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February 9, 2018
File No. 16.0062335.52

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

Re: Conceptual Site Model Update and Status Report
Former House Street Site
1885 House Street, Plainfield Township, Michigan

Dear Ms. Hendershott:

On behalf of Wolverine World Wide, Inc. (Wolverine), Rose & Westra, a Division of GZA GeoEnvironmental, Inc. (R&W/GZA), prepared this Conceptual Site Model Update and Status Report (Report) related to the presence of per– and poly-fluoroalkyl substances (PFAS) at the Former House Street Site (Site). This Report was prepared in response to certain requests included in MDEQ's November 2, 2017 letter[1] to Wolverine and Wolverine's ongoing investigation. Specifically, this letter addresses Request F related to the Wolverine Former House Street Site in MDEQ's November 2, 2017 letter.

The Conceptual Site Model (CSM) described in this Report was based on the investigation work being performed at the Site as of January 30, 2018, which follows the "Conceptual Site Model and Remedial Investigation Work Plan," dated November 27, 2017 (RIWP), and MDEQ's subsequent review comments. The implementation of the RIWP is ongoing. When the work in the RIWP is completed, the CSM will be updated along with a remedial investigation report.

R&W/GZA trust that this letter and attachments are responsive to MDEQ requests referenced herein. Should you have any questions, please do not hesitate to contact the undersigned.

Very truly yours,

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

Jiangeng (Jim) Cai, P.E.
Senior Consultant

Mark A. Westra
Associate Principal

John C. Osborne, P.G.
Consultant Reviewer/Senior Vice President

Attachments: As Stated

1. Letter by MDEQ titled "*Wolverine World Wide, Inc. (Wolverine) PFAS Response, House Street, Plainfield Township, and Wolverine Tannery, 123 Main Street, Rockford, Kent County, Michigan*."

Proactive by Design



CONCEPTUAL SITE MODEL UPDATE AND STATUS REPORT

Former House Street Disposal Area
Wolverine World Wide, Inc.
Rockford, Michigan

February 9, 2018
File No. 16.0062335.52

PREPARED FOR:
Wolverine World Wide, Inc.

Rose & Westra, A Division of
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1.0 INTRODUCTION

Rose and Westra, A Division of GZA GeoEnvironmental, Inc. (RW/GZA) has prepared this Report on behalf of Wolverine World Wide, Inc. (Wolverine), regarding Wolverine's Former House Street Disposal Area, located at 1855 House Street, NE, Plainfield Township, Kent County, Michigan (Site). This Report has been prepared for submittal to the Michigan Department of Environmental Quality (MDEQ) in response to MDEQ's November 2, 2017 letter, Item F, requesting the development of a Conceptual Site Model (CSM) for the Site plume, including cross-