<4.7	<5.7	<5.3
Perfluorodecanoic acid (PFDA)	NA	<150	<5.4	<640	<4.5	<4.7	<5.7	<5.3
Perfluorododecanoic acid (PFDoA)	NA	<150	<5.4	<640	<4.5	<4.7	<5.7	<5.3
Perfluoro-1-heptanesulfonate (PFHpS)	NA	<150	<5.4	<640	<4.5	<4.7	<5.7	<5.3
Perfluoroheptanoic acid (PFHpA)	NA	<150	<5.4	<640	<4.5	<4.7	<5.7	<5.3
Perfluorohexanesulfonate (PFHxS)	NA	<150	<5.4	<640	**4.7**	<4.7	<5.7	<5.3
Perfluorohexanoic acid (PFHxA)	NA	<150	<5.4	<640	<4.5	<4.7	<5.7	<5.3
Perfluoro-n-nonanoic acid (PFNA)	NA	<150	<5.4	<640	<4.5	<4.7	<5.7	<5.3
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<150	<5.4	<640	<4.5	<4.7	<5.7	<5.3
Perfluorooctanesulfonate (PFOS)	0.24	***20,000***	***46***	***63,000***	***330***	***140***	<5.7	<5.3
Perfluoro-n-octanoic acid (PFOA)	10,000	<150	<5.4	<640	**6.5**	**4.7**	<5.7	<5.3
Perfluoro-n-pentanoic acid (PFPeA)	NA	<150	<5.4	<640	<4.5	<4.7	<5.7	<5.3
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<150	<5.4	<640	<4.5	<4.7	<5.7	<5.3
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<150	<5.4	<640	<4.5	<4.7	<5.7	<5.3
Perfluoro-n-undecanoic acid (PFUdA)	NA	<150	<5.4	<640	<4.5	<4.7	<5.7	<5.3
Perfluoro-1-decanesulfonate (PFDS)	NA	**210**	<5.4	**850**	<4.5	<4.7	<5.7	<5.3
Perfluoro-1-nonanesulfonate (PFNS)	NA	**180**	<5.4	**870**	<4.5	<4.7	<5.7	<5.3
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<150	<5.4	<640	<4.5	<4.7	<5.7	<5.3

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-104	HS-SB-114	HS-SB-114	HS-SB-114	HS-SB-117	HS-SB-117	HS-SB-117
Sample Name		HS-SB-104 (12-13)	HS-SB-114 (0-1)	HS-SB-114 (2-3)	HS-SB-114 (6-7)	HS-SB-117 (1-2)	HS-SB-117 (7-8)	HS-SB-117 (12-13)
Sample Depth Interval (feet)		12 - 13	0 - 1	2 - 3	6 - 7	1 - 2	7 - 8	12 - 13
Sample Date		6/18/2018	6/22/2018	6/22/2018	6/22/2018	6/14/2018	6/14/2018	6/14/2018
Parameter (ug/kg)								
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<9.2	<9.8	<9.4	<11	<11	<9.8	<10
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<9.2	<9.8	<9.4	<11	<11	<9.8	<10
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	<1.8	<2	<1.9	<2.2	<2.1	<2	<2
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<1.8	<2	<1.9	<2.2	<2.1	<2	<2
Perfluoro-1-butanesulfonate (PFBS)	NA	<4.6	<4.9	<4.7	<5.6	<5.3	<4.9	<5.1
Perfluorobutanoic Acid	NA	<4.6	<4.9	<4.7	<5.6	<5.3	<4.9	<5.1
Perfluorodecanoic acid (PFDA)	NA	<4.6	<4.9	<4.7	<5.6	<5.3	<4.9	<5.1
Perfluorododecanoic acid (PFDoA)	NA	<4.6	<4.9	<4.7	<5.6	<5.3	<4.9	<5.1
Perfluoro-1-heptanesulfonate (PFHpS)	NA	<4.6	<4.9	<4.7	<5.6	<5.3	<4.9	<5.1
Perfluoroheptanoic acid (PFHpA)	NA	<4.6	<4.9	<4.7	<5.6	<5.3	<4.9	<5.1
Perfluorohexanesulfonate (PFHxS)	NA	<4.6	<4.9	<4.7	<5.6	<5.3	<4.9	<5.1
Perfluorohexanoic acid (PFHxA)	NA	<4.6	<4.9	<4.7	<5.6	<5.3	<4.9	<5.1
Perfluoro-n-nonanoic acid (PFNA)	NA	<4.6	<4.9	<4.7	<5.6	<5.3	<4.9	<5.1
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<4.6	<4.9	<4.7	<5.6	<5.3	<4.9	<5.1
Perfluorooctanesulfonate (PFOS)	0.24	***220***	***5.1***	***30***	***34***	***7.4***	<4.9	<5.1
Perfluoro-n-octanoic acid (PFOA)	10,000	<4.6	<4.9	<4.7	<5.6	<5.3	<4.9	<5.1
Perfluoro-n-pentanoic acid (PFPeA)	NA	<4.6	<4.9	<4.7	<5.6	<5.3	<4.9	<5.1
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<4.6	<4.9	<4.7	<5.6	<5.3	<4.9	<5.1
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<4.6	<4.9	<4.7	<5.6	<5.3	<4.9	<5.1
Perfluoro-n-undecanoic acid (PFUdA)	NA	<4.6	<4.9	<4.7	<5.6	<5.3	<4.9	<5.1
Perfluoro-1-decanesulfonate (PFDS)	NA	<4.6	<4.9	<4.7	<5.6	<5.3	<4.9	<5.1
Perfluoro-1-nonanesulfonate (PFNS)	NA	<4.6	<4.9	<4.7	<5.6	<5.3	<4.9	<5.1
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<4.6	<4.9	<4.7	<5.6	<5.3	<4.9	<5.1

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-118	HS-SB-118	HS-SB-118	HS-SB-120	HS-SB-120	HS-SB-120	HS-SB-122
Sample Name		HS-SB-118 (7-8)	HS-SB-118 (12-13)	HS-SB-118 (13-14)	HS-SB-120 (3-4)	HS-SB-120 (6-7)	HS-SB-120 (8-9)	HS-SB-122 (7-8)
Sample Depth Interval (feet)		7 - 8	12 - 13	13 - 14	3 - 4	6 - 7	8 - 9	7 - 8
Sample Date		6/14/2018	6/14/2018	6/14/2018	6/14/2018	6/14/2018	6/14/2018	6/13/2018
Parameter (ug/kg)								
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<11	<11	<11	<10	<9.9	<11	<11
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<11	<11	<11	<10	<9.9	<11	<11
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	<2.2	<2.2	<2.1	<2	<2	<2.3	<2.3
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<2.2	<2.2	<2.1	<2	<2	<2.3	<2.3
Perfluoro-1-butanesulfonate (PFBS)	NA	<5.5	<5.4	<5.3	<5	<4.9	<5.7	<5.7
Perfluorobutanoic Acid	NA	<5.5	<5.4	<5.3	<5	<4.9	<5.7	<5.7
Perfluorodecanoic acid (PFDA)	NA	<5.5	<5.4	<5.3	<5	<4.9	<5.7	<5.7
Perfluorododecanoic acid (PFDoA)	NA	<5.5	<5.4	<5.3	<5	<4.9	<5.7	<5.7
Perfluoro-1-heptanesulfonate (PFHpS)	NA	<5.5	<5.4	<5.3	<5	<4.9	<5.7	<5.7
Perfluoroheptanoic acid (PFHpA)	NA	<5.5	<5.4	<5.3	<5	<4.9	<5.7	<5.7
Perfluorohexanesulfonate (PFHxS)	NA	<5.5	<5.4	<5.3	<5	<4.9	<5.7	<5.7
Perfluorohexanoic acid (PFHxA)	NA	<5.5	<5.4	<5.3	<5	<4.9	<5.7	<5.7
Perfluoro-n-nonanoic acid (PFNA)	NA	<5.5	<5.4	<5.3	<5	<4.9	<5.7	<5.7
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<5.5	<5.4	<5.3	<5	<4.9	<5.7	<5.7
Perfluorooctanesulfonate (PFOS)	0.24	<5.5	<5.4	<5.3	***5.9***	<4.9	<5.7	<5.7
Perfluoro-n-octanoic acid (PFOA)	10,000	<5.5	<5.4	<5.3	<5	<4.9	<5.7	<5.7
Perfluoro-n-pentanoic acid (PFPeA)	NA	<5.5	<5.4	<5.3	<5	<4.9	<5.7	<5.7
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<5.5	<5.4	<5.3	<5	<4.9	<5.7	<5.7
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<5.5	<5.4	<5.3	<5	<4.9	<5.7	<5.7
Perfluoro-n-undecanoic acid (PFUdA)	NA	<5.5	<5.4	<5.3	<5	<4.9	<5.7	<5.7
Perfluoro-1-decanesulfonate (PFDS)	NA	<5.5	<5.4	<5.3	<5	<4.9	<5.7	<5.7
Perfluoro-1-nonanesulfonate (PFNS)	NA	<5.5	<5.4	<5.3	<5	<4.9	<5.7	<5.7
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<5.5	<5.4	<5.3	<5	<4.9	<5.7	<5.7

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-122	HS-SB-122	HS-SB-123	HS-SB-123	HS-SB-123	HS-SB-124	HS-SB-124
Sample Name		HS-SB-122 (14-15)	HS-SB-122 (16-17)	HS-SB-123 (6-7)	HB-SB-123 (7-8)	HS-SB-123 (12-13)	HS-SB-124 (6-7)	HS-SB-124 (6-7) DUP
Sample Depth Interval (feet)		14 - 15	16 - 17	6 - 7	7 - 8	12 - 13	6 - 7	6 - 7
Sample Date		6/13/2018	6/13/2018	6/12/2018	6/12/2018	6/12/2018	6/12/2018	6/12/2018
Parameter (ug/kg)								
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<13	<9.8	<11	<12	<12	<12	<12
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<13	<9.8	<11	<12	<12	<12	<12
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	<2.5	<2	<2.1	<2.3	<2.3	<2.4	<2.3
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<2.5	<2	<2.1	<2.3	<2.3	<2.4	<2.3
Perfluoro-1-butanesulfonate (PFBS)	NA	<6.4	<4.9	<5.3	<5.8	<5.8	<6.1	<5.8
Perfluorobutanoic Acid	NA	<6.4	<4.9	<5.3	<5.8	<5.8	<6.1	<5.8
Perfluorodecanoic acid (PFDA)	NA	<6.4	<4.9	<5.3	<5.8	<5.8	<6.1	<5.8
Perfluorododecanoic acid (PFDoA)	NA	<6.4	<4.9	<5.3	<5.8	<5.8	<6.1	<5.8
Perfluoro-1-heptanesulfonate (PFHpS)	NA	<6.4	<4.9	<5.3	<5.8	<5.8	<6.1	<5.8
Perfluoroheptanoic acid (PFHpA)	NA	<6.4	<4.9	<5.3	<5.8	<5.8	<6.1	<5.8
Perfluorohexanesulfonate (PFHxS)	NA	<6.4	<4.9	<5.3	<5.8	<5.8	<6.1	<5.8
Perfluorohexanoic acid (PFHxA)	NA	<6.4	<4.9	<5.3	<5.8	<5.8	<6.1	<5.8
Perfluoro-n-nonanoic acid (PFNA)	NA	<6.4	<4.9	<5.3	<5.8	<5.8	<6.1	<5.8
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<6.4	<4.9	<5.3	<5.8	<5.8	<6.1	<5.8
Perfluorooctanesulfonate (PFOS)	0.24	<6.4	***5.2***	<5.3	<5.8	<5.8	***180***	***53***
Perfluoro-n-octanoic acid (PFOA)	10,000	<6.4	<4.9	<5.3	<5.8	<5.8	<6.1	<5.8
Perfluoro-n-pentanoic acid (PFPeA)	NA	<6.4	<4.9	<5.3	<5.8	<5.8	<6.1	<5.8
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<6.4	<4.9	<5.3	<5.8	<5.8	<6.1	<5.8
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<6.4	<4.9	<5.3	<5.8	<5.8	<6.1	<5.8
Perfluoro-n-undecanoic acid (PFUdA)	NA	<6.4	<4.9	<5.3	<5.8	<5.8	<6.1	<5.8
Perfluoro-1-decanesulfonate (PFDS)	NA	<6.4	<4.9	<5.3	<5.8	<5.8	<6.1	<5.8
Perfluoro-1-nonanesulfonate (PFNS)	NA	<6.4	<4.9	<5.3	<5.8	<5.8	<6.1	<5.8
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<6.4	<4.9	<5.3	<5.8	<5.8	<6.1	<5.8

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-124	HS-SB-124	HS-SB-125	HS-SB-125	HS-SB-125	HS-SB-125	HS-SB-126
Sample Name		HS-SB-124 (7-8)	HS-SB-124 (9-10)	HB-SB-125 (1-2)	HB-SB-125 (1-2) DUP	HB-SB-125 (8-9)	HB-SB-125 (11-12)	HS-SB-126 (1-2)
Sample Depth Interval (feet)		7 - 8	9 - 10	1 - 2	1 - 2	8 - 9	11 - 12	1 - 2
Sample Date		6/12/2018	6/12/2018	6/13/2018	6/13/2018	6/13/2018	6/13/2018	6/13/2018
Parameter (ug/kg)								
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<10	<11	<11	<11	<12	<13	<10
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<10	<11	<11	<11	<12	<13	<10
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	<2	<2.3	<2.3	<2.1	<2.4	<2.5	<2.1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<2	<2.3	<2.3	<2.1	<2.4	<2.5	<2.1
Perfluoro-1-butanesulfonate (PFBS)	NA	<5.1	<5.7	<5.7	<5.3	<6	<6.3	<5.2
Perfluorobutanoic Acid	NA	<5.1	<5.7	<5.7	<5.3	<6	<6.3	<5.2
Perfluorodecanoic acid (PFDA)	NA	<5.1	<5.7	<5.7	<5.3	<6	<6.3	<5.2
Perfluorododecanoic acid (PFDoA)	NA	<5.1	<5.7	<5.7	<5.3	<6	<6.3	<5.2
Perfluoro-1-heptanesulfonate (PFHpS)	NA	<5.1	<5.7	<5.7	<5.3	<6	<6.3	<5.2
Perfluoroheptanoic acid (PFHpA)	NA	<5.1	<5.7	<5.7	<5.3	<6	<6.3	<5.2
Perfluorohexanesulfonate (PFHxS)	NA	<5.1	<5.7	<5.7	<5.3	<6	<6.3	<5.2
Perfluorohexanoic acid (PFHxA)	NA	<5.1	<5.7	<5.7	<5.3	<6	<6.3	<5.2
Perfluoro-n-nonanoic acid (PFNA)	NA	<5.1	<5.7	<5.7	<5.3	<6	<6.3	<5.2
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<5.1	<5.7	<5.7	<5.3	<6	<6.3	**15**
Perfluorooctanesulfonate (PFOS)	0.24	110 S	***190***	***7.8***	***32***	<6	<6.3	***35***
Perfluoro-n-octanoic acid (PFOA)	10,000	<5.1	<5.7	<5.7	<5.3	<6	<6.3	<5.2
Perfluoro-n-pentanoic acid (PFPeA)	NA	<5.1	<5.7	<5.7	<5.3	<6	<6.3	<5.2
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<5.1	<5.7	<5.7	<5.3	<6	<6.3	<5.2
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<5.1	<5.7	<5.7	<5.3	<6	<6.3	<5.2
Perfluoro-n-undecanoic acid (PFUdA)	NA	<5.1	<5.7	<5.7	<5.3	<6	<6.3	<5.2
Perfluoro-1-decanesulfonate (PFDS)	NA	<5.1	<5.7	<5.7	<5.3	<6	<6.3	<5.2
Perfluoro-1-nonanesulfonate (PFNS)	NA	<5.1	<5.7	<5.7	<5.3	<6	<6.3	<5.2
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<5.1	<5.7	<5.7	<5.3	<6	<6.3	<5.2

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-126	HS-SB-126	HS-SB-127	HS-SB-127	HS-SB-127	HS-SB-128	HS-SB-128
Sample Name		HS-SB-126 (3-4)	HS-SB-126 (11-12)	HS-SB-127 (0-1)	HS-SB-127 (2-3)	HS-SB-127 (10-11)	HB-SB-128 (5-6)	HB-SB-128 (6-7)
Sample Depth Interval (feet)		3 - 4	11 - 12	0 - 1	2 - 3	10 - 11	5 - 6	6 - 7
Sample Date		6/13/2018	6/13/2018	6/14/2018	6/14/2018	6/14/2018	6/13/2018	6/13/2018
Parameter (ug/kg)								
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<12	<12	<9.4	<11	<12	<9.5	<9.9
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<12	<12	<9.4	<11	<12	<9.5	<9.9
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	<2.4	<2.4	<1.9	<2.1	<2.3	<1.9	<2
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<2.4	<2.4	<1.9	<2.1	<2.3	<1.9	<2
Perfluoro-1-butanesulfonate (PFBS)	NA	<6	<6.1	<4.7	<5.3	<5.8	<4.7	<5
Perfluorobutanoic Acid	NA	<6	<6.1	<4.7	<5.3	<5.8	<4.7	<5
Perfluorodecanoic acid (PFDA)	NA	<6	<6.1	<4.7	<5.3	<5.8	<4.7	<5
Perfluorododecanoic acid (PFDoA)	NA	<6	<6.1	<4.7	<5.3	<5.8	<4.7	<5
Perfluoro-1-heptanesulfonate (PFHpS)	NA	<6	<6.1	<4.7	<5.3	<5.8	<4.7	<5
Perfluoroheptanoic acid (PFHpA)	NA	<6	<6.1	<4.7	<5.3	<5.8	<4.7	<5
Perfluorohexanesulfonate (PFHxS)	NA	<6	<6.1	<4.7	<5.3	<5.8	<4.7	<5
Perfluorohexanoic acid (PFHxA)	NA	<6	<6.1	<4.7	<5.3	<5.8	<4.7	<5
Perfluoro-n-nonanoic acid (PFNA)	NA	<6	<6.1	<4.7	<5.3	<5.8	<4.7	<5
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<6	<6.1	**20**	**86**	<5.8	<4.7	<5
Perfluorooctanesulfonate (PFOS)	0.24	***17***	***11***	***77***	***260***	***28***	***29***	***24***
Perfluoro-n-octanoic acid (PFOA)	10,000	<6	<6.1	<4.7	**14**	<5.8	<4.7	<5
Perfluoro-n-pentanoic acid (PFPeA)	NA	<6	<6.1	<4.7	<5.3	<5.8	<4.7	<5
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<6	<6.1	<4.7	<5.3	<5.8	<4.7	<5
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<6	<6.1	<4.7	<5.3	<5.8	<4.7	<5
Perfluoro-n-undecanoic acid (PFUdA)	NA	<6	<6.1	<4.7	<5.3	<5.8	<4.7	<5
Perfluoro-1-decanesulfonate (PFDS)	NA	<6	<6.1	<4.7	<5.3	<5.8	<4.7	<5
Perfluoro-1-nonanesulfonate (PFNS)	NA	<6	<6.1	<4.7	<5.3	<5.8	<4.7	<5
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<6	<6.1	<4.7	<5.3	<5.8	<4.7	<5

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-128	HS-SB-129	HS-SB-129	HS-SB-129	HS-SB-130	HS-SB-130	HS-SB-130
Sample Name		HB-SB-128 (14-15)	HS-SB-129 (7-8)	HS-SB-129 (8-9)	HS-SB-129 (10-11)	HS-SB-130 (0-1)	HS-SB-130 (6-7)	HS-SB-130 (12-13)
Sample Depth Interval (feet)		14 - 15	7 - 8	8 - 9	10 - 11	0 - 1	6 - 7	12 - 13
Sample Date		6/13/2018	6/12/2018	6/12/2018	6/12/2018	6/13/2018	6/13/2018	6/13/2018
Parameter (ug/kg)								
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<11	<12	<11	<10	<10	<11	<12
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<11	<12	<11	<10	<10	<11	<12
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	<2.2	<2.3	**18**	<2.1	<2.1	<2.3	<2.4
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<2.2	<2.3	<2.3	<2.1	<2.1	<2.3	<2.4
Perfluoro-1-butanesulfonate (PFBS)	NA	<5.5	<5.8	<5.7	<5.2	<5.1	<5.7	<6.1
Perfluorobutanoic Acid	NA	<5.5	<5.8	<5.7	<5.2	<5.1	<5.7	<6.1
Perfluorodecanoic acid (PFDA)	NA	<5.5	<5.8	<5.7	<5.2	<5.1	<5.7	<6.1
Perfluorododecanoic acid (PFDoA)	NA	<5.5	<5.8	<5.7	<5.2	<5.1	<5.7	<6.1
Perfluoro-1-heptanesulfonate (PFHpS)	NA	<5.5	<5.8	<5.7	<5.2	<5.1	<5.7	<6.1
Perfluoroheptanoic acid (PFHpA)	NA	<5.5	<5.8	<5.7	<5.2	<5.1	<5.7	<6.1
Perfluorohexanesulfonate (PFHxS)	NA	<5.5	<5.8	<5.7	<5.2	<5.1	<5.7	<6.1
Perfluorohexanoic acid (PFHxA)	NA	<5.5	<5.8	<5.7	<5.2	<5.1	<5.7	<6.1
Perfluoro-n-nonanoic acid (PFNA)	NA	<5.5	<5.8	<5.7	<5.2	<5.1	<5.7	<6.1
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<5.5	<5.8	<5.7	<5.2	<5.1	<5.7	<6.1
Perfluorooctanesulfonate (PFOS)	0.24	***7.3***	***98***	***350***	***140***	***37***	***110***	<6.1
Perfluoro-n-octanoic acid (PFOA)	10,000	<5.5	<5.8	**9.1**	<5.2	<5.1	<5.7	<6.1
Perfluoro-n-pentanoic acid (PFPeA)	NA	<5.5	<5.8	<5.7	<5.2	<5.1	<5.7	<6.1
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<5.5	<5.8	<5.7	<5.2	<5.1	<5.7	<6.1
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<5.5	<5.8	<5.7	<5.2	<5.1	<5.7	<6.1
Perfluoro-n-undecanoic acid (PFUdA)	NA	<5.5	<5.8	<5.7	<5.2	<5.1	<5.7	<6.1
Perfluoro-1-decanesulfonate (PFDS)	NA	<5.5	<5.8	<5.7	<5.2	<5.1	<5.7	<6.1
Perfluoro-1-nonanesulfonate (PFNS)	NA	<5.5	<5.8	<5.7	<5.2	<5.1	<5.7	<6.1
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<5.5	<5.8	<5.7	<5.2	<5.1	<5.7	<6.1

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-131	HS-SB-131	HS-SB-131	HS-SB-132	HS-SB-132	HS-SB-132	HS-SB-133
Sample Name		HS-SB-131 (3-4)	HS-SB-131 (7-8)	HS-SB-131 (18-19)	HS-SB-132 (6-7)	HS-SB-132 (8-9)	HS-SB-132 (11-12)	HS-SB-133 (4-5)
Sample Depth Interval (feet)		3 - 4	7 - 8	18 - 19	6 - 7	8 - 9	11 - 12	4 - 5
Sample Date		6/14/2018	6/14/2018	6/14/2018	6/15/2018	6/15/2018	6/15/2018	6/15/2018
Parameter (ug/kg)								
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<11	<9.8	<13	<750	<230	<9.9	<11
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<11	<9.8	<13	<750	<230	<9.9	<11
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	<2.2	<2	<2.6	**910**	**280**	<2	<2.1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<2.2	<2	<2.6	<150	<46	<2	<2.1
Perfluoro-1-butanesulfonate (PFBS)	NA	<5.5	<4.9	<6.6	<370	<110	<4.9	<5.3
Perfluorobutanoic Acid	NA	<5.5	<4.9	<6.6	<370	<110	<4.9	<5.3
Perfluorodecanoic acid (PFDA)	NA	<5.5	<4.9	<6.6	<370	<110	<4.9	<5.3
Perfluorododecanoic acid (PFDoA)	NA	<5.5	<4.9	<6.6	<370	<110	<4.9	<5.3
Perfluoro-1-heptanesulfonate (PFHpS)	NA	<5.5	<4.9	<6.6	<370	<110	**5.1**	<5.3
Perfluoroheptanoic acid (PFHpA)	NA	<5.5	<4.9	<6.6	<370	<110	<4.9	<5.3
Perfluorohexanesulfonate (PFHxS)	NA	<5.5	<4.9	<6.6	<370	<110	<4.9	<5.3
Perfluorohexanoic acid (PFHxA)	NA	<5.5	<4.9	<6.6	<370	<110	<4.9	<5.3
Perfluoro-n-nonanoic acid (PFNA)	NA	<5.5	<4.9	<6.6	<370	<110	<4.9	<5.3
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<5.5	<4.9	<6.6	<370	<110	<4.9	<5.3
Perfluorooctanesulfonate (PFOS)	0.24	<5.5	<4.9	<6.6	***51,000***	***17,000***	***460***	<5.3
Perfluoro-n-octanoic acid (PFOA)	10,000	<5.5	<4.9	<6.6	<370	<110	**6.5**	<5.3
Perfluoro-n-pentanoic acid (PFPeA)	NA	<5.5	<4.9	<6.6	<370	<110	<4.9	<5.3
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<5.5	<4.9	<6.6	<370	<110	<4.9	<5.3
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<5.5	<4.9	<6.6	<370	<110	<4.9	<5.3
Perfluoro-n-undecanoic acid (PFUdA)	NA	<5.5	<4.9	<6.6	<370	<110	<4.9	<5.3
Perfluoro-1-decanesulfonate (PFDS)	NA	<5.5	<4.9	<6.6	<370	<110	<4.9	<5.3
Perfluoro-1-nonanesulfonate (PFNS)	NA	<5.5	<4.9	<6.6	<370	<110	<4.9	<5.3
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<5.5	<4.9	<6.6	<370	<110	<4.9	<5.3

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-133	HS-SB-133	HS-SB-134	HS-SB-134	HS-SB-134	HS-SB-135	HS-SB-135
Sample Name		HS-SB-133 (6-7)	HS-SB-133 (10-11)	HS-SB-134 (7-8)	HS-SB-134 (14-15)	HS-SB-134 (15-16)	HS-SB-135 (7-8)	HS-SB-135 (8-9)
Sample Depth Interval (feet)		6 - 7	10 - 11	7 - 8	14 - 15	15 - 16	7 - 8	8 - 9
Sample Date		6/15/2018	6/15/2018	6/18/2018	6/18/2018	6/18/2018	6/18/2018	6/18/2018
Parameter (ug/kg)								
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<10	<11	<11	<11	<10	<10	<9.3
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<10	<11	<11	<11	<10	<10	<9.3
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	<2.1	<2.3	<2.3	<2.3	<2	**8.3**	<1.9
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<2.1	<2.3	<2.3	<2.3	<2	<2	<1.9
Perfluoro-1-butanesulfonate (PFBS)	NA	<5.2	<5.7	<5.7	<5.7	<5	<5.1	<4.6
Perfluorobutanoic Acid	NA	<5.2	<5.7	<5.7	<5.7	<5	<5.1	<4.6
Perfluorodecanoic acid (PFDA)	NA	<5.2	<5.7	<5.7	<5.7	<5	<5.1	<4.6
Perfluorododecanoic acid (PFDoA)	NA	<5.2	<5.7	<5.7	<5.7	<5	<5.1	<4.6
Perfluoro-1-heptanesulfonate (PFHpS)	NA	<5.2	<5.7	<5.7	<5.7	<5	<5.1	<4.6
Perfluoroheptanoic acid (PFHpA)	NA	<5.2	<5.7	<5.7	<5.7	<5	<5.1	<4.6
Perfluorohexanesulfonate (PFHxS)	NA	<5.2	<5.7	<5.7	<5.7	<5	<5.1	<4.6
Perfluorohexanoic acid (PFHxA)	NA	<5.2	<5.7	<5.7	<5.7	<5	<5.1	<4.6
Perfluoro-n-nonanoic acid (PFNA)	NA	<5.2	<5.7	<5.7	<5.7	<5	<5.1	<4.6
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<5.2	<5.7	<5.7	<5.7	<5	<5.1	<4.6
Perfluorooctanesulfonate (PFOS)	0.24	<5.2	<5.7	<5.7	<5.7	<5	***260***	***140***
Perfluoro-n-octanoic acid (PFOA)	10,000	<5.2	<5.7	<5.7	<5.7	<5	<5.1	<4.6
Perfluoro-n-pentanoic acid (PFPeA)	NA	<5.2	<5.7	<5.7	<5.7	<5	<5.1	<4.6
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<5.2	<5.7	<5.7	<5.7	<5	<5.1	<4.6
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<5.2	<5.7	<5.7	<5.7	<5	<5.1	<4.6
Perfluoro-n-undecanoic acid (PFUdA)	NA	<5.2	<5.7	<5.7	<5.7	<5	<5.1	<4.6
Perfluoro-1-decanesulfonate (PFDS)	NA	<5.2	<5.7	<5.7	<5.7	<5	<5.1	<4.6
Perfluoro-1-nonanesulfonate (PFNS)	NA	<5.2	<5.7	<5.7	<5.7	<5	<5.1	<4.6
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<5.2	<5.7	<5.7	<5.7	<5	<5.1	<4.6

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-135	HS-SB-201	HS-SB-201	HS-SB-202	HS-SB-202	HS-SB-202	HS-SB-203
Sample Name		HS-SB-135 (12-13)	HS-SB-201 (2-4)	HS-SB-201 (10-12)	HS-SB-202 (6-8)	HS-SB-202 (8-10)	HS-SB-202 (8-10) DUP	HS-SB-203 (8-10)
Sample Depth Interval (feet)		12 - 13	2 - 4	10 - 12	6 - 8	8 - 10	8 - 10	8 - 10
Sample Date		6/18/2018	6/7/2018	6/7/2018	6/5/2018	6/5/2018	6/5/2018	6/4/2018
Parameter (ug/kg)								
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<10	<12	<10	<12	<9	<10	<11
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<10	<12	<10	<12	<9	<10	<11
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	<2	<2.4	<2	<2.4	<1.8	<2.1	<2.3
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<2	<2.4	<2	<2.4	<1.8	<2.1	<2.3
Perfluoro-1-butanesulfonate (PFBS)	NA	<5	<5.9	<5.1	<5.9	<4.5	<5.2	<5.7
Perfluorobutanoic Acid	NA	<5	<5.9	<5.1	<5.9	<4.5	<5.2	<5.7
Perfluorodecanoic acid (PFDA)	NA	<5	<5.9	<5.1	<5.9	<4.5	<5.2	<5.7
Perfluorododecanoic acid (PFDoA)	NA	<5	<5.9	<5.1	<5.9	<4.5	<5.2	<5.7
Perfluoro-1-heptanesulfonate (PFHpS)	NA	<5	<5.9	<5.1	<5.9	<4.5	<5.2	<5.7
Perfluoroheptanoic acid (PFHpA)	NA	<5	<5.9	<5.1	<5.9	<4.5	<5.2	<5.7
Perfluorohexanesulfonate (PFHxS)	NA	<5	<5.9	<5.1	<5.9	<4.5	<5.2	<5.7
Perfluorohexanoic acid (PFHxA)	NA	<5	<5.9	<5.1	<5.9	<4.5	<5.2	<5.7
Perfluoro-n-nonanoic acid (PFNA)	NA	<5	<5.9	<5.1	<5.9	<4.5	<5.2	<5.7
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<5	<5.9	<5.1	<5.9	<4.5	<5.2	<5.7
Perfluorooctanesulfonate (PFOS)	0.24	***230***	<5.9	<5.1	<5.9	***220***	***230***	***8.7***
Perfluoro-n-octanoic acid (PFOA)	10,000	<5	<5.9	<5.1	<5.9	<4.5	<5.2	<5.7
Perfluoro-n-pentanoic acid (PFPeA)	NA	<5	<5.9	<5.1	<5.9	<4.5	<5.2	<5.7
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<5	<5.9	<5.1	<5.9	<4.5	<5.2	<5.7
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<5	<5.9	<5.1	<5.9	<4.5	<5.2	<5.7
Perfluoro-n-undecanoic acid (PFUdA)	NA	<5	<5.9	<5.1	<5.9	<4.5	<5.2	<5.7
Perfluoro-1-decanesulfonate (PFDS)	NA	<5	<5.9	<5.1	<5.9	<4.5	<5.2	<5.7
Perfluoro-1-nonanesulfonate (PFNS)	NA	<5	<5.9	<5.1	<5.9	<4.5	<5.2	<5.7
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<5	<5.9	<5.1	<5.9	<4.5	<5.2	<5.7

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-203	HS-SB-204	HS-SB-204	HS-SB-205	HS-SB-205	HS-SB-206	HS-SB-206
Sample Name		HS-SB-203 (16-18)	HS-SB-204 (4-6)	HS-SB-204 (10-12)	HS-SB-205 (10-12)	HS-SB-205 (18-20)	HS-SB-206 (10-12)	HS-SB-206 (14-16)
Sample Depth Interval (feet)		16 - 18	4 - 6	10 - 12	10 - 12	18 - 20	10 - 12	14 - 16
Sample Date		6/4/2018	6/6/2018	6/6/2018	6/1/2018	6/1/2018	6/4/2018	6/4/2018
Parameter (ug/kg)								
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<10	<11	<10	<9.8	<9.8	<11	<12
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<10	<11	<10	<9.8	<9.8	<11	<12
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	<2	<2.2	<2.1	<2	<2	<2.3	<2.5
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<2	<2.2	<2.1	<2	<2	<2.3	<2.5
Perfluoro-1-butanesulfonate (PFBS)	NA	<5	<5.5	<5.2	<4.9	<4.9	<5.6	<6.1
Perfluorobutanoic Acid	NA	<5	<5.5	<5.2	<4.9	<4.9	<5.6	<6.1
Perfluorodecanoic acid (PFDA)	NA	<5	<5.5	<5.2	<4.9	<4.9	<5.6	<6.1
Perfluorododecanoic acid (PFDoA)	NA	<5	<5.5	<5.2	<4.9	<4.9	<5.6	<6.1
Perfluoro-1-heptanesulfonate (PFHpS)	NA	<5	<5.5	<5.2	<4.9	<4.9	<5.6	<6.1
Perfluoroheptanoic acid (PFHpA)	NA	<5	<5.5	<5.2	<4.9	<4.9	<5.6	<6.1
Perfluorohexanesulfonate (PFHxS)	NA	<5	<5.5	<5.2	<4.9	<4.9	<5.6	<6.1
Perfluorohexanoic acid (PFHxA)	NA	<5	<5.5	<5.2	<4.9	<4.9	<5.6	<6.1
Perfluoro-n-nonanoic acid (PFNA)	NA	<5	<5.5	<5.2	<4.9	<4.9	<5.6	<6.1
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<5	<5.5	<5.2	<4.9	<4.9	<5.6	<6.1
Perfluorooctanesulfonate (PFOS)	0.24	<5	<5.5	<5.2	<4.9	***7.7***	<5.6	<6.1
Perfluoro-n-octanoic acid (PFOA)	10,000	<5	<5.5	<5.2	<4.9	<4.9	<5.6	<6.1
Perfluoro-n-pentanoic acid (PFPeA)	NA	<5	<5.5	<5.2	<4.9	<4.9	<5.6	<6.1
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<5	<5.5	<5.2	<4.9	<4.9	<5.6	<6.1
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<5	<5.5	<5.2	<4.9	<4.9	<5.6	<6.1
Perfluoro-n-undecanoic acid (PFUdA)	NA	<5	<5.5	<5.2	<4.9	<4.9	<5.6	<6.1
Perfluoro-1-decanesulfonate (PFDS)	NA	<5	<5.5	<5.2	<4.9	<4.9	<5.6	<6.1
Perfluoro-1-nonanesulfonate (PFNS)	NA	<5	<5.5	<5.2	<4.9	<4.9	<5.6	<6.1
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<5	<5.5	<5.2	<4.9	<4.9	<5.6	<6.1

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-207	HS-SB-207	HS-SB-208	HS-SB-208	HS-SB-209	HS-SB-210	HS-SB-210
Sample Name		HS-SB-207 (2-4)	HS-SB-207 (8-10)	HS-SB-208 (0-2)	HS-SB-208 (8-10)	HS-SB-209 (4-6)	HS-SB-210 (4-6)	HS-SB-210 (8-10)
Sample Depth Interval (feet)		2 - 4	8 - 10	0 - 2	8 - 10	4 - 6	4 - 6	8 - 10
Sample Date		6/4/2018	6/4/2018	6/7/2018	6/7/2018	6/5/2018	6/1/2018	6/1/2018
Parameter (ug/kg)								
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<12	<10	<11	<11	<12	<11	<12
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<12	<10	<11	<11	<12	<11	<12
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	<2.3	<2	**2.3**	<2.2	<2.4	<2.2	<2.3
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<2.3	<2	<2.1	<2.2	<2.4	<2.2	<2.3
Perfluoro-1-butanesulfonate (PFBS)	NA	<5.9	<5	<5.3	<5.4	<5.9	<5.4	<5.8
Perfluorobutanoic Acid	NA	<5.9	<5	<5.3	<5.4	<5.9	<5.4	<5.8
Perfluorodecanoic acid (PFDA)	NA	<5.9	<5	<5.3	<5.4	<5.9	<5.4	<5.8
Perfluorododecanoic acid (PFDoA)	NA	<5.9	<5	<5.3	<5.4	<5.9	<5.4	<5.8
Perfluoro-1-heptanesulfonate (PFHpS)	NA	<5.9	**6**	<5.3	**24**	<5.9	<5.4	<5.8
Perfluoroheptanoic acid (PFHpA)	NA	<5.9	<5	<5.3	<5.4	<5.9	<5.4	<5.8
Perfluorohexanesulfonate (PFHxS)	NA	<5.9	<5	<5.3	<5.4	<5.9	<5.4	<5.8
Perfluorohexanoic acid (PFHxA)	NA	<5.9	<5	<5.3	<5.4	<5.9	<5.4	<5.8
Perfluoro-n-nonanoic acid (PFNA)	NA	<5.9	<5	<5.3	<5.4	<5.9	<5.4	<5.8
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<5.9	<5	**38**	<5.4	<5.9	<5.4	<5.8
Perfluorooctanesulfonate (PFOS)	0.24	***77***	***91***	***90***	***590***	<5.9	<5.4	<5.8
Perfluoro-n-octanoic acid (PFOA)	10,000	<5.9	**6.1**	<5.3	**22**	<5.9	<5.4	<5.8
Perfluoro-n-pentanoic acid (PFPeA)	NA	<5.9	<5	<5.3	<5.4	<5.9	<5.4	<5.8
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<5.9	<5	<5.3	<5.4	<5.9	<5.4	<5.8
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<5.9	<5	<5.3	<5.4	<5.9	<5.4	<5.8
Perfluoro-n-undecanoic acid (PFUdA)	NA	<5.9	<5	<5.3	<5.4	<5.9	<5.4	<5.8
Perfluoro-1-decanesulfonate (PFDS)	NA	<5.9	<5	<5.3	<5.4	<5.9	<5.4	<5.8
Perfluoro-1-nonanesulfonate (PFNS)	NA	<5.9	<5	<5.3	<5.4	<5.9	<5.4	<5.8
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<5.9	<5	<5.3	<5.4	<5.9	<5.4	<5.8

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-211	HS-SB-211	HS-SB-212	HS-SB-212	HS-SB-212	HS-SB-213	HS-SB-213
Sample Name		HS-SB-211 (2-4)	HS-SB-211 (8-10)	HS-SB-212 (0-2)	HS-SB-212 (0-2) DUP	HS-SB-212 (6-8)	HS-SB-213 (6-8)	HS-SB-213 (18-20)
Sample Depth Interval (feet)		2 - 4	8 - 10	0 - 2	0 - 2	6 - 8	6 - 8	18 - 20
Sample Date		6/6/2018	6/6/2018	6/7/2018	6/7/2018	6/7/2018	6/5/2018	6/5/2018
Parameter (ug/kg)								
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<11	<12	<10	<10	<9.7	<11	<11
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<11	<12	<10	<10	<9.7	<11	<11
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	<2.2	<2.3	<2.1	<2	<1.9	<2.1	<2.2
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<2.2	<2.3	<2.1	<2	<1.9	<2.1	<2.2
Perfluoro-1-butanesulfonate (PFBS)	NA	<5.6	<5.8	<5.1	<5	<4.9	<5.4	<5.4
Perfluorobutanoic Acid	NA	<5.6	<5.8	<5.1	<5	<4.9	<5.4	<5.4
Perfluorodecanoic acid (PFDA)	NA	<5.6	<5.8	<5.1	<5	<4.9	<5.4	<5.4
Perfluorododecanoic acid (PFDoA)	NA	<5.6	<5.8	<5.1	<5	<4.9	<5.4	<5.4
Perfluoro-1-heptanesulfonate (PFHpS)	NA	<5.6	<5.8	<5.1	<5	<4.9	<5.4	<5.4
Perfluoroheptanoic acid (PFHpA)	NA	<5.6	<5.8	<5.1	<5	<4.9	<5.4	<5.4
Perfluorohexanesulfonate (PFHxS)	NA	<5.6	<5.8	<5.1	<5	<4.9	<5.4	<5.4
Perfluorohexanoic acid (PFHxA)	NA	<5.6	<5.8	<5.1	<5	<4.9	<5.4	<5.4
Perfluoro-n-nonanoic acid (PFNA)	NA	<5.6	<5.8	<5.1	<5	<4.9	<5.4	<5.4
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<5.6	<5.8	**27**	**77**	<4.9	<5.4	<5.4
Perfluorooctanesulfonate (PFOS)	0.24	***6.7***	<5.8	***250***	***110***	***49***	<5.4	<5.4
Perfluoro-n-octanoic acid (PFOA)	10,000	<5.6	<5.8	<5.1	<5	<4.9	<5.4	<5.4
Perfluoro-n-pentanoic acid (PFPeA)	NA	<5.6	<5.8	<5.1	<5	<4.9	<5.4	<5.4
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<5.6	<5.8	<5.1	<5	<4.9	<5.4	<5.4
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<5.6	<5.8	<5.1	<5	<4.9	<5.4	<5.4
Perfluoro-n-undecanoic acid (PFUdA)	NA	<5.6	<5.8	<5.1	<5	<4.9	<5.4	<5.4
Perfluoro-1-decanesulfonate (PFDS)	NA	<5.6	<5.8	<5.1	<5	<4.9	<5.4	<5.4
Perfluoro-1-nonanesulfonate (PFNS)	NA	<5.6	<5.8	<5.1	<5	<4.9	<5.4	<5.4
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<5.6	<5.8	<5.1	<5	<4.9	<5.4	<5.4

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-214	HS-SB-214	HS-SB-215	HS-SB-215	HS-SB-216	HS-SB-216	HS-SB-217
Sample Name		HS-SB-214 (2-4)	HS-SB-214 (18-20)	HS-SB-215 (0-2)	HS-SB-215 (10-12)	HS-SB-216 (2-4)	HS-SB-216 (8-10)	HS-SB-217 (2-4)
Sample Depth Interval (feet)		2 - 4	18 - 20	0 - 2	10 - 12	2 - 4	8 - 10	2 - 4
Sample Date		6/6/2018	6/6/2018	6/7/2018	6/7/2018	6/8/2018	6/8/2018	6/8/2018
Parameter (ug/kg)								
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<11	<11	<11	<9.9	<12	<11	<12
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<11	<11	<11	<9.9	<12	<11	<12
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	<2.3	<2.2	<2.3	<2	<2.3	<2.1	<2.3
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<2.3	<2.2	<2.3	<2	<2.3	<2.1	<2.3
Perfluoro-1-butanesulfonate (PFBS)	NA	<5.7	<5.4	<5.6	<5	<5.8	<5.3	<5.8
Perfluorobutanoic Acid	NA	<5.7	<5.4	<5.6	<5	<5.8	<5.3	<5.8
Perfluorodecanoic acid (PFDA)	NA	<5.7	<5.4	<5.6	<5	<5.8	<5.3	<5.8
Perfluorododecanoic acid (PFDoA)	NA	<5.7	<5.4	<5.6	<5	<5.8	<5.3	<5.8
Perfluoro-1-heptanesulfonate (PFHpS)	NA	<5.7	<5.4	<5.6	<5	<5.8	<5.3	<5.8
Perfluoroheptanoic acid (PFHpA)	NA	<5.7	<5.4	<5.6	<5	<5.8	<5.3	<5.8
Perfluorohexanesulfonate (PFHxS)	NA	<5.7	<5.4	<5.6	<5	<5.8	<5.3	<5.8
Perfluorohexanoic acid (PFHxA)	NA	<5.7	<5.4	<5.6	<5	<5.8	<5.3	<5.8
Perfluoro-n-nonanoic acid (PFNA)	NA	<5.7	<5.4	<5.6	<5	<5.8	<5.3	<5.8
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<5.7	<5.4	<5.6	<5	<5.8	<5.3	<5.8
Perfluorooctanesulfonate (PFOS)	0.24	<5.7	<5.4	<5.6	<5	<5.8	<5.3	<5.8
Perfluoro-n-octanoic acid (PFOA)	10,000	<5.7	<5.4	<5.6	<5	<5.8	<5.3	<5.8
Perfluoro-n-pentanoic acid (PFPeA)	NA	<5.7	<5.4	<5.6	<5	<5.8	<5.3	<5.8
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<5.7	<5.4	<5.6	<5	<5.8	<5.3	<5.8
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<5.7	<5.4	<5.6	<5	<5.8	<5.3	<5.8
Perfluoro-n-undecanoic acid (PFUdA)	NA	<5.7	<5.4	<5.6	<5	<5.8	<5.3	<5.8
Perfluoro-1-decanesulfonate (PFDS)	NA	<5.7	<5.4	<5.6	<5	<5.8	<5.3	<5.8
Perfluoro-1-nonanesulfonate (PFNS)	NA	<5.7	<5.4	<5.6	<5	<5.8	<5.3	<5.8
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<5.7	<5.4	<5.6	<5	<5.8	<5.3	<5.8

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-217	HS-SB-218	HS-SB-218	HS-SB-219	HS-SB-219	HS-SB-220	HS-SB-220
Sample Name		HS-SB-217 (12-14)	HS-SB-218 (2-4)	HS-SB-218 (14-16)	HS-SB-219 (4-6)	HS-SB-219 (10-12)	HS-SB-220 (2-4)	HS-SB-220 (16-18)
Sample Depth Interval (feet)		12 - 14	2 - 4	14 - 16	4 - 6	10 - 12	2 - 4	16 - 18
Sample Date		6/8/2018	6/5/2018	6/5/2018	6/8/2018	6/8/2018	6/11/2018	6/11/2018
Parameter (ug/kg)								
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<9.3	<11	<10	<11	<11	<11	<9.9
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<9.3	<11	<10	<11	<11	<11	<9.9
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	<1.9	<2.1	<2	<2.2	<2.2	<2.2	<2
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<1.9	<2.1	<2	<2.2	<2.2	<2.2	<2
Perfluoro-1-butanesulfonate (PFBS)	NA	<4.7	<5.3	<5	<5.4	<5.4	<5.5	<5
Perfluorobutanoic Acid	NA	<4.7	<5.3	<5	<5.4	<5.4	<5.5	<5
Perfluorodecanoic acid (PFDA)	NA	<4.7	<5.3	<5	<5.4	<5.4	<5.5	<5
Perfluorododecanoic acid (PFDoA)	NA	<4.7	<5.3	<5	<5.4	<5.4	<5.5	<5
Perfluoro-1-heptanesulfonate (PFHpS)	NA	<4.7	<5.3	<5	<5.4	<5.4	<5.5	<5
Perfluoroheptanoic acid (PFHpA)	NA	<4.7	<5.3	<5	<5.4	<5.4	<5.5	<5
Perfluorohexanesulfonate (PFHxS)	NA	<4.7	<5.3	<5	<5.4	<5.4	<5.5	<5
Perfluorohexanoic acid (PFHxA)	NA	<4.7	<5.3	<5	<5.4	<5.4	<5.5	<5
Perfluoro-n-nonanoic acid (PFNA)	NA	<4.7	<5.3	<5	<5.4	<5.4	<5.5	<5
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<4.7	<5.3	<5	<5.4	<5.4	<5.5	<5
Perfluorooctanesulfonate (PFOS)	0.24	<4.7	<5.3	<5	<5.4	<5.4	<5.5	<5
Perfluoro-n-octanoic acid (PFOA)	10,000	<4.7	<5.3	<5	<5.4	<5.4	<5.5	<5
Perfluoro-n-pentanoic acid (PFPeA)	NA	<4.7	<5.3	<5	<5.4	<5.4	<5.5	<5
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<4.7	<5.3	<5	<5.4	<5.4	<5.5	<5
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<4.7	<5.3	<5	<5.4	<5.4	<5.5	<5
Perfluoro-n-undecanoic acid (PFUdA)	NA	<4.7	<5.3	<5	<5.4	<5.4	<5.5	<5
Perfluoro-1-decanesulfonate (PFDS)	NA	<4.7	<5.3	<5	<5.4	<5.4	<5.5	<5
Perfluoro-1-nonanesulfonate (PFNS)	NA	<4.7	<5.3	<5	<5.4	<5.4	<5.5	<5
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<4.7	<5.3	<5	<5.4	<5.4	<5.5	<5

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-221	HS-SB-221	HS-SB-222	HS-SB-222	HS-SB-223	HS-SB-223	HS-SB-224
Sample Name		HS-SB-221 (4-6)	HS-SB-221 (6-8)	HS-SB-222 (2-4)	HS-SB-222 (6-8)	HS-SB-223 (2-4)	HS-SB-223 (10-12)	HS-SB-224 (8-10)
Sample Depth Interval (feet)		4 - 6	6 - 8	2 - 4	6 - 8	2 - 4	10 - 12	8 - 10
Sample Date		6/11/2018	6/11/2018	6/11/2018	6/11/2018	6/8/2018	6/8/2018	6/12/2018
Parameter (ug/kg)								
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<12	<11	<10	<10	<9.2	<9.7	<11
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<12	<11	<10	<10	<9.2	<9.7	<11
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	<2.4	<2.1	<2.1	<2	<1.8	<1.9	<2.1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<2.4	<2.1	<2.1	<2	<1.8	<1.9	<2.1
Perfluoro-1-butanesulfonate (PFBS)	NA	<5.9	<5.3	<5.2	<5.1	<4.6	<4.8	<5.3
Perfluorobutanoic Acid	NA	<5.9	<5.3	<5.2	<5.1	<4.6	<4.8	<5.3
Perfluorodecanoic acid (PFDA)	NA	<5.9	<5.3	<5.2	<5.1	<4.6	<4.8	<5.3
Perfluorododecanoic acid (PFDoA)	NA	<5.9	<5.3	<5.2	<5.1	<4.6	<4.8	<5.3
Perfluoro-1-heptanesulfonate (PFHpS)	NA	<5.9	<5.3	<5.2	<5.1	<4.6	<4.8	<5.3
Perfluoroheptanoic acid (PFHpA)	NA	<5.9	<5.3	<5.2	<5.1	<4.6	<4.8	<5.3
Perfluorohexanesulfonate (PFHxS)	NA	<5.9	<5.3	<5.2	<5.1	<4.6	<4.8	<5.3
Perfluorohexanoic acid (PFHxA)	NA	<5.9	<5.3	<5.2	<5.1	<4.6	<4.8	<5.3
Perfluoro-n-nonanoic acid (PFNA)	NA	<5.9	<5.3	<5.2	<5.1	<4.6	<4.8	<5.3
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<5.9	<5.3	<5.2	<5.1	<4.6	<4.8	<5.3
Perfluorooctanesulfonate (PFOS)	0.24	<5.9	<5.3	<5.2	<5.1	<4.6	<4.8	<5.3
Perfluoro-n-octanoic acid (PFOA)	10,000	<5.9	<5.3	<5.2	<5.1	<4.6	<4.8	<5.3
Perfluoro-n-pentanoic acid (PFPeA)	NA	<5.9	<5.3	<5.2	<5.1	<4.6	<4.8	<5.3
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<5.9	<5.3	<5.2	<5.1	<4.6	<4.8	<5.3
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<5.9	<5.3	<5.2	<5.1	<4.6	<4.8	<5.3
Perfluoro-n-undecanoic acid (PFUdA)	NA	<5.9	<5.3	<5.2	<5.1	<4.6	<4.8	<5.3
Perfluoro-1-decanesulfonate (PFDS)	NA	<5.9	<5.3	<5.2	<5.1	<4.6	<4.8	<5.3
Perfluoro-1-nonanesulfonate (PFNS)	NA	<5.9	<5.3	<5.2	<5.1	<4.6	<4.8	<5.3
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<5.9	<5.3	<5.2	<5.1	<4.6	<4.8	<5.3

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-224	HS-SB-225	HS-SB-225	HS-SB-T2-002	HS-SB-T2-002	HS-SB-T2-003	HS-SB-T2-003
Sample Name		HS-SB-224 (10-12)	HS-SB-225 (2-4)	HS-SB-225 (18-20)	HS-SB-T2-002 (9-10)	HS-SB-T2-002 (12-13)	HS-SB-T2-003 (9-10)	HS-SB-T2-003 (13-14)
Sample Depth Interval (feet)		10 - 12	2 - 4	18 - 20	9 - 10	12 - 13	9 - 10	13 - 14
Sample Date		6/12/2018	6/11/2018	6/11/2018	6/25/2018	6/25/2018	6/25/2018	6/25/2018
Parameter (ug/kg)								
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<11	<11	<10	<9.5	<13	<11	<10
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<11	<11	<10	<9.5	<13	<11	<10
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	<2.2	<2.2	<2.1	<1.9	<2.6	<2.2	<2
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<2.2	<2.2	<2.1	<1.9	<2.6	<2.2	<2
Perfluoro-1-butanesulfonate (PFBS)	NA	<5.4	<5.5	<5.2	<4.8	<6.5	<5.4	<5.1
Perfluorobutanoic Acid	NA	<5.4	<5.5	<5.2	<4.8	<6.5	<5.4	<5.1
Perfluorodecanoic acid (PFDA)	NA	<5.4	<5.5	<5.2	<4.8	<6.5	<5.4	<5.1
Perfluorododecanoic acid (PFDoA)	NA	<5.4	<5.5	<5.2	<4.8	<6.5	<5.4	<5.1
Perfluoro-1-heptanesulfonate (PFHpS)	NA	<5.4	<5.5	<5.2	<4.8	<6.5	<5.4	<5.1
Perfluoroheptanoic acid (PFHpA)	NA	<5.4	<5.5	<5.2	<4.8	<6.5	<5.4	<5.1
Perfluorohexanesulfonate (PFHxS)	NA	<5.4	<5.5	<5.2	<4.8	<6.5	<5.4	<5.1
Perfluorohexanoic acid (PFHxA)	NA	<5.4	<5.5	<5.2	<4.8	<6.5	<5.4	<5.1
Perfluoro-n-nonanoic acid (PFNA)	NA	<5.4	<5.5	<5.2	<4.8	<6.5	<5.4	<5.1
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<5.4	<5.5	<5.2	<4.8	<6.5	<5.4	<5.1
Perfluorooctanesulfonate (PFOS)	0.24	<5.4	<5.5	<5.2	<4.8	<6.5	<5.4	<5.1
Perfluoro-n-octanoic acid (PFOA)	10,000	<5.4	<5.5	<5.2	<4.8	<6.5	<5.4	<5.1
Perfluoro-n-pentanoic acid (PFPeA)	NA	<5.4	<5.5	<5.2	<4.8	<6.5	<5.4	<5.1
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<5.4	<5.5	<5.2	<4.8	<6.5	<5.4	<5.1
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<5.4	<5.5	<5.2	<4.8	<6.5	<5.4	<5.1
Perfluoro-n-undecanoic acid (PFUdA)	NA	<5.4	<5.5	<5.2	<4.8	<6.5	<5.4	<5.1
Perfluoro-1-decanesulfonate (PFDS)	NA	<5.4	<5.5	<5.2	<4.8	<6.5	<5.4	<5.1
Perfluoro-1-nonanesulfonate (PFNS)	NA	<5.4	<5.5	<5.2	<4.8	<6.5	<5.4	<5.1
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<5.4	<5.5	<5.2	<4.8	<6.5	<5.4	<5.1

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-T2-004	HS-SB-T2-004	HS-SB-T2-010	HS-SB-T2-010	HS-SB-T2-011	HS-SB-T2-011	HS-SB-T2-012
Sample Name		HS-SB-T2-004 (9-10)	HS-SB-T2-004 (13-14)	HS-SB-T2-010 (9-10)	HS-SB-T2-010 (13-14)	HS-SB-T2-011 (9-10)	HS-SB-T2-011 (13-14)	HS-SB-T2-012 (4-5)
Sample Depth Interval (feet)		9 - 10	13 - 14	9 - 10	13 - 14	9 - 10	13 - 14	4 - 5
Sample Date		6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018
Parameter (ug/kg)								
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<9	<11	<9.2	<10	<10	<9.8	<10
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<9	<11	<9.2	<10	<10	<9.8	<10
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	<1.8	<2.1	<1.8	<2	<2.1	<2	<2
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<1.8	<2.1	<1.8	<2	<2.1	<2	<2
Perfluoro-1-butanesulfonate (PFBS)	NA	<4.5	<5.3	<4.6	<5.1	<5.2	<4.9	<5
Perfluorobutanoic Acid	NA	<4.5	<5.3	<4.6	<5.1	<5.2	<4.9	<5
Perfluorodecanoic acid (PFDA)	NA	<4.5	<5.3	<4.6	<5.1	<5.2	<4.9	<5
Perfluorododecanoic acid (PFDoA)	NA	<4.5	<5.3	<4.6	<5.1	<5.2	<4.9	<5
Perfluoro-1-heptanesulfonate (PFHpS)	NA	<4.5	<5.3	<4.6	**5.3**	<5.2	<4.9	<5
Perfluoroheptanoic acid (PFHpA)	NA	<4.5	<5.3	<4.6	<5.1	<5.2	<4.9	<5
Perfluorohexanesulfonate (PFHxS)	NA	<4.5	<5.3	<4.6	**13**	<5.2	<4.9	<5
Perfluorohexanoic acid (PFHxA)	NA	<4.5	<5.3	<4.6	<5.1	<5.2	<4.9	<5
Perfluoro-n-nonanoic acid (PFNA)	NA	<4.5	<5.3	<4.6	<5.1	<5.2	<4.9	<5
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<4.5	<5.3	<4.6	<5.1	<5.2	<4.9	<5
Perfluorooctanesulfonate (PFOS)	0.24	<4.5	<5.3	***24***	***8.3***	***14***	***8.2***	***15***
Perfluoro-n-octanoic acid (PFOA)	10,000	<4.5	<5.3	<4.6	**22**	<5.2	<4.9	<5
Perfluoro-n-pentanoic acid (PFPeA)	NA	<4.5	<5.3	<4.6	<5.1	<5.2	<4.9	<5
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<4.5	<5.3	<4.6	<5.1	<5.2	<4.9	<5
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<4.5	<5.3	<4.6	<5.1	<5.2	<4.9	<5
Perfluoro-n-undecanoic acid (PFUdA)	NA	<4.5	<5.3	<4.6	<5.1	<5.2	<4.9	<5
Perfluoro-1-decanesulfonate (PFDS)	NA	<4.5	<5.3	<4.6	<5.1	<5.2	<4.9	<5
Perfluoro-1-nonanesulfonate (PFNS)	NA	<4.5	<5.3	<4.6	<5.1	<5.2	<4.9	<5
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<4.5	<5.3	<4.6	<5.1	<5.2	<4.9	<5

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

Boring Location	Groundwater Surface Water Interface Protection Criteria	HS-SB-T2-012	HS-SB-T2-012
Sample Name		HS-SB-T2-012 (9-10)	HS-SB-T2-012 (13-14)
Sample Depth Interval (feet)		9 - 10	13 - 14
Sample Date		6/26/2018	6/26/2018
Parameter (ug/kg)			
1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2 FTS)	NA	<9	<9
1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)	NA	<9	<9
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	<1.8	<1.8
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	NA	<1.8	<1.8
Perfluoro-1-butanesulfonate (PFBS)	NA	<4.5	<4.5
Perfluorobutanoic Acid	NA	<4.5	<4.5
Perfluorodecanoic acid (PFDA)	NA	<4.5	<4.5
Perfluorododecanoic acid (PFDoA)	NA	<4.5	<4.5
Perfluoro-1-heptanesulfonate (PFHpS)	NA	<4.5	<4.5
Perfluoroheptanoic acid (PFHpA)	NA	<4.5	<4.5
Perfluorohexanesulfonate (PFHxS)	NA	<4.5	<4.5
Perfluorohexanoic acid (PFHxA)	NA	<4.5	<4.5
Perfluoro-n-nonanoic acid (PFNA)	NA	<4.5	<4.5
Perfluoro-1-octanesulfonamide (PFOSA)	NA	<4.5	<4.5
Perfluorooctanesulfonate (PFOS)	0.24	***15***	<4.5
Perfluoro-n-octanoic acid (PFOA)	10,000	<4.5	<4.5
Perfluoro-n-pentanoic acid (PFPeA)	NA	<4.5	<4.5
Perfluoro-n-tetradecanoic acid (PFTeDA)	NA	<4.5	<4.5
Perfluoro-n-tridecanoic acid (PFTrDA)	NA	<4.5	<4.5
Perfluoro-n-undecanoic acid (PFUdA)	NA	<4.5	<4.5
Perfluoro-1-decanesulfonate (PFDS)	NA	<4.5	<4.5
Perfluoro-1-nonanesulfonate (PFNS)	NA	<4.5	<4.5
Perfluoro-1-pentanesulfonate (PFPeS)	NA	<4.5	<4.5

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS - PFAS
HOUSE STREET DISPOSAL AREA
PLAINFIELD TOWNSHIP, MICHIGAN

NOTES:
1. Concentration and criteria units are micro-grams per kilogram or parts per billion; "< RL" or "<PQL" indicates the compound was analyzed for but not detected above the method detection limit; RL = Reporting Limit; PQL=Pratical Quantitation Limit.

2. Bold indicates that compound was detected above the RL. Italic number with thick line border or italic constituent name indicates that compound was detected above one of the listed cleanup criteria.

3. MDEQ Proposed Part 201 Residential Cleanup Criteria were based on the : Part 201 Cleanup Cirteria Rules," dated December, 2013, Revised June 25, 2018.

TABLE 2
SUMMARY OF TEMPORARY WELL GROUNDWATER DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

LOCATION	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - DRINKING WATER USES	HS-GW-SB-206	HS-GW-SB-208	HS-GW-SB-219	HS-GW-SB-221	HS-GW-SB-222
SAMPLE NAME		HS-GW-SB206 (13.0-19.4)	HS-GW-SB208 (14-20)	HS-GW-SB219 (14-20)	HS-GW-SB221 (13 20)	HS-GW-SB222 (13-20)
LAB ID		TF13014-001	TF13014-002	TF13014-005	TF15009-001	TF13014-006
SAMPLE DATE		06/12/2018	06/12/2018	06/13/2018	06/14/2018	06/13/2018
Parameter (ng/L)						
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<3.6	<360	<4.3	<3.7	<3.9
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<3.6	<360	<4.3	<3.7	<3.9
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<3.6	<360	<4.3	<3.7	<3.9
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<7.2	<720	<8.6	<7.4	<7.9
Perfluorobutane sulfonic acid (PFBS)	NA	**6.9**	**3,900**	**6.2**	<3.7	**4.4**
Perfluorobutanoic acid (PFBA)	NA	<3.6	**1,100**	<4.3	<3.7	**7.5**
Perfluorodecane sulfonic acid (PFDS)	NA	<3.6	<360	<4.3	<3.7	<3.9
Perfluorodecanoic acid (PFDA)	NA	<3.6	<360	<4.3	<3.7	<3.9
Perfluorododecanoic acid (PFDoDA)	NA	<3.6	<360	<4.3	<3.7	<3.9
Perfluoroheptane sulfonic acid (PFHpS)	NA	<3.6	**17,000**	**7.9**	<3.7	<3.9
Perfluoroheptanoic acid (PFHpA)	NA	<3.6	**4,100**	<4.3	<3.7	<3.9
Perfluorohexane sulfonic acid (PFHxS)	NA	**50**	**34,000**	**23**	**4.9**	<3.9
Perfluorohexanoic acid (PFHxA)	NA	<3.6	**3,100**	<4.3	<3.7	**4.2**
Perfluorononanoic acid (PFNA)	NA	<3.6	<360	<4.3	<3.7	<3.9
Perfluorooctane sulfonamide (FOSA)	NA	<3.6	<360	<4.3	<3.7	<3.9
Perfluorooctane sulfonic acid (PFOS)	70	**6.9**	***240,000***	**49**	**26**	**65**
Perfluorooctanoic acid (PFOA)	70	**5.9**	***37,000***	**23**	**3.2**	**17**
Perfluoropentanoic acid (PFPeA)	NA	<3.6	**1,200**	<4.3	<3.7	<3.9
Perfluorotetradecanoic acid (PFTeDA)	NA	<3.6	<360	<4.3	<3.7	<3.9
Perfluorotridecanoic acid (PFTrDA)	NA	<3.6	<360	<4.3	<3.7	<3.9
Perfluoroundecanoic acid (PFUnDA)	NA	<3.6	<360	<4.3	<3.7	<3.9
Perfluorononane sulfonic acid (PFNS)	NA	<7.2	<720	<8.6	<7.4	<7.9
Perfluoropentane sulfonic acid (PFPeS)	NA	**4.8**	**5,300**	<4.3	<3.7	<3.9

TABLE 2
SUMMARY OF TEMPORARY WELL GROUNDWATER DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

NOTES:
1. Concentration and criteria units 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

2. Bold indicates that compound was detected above the RL. Italic number with thick line border or italic constituent name indicates that compound was detected above the USEPA Health Advisory for Drinking Water Uses.

3. Michigan Part 201 groundwater cleanup criteria protective of drinking water uses were based on USEPA Health Advisory Level obtained from USEPA Fact sheet: PFOA & PFOS Drinking Water Health Advisories, EPA 800-F-16-003, dated November 2016.

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

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL DATA - MW-18 PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

LOCATION	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - DRINKING WATER USES	MW-18D	MW-18S	PMW-18	PMW-18	PMW-18	PMW-18	PMW-18	PMW-18	PMW-18	PMW-18	PMW-18	PMW-18	PMW-18	PMW-18	PMW-18
SAMPLE NAME		MW-18D (screened 138-143)	MW-18S (screened 13-23)	PMW-18-104-109	PMW-18-114-119	PMW-18-124-129	PMW-18-134-139	PMW-18-14-19	PMW-18-24-29	PMW-18-34-39	PMW-18-44-49	PMW-18-54-59	PMW-18-64-69	PMW-18-74-79	PMW-18-84-89	PMW-18-94-99
LAB ID		TG07027-006	TG07027-005	TE17020-004	TE17020-005	TE17020-006	TE17020-007	TE17021-002	TE17021-004	TE17021-005	TE17021-006	TE17021-007	TE17021-008	TE17021-011	TE17021-012	TE17020-001
SAMPLE DATE		07/06/2018	07/06/2018	05/16/2018	05/16/2018	05/16/2018	05/16/2018	05/14/2018	05/15/2018	05/15/2018	05/15/2018	05/15/2018	05/15/2018	05/15/2018	05/15/2018	05/16/2018
Parameter (ng/L)																
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<3.5	<3.5	<3.5	<3.6	<3.6	<3.6	<3.5	<3.5	<3.5	<3.6	<3.5	<3.6	<3.5	<3.5	<3.7
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<3.5	<3.5	<3.5	<3.6	<3.6	<3.6	<3.5	<3.5	<3.5	<3.6	<3.5	<3.6	<3.5	<3.5	<3.7
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<3.5	<3.5	<3.5	<3.6	<3.6	<3.6	<3.5	<3.5	<3.5	<3.5	<3.5	<3.6	<3.5	<3.5	<3.7
N-Ethyl perfluorooctane sulfonamidoethanol	NA															
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<7	<7	<7.1	<7.2	<7.1	<7.1	<6.9	<7	<7	<7.2	<7	<7.2	<7	<7	<7.4
N-Methyl perfluorooctane sulfonamidoethanol	NA															
Perfluorobutane sulfonic acid (PFBS)	NA	24	<3.5	140	140	180	170	5.1	6.2	<3.5	<3.6	<3.5	5.6	10	15	33
Perfluorobutanoic acid (PFBA)	NA	16	<3.5	28	30	59	60	<3.5	8.9	<3.5	<3.6	<3.5	<3.6	<3.5	<3.5	7.4
Perfluorodecane sulfonic acid (PFDS)	NA	<3.5	<3.5	<3.5	<3.6	<3.6	<3.6	<3.5	<3.5	<3.5	<3.6	<3.5	<3.6	<3.5	<3.5	<3.7
Perfluorodecanoic acid (PFDA)	NA	<3.5	<3.5	<3.5	<3.6	<3.6	<3.6	<3.5	<3.5	<3.5	<3.6	<3.5	<3.6	<3.5	<3.5	<3.7
Perfluorododecanoic acid (PFDoDA)	NA	<3.5	<3.5	<3.5	<3.6	<3.6	<3.6	<3.5	<3.5	<3.5	<3.6	<3.5	<3.6	<3.5	<3.5	<3.7
Perfluoroheptane sulfonic acid (PFHpS)	NA	<3.5	<3.5	34	30	<3.6	<3.6	<3.5	<3.5	<3.5	<3.6	<3.5	<3.6	<3.5	<3.5	11
Perfluoroheptanoic acid (PFHpA)	NA	9.5	<3.5	82	87	84	70	<3.5	<3.5	<3.5	<3.6	<3.5	<3.6	3.5	7.1	19
Perfluorohexane sulfonic acid (PFHxS)	NA	5.8	<3.5	350	320	130	60	<3.5	4.3	<3.5	<3.6	<3.5	<3.6	11	26	90
Perfluorohexanoic acid (PFHxA)	NA	19	<3.5	79	84	120	120	<3.5	<3.5	<3.5	<3.6	<3.5	<3.6	5.2	7.2	17
Perfluorononanoic acid (PFNA)	NA	<3.5	<3.5	<3.5	<3.6	<3.6	<3.6	<3.5	<3.5	<3.5	<3.6	<3.5	<3.6	<3.5	<3.5	<3.7
Perfluorooctane sulfonamide (FOSA)	NA	<3.5	<3.5	<3.5	<3.6	<3.6	<3.6	<3.5	<3.5	<3.5	<3.6	<3.5	<3.6	<3.5	<3.5	<3.7
Perfluorooctane sulfonic acid (PFOS)	70	<3.5	<3.5	***98***	***84***	4.5	<3.6	<3.5	<3.5	<3.5	<3.6	<3.5	<3.6	<3.5	11	43
Perfluorooctanoic acid (PFOA)	70	9.2	<1.8	***330***	***330***	***180***	***100***	<1.7	<1.7	<1.7	<1.8	<1.7	2.2	11	26	***83***
Perfluoropentanoic acid (PFPeA)	NA	14	<3.5	30	32	57	60	<3.5	<3.5	<3.5	<3.6	<3.5	<3.6	<3.5	<3.5	7.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<3.5	<3.5	<3.5	<3.6	<3.6	<3.6	<3.5	<3.5	<3.5	<3.5	<3.5	<3.6	<3.5	<3.5	<3.7
Perfluorotridecanoic acid (PFTrDA)	NA	<3.5	<3.5	<3.5	<3.6	<3.6	<3.6	<3.5	<3.5	<3.5	<3.6	<3.5	<3.6	<3.5	<3.5	<3.7
Perfluoroundecanoic acid (PFUnDA)	NA	<3.5	<3.5	<3.5	<3.6	<3.6	<3.6	<3.5	<3.5	<3.5	<3.6	<3.5	<3.6	<3.5	<3.5	<3.7
Perfluorononane sulfonic acid (PFNS)	NA	<7	<7	<7.1	<7.2	<7.1	<7.1	<6.9	<7	<7	<7.2	<7	<7.2	<7	<7	<7.4
Perfluoropentane sulfonic acid (PFPeS)	NA	11	<3.5	160	170	130	98	<3.5	<3.5	<3.5	<3.6	<3.5	<3.6	6.4	13	41

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL DATA - MW-18 PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

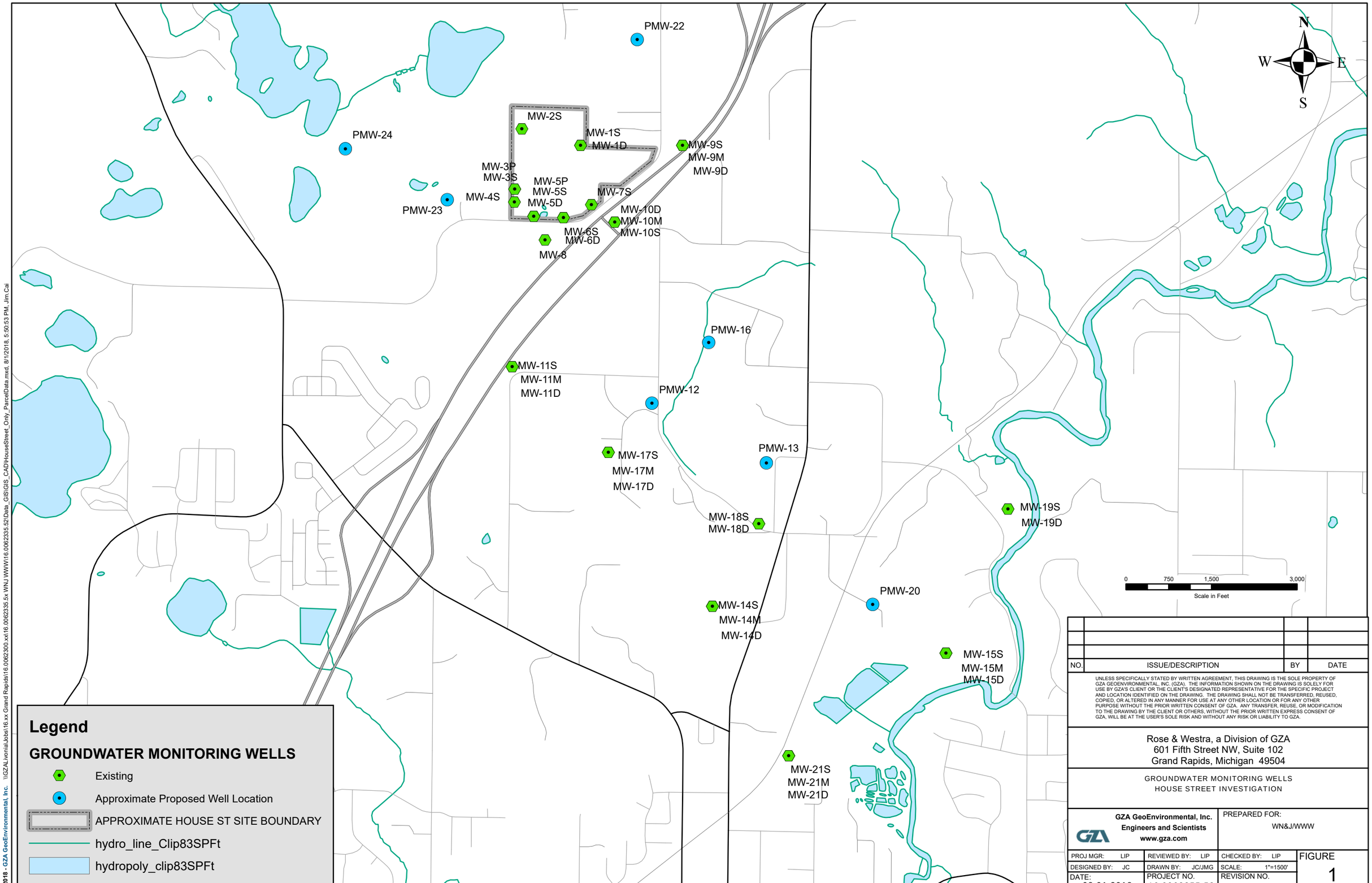
NOTES:
1. Concentration and criteria units are nano-grams per liter (ng/L) or parts per trillion (ppt); "< RL" indicates the compound was analyzed for but not detected above the method detection limit; RL = Reporting Limit

2. Bold indicates that compound was detected above the RL. Italic number with thick line border or italic contituent name indicates that compound was detected above the USEPA Health Advisory for Drinking Water Uses.

3. Michigan Part 201 groundwater cleanup criteria protective of drinking water uses were based on USEPA Health Advisory Level obtained from USEPA Fact sheet: PFOA & PFOS Drinking Water Health Advisories, EPA 800-F-16-003, dated November 2016.

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

Attachment C – Figures 1 and 2



NO.	ISSUE/DESCRIPTION	BY	DATE

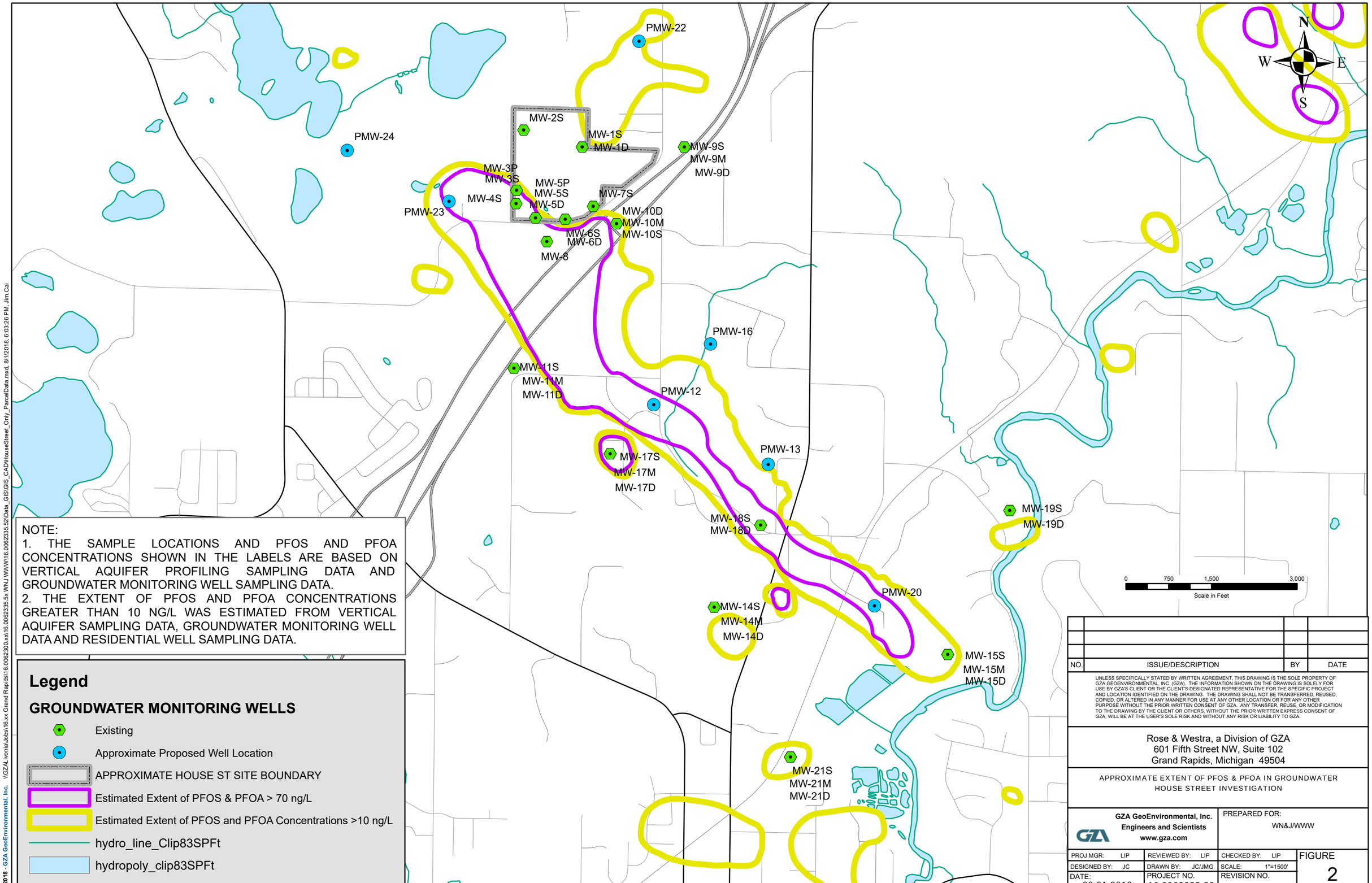
Rose & Westra, a Division of GZA
601 Fifth Street NW, Suite 102
Grand Rapids, Michigan 49504

GROUNDWATER MONITORING WELLS
HOUSE STREET INVESTIGATION

GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
WN&J/WWW

PROJ MGR: LIP	REVIEWED BY: LIP	CHECKED BY: LIP	FIGURE
DESIGNED BY: JC	DRAWN BY: JC/JMG	SCALE: 1"=1500'	1
DATE: 08-01-2018	PROJECT NO. 16.0062355.52	REVISION NO.	



NOTE:
1. THE SAMPLE LOCATIONS AND PFOS AND PFOA CONCENTRATIONS SHOWN IN THE LABELS ARE BASED ON VERTICAL AQUIFER PROFILING SAMPLING DATA AND GROUNDWATER MONITORING WELL SAMPLING DATA.
2. THE EXTENT OF PFOS AND PFOA CONCENTRATIONS GREATER THAN 10 NG/L WAS ESTIMATED FROM VERTICAL AQUIFER SAMPLING DATA, GROUNDWATER MONITORING WELL DATA AND RESIDENTIAL WELL SAMPLING DATA.

Legend

GROUNDWATER MONITORING WELLS

- Existing
- Approximate Proposed Well Location
- APPROXIMATE HOUSE ST SITE BOUNDARY
- Estimated Extent of PFOS & PFOA > 70 ng/L
- Estimated Extent of PFOS and PFOA Concentrations >10 ng/L
- hydro_line_Clip83SPFt
- hydropoly_clip83SPFt

NO.	ISSUE/DESCRIPTION	BY	DATE

Rose & Westra, a Division of GZA
601 Fifth Street NW, Suite 102
Grand Rapids, Michigan 49504

APPROXIMATE EXTENT OF PFOS & PFOA IN GROUNDWATER
HOUSE STREET INVESTIGATION

GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
WN&J/WWW

PROJ MGR: LIP	REVIEWED BY: LIP	CHECKED BY: LIP	FIGURE
DESIGNED BY: JC	DRAWN BY: JC/JMG	SCALE: 1"=1500'	2
DATE: 08-01-2018	PROJECT NO. 16.0062355.52	REVISION NO.	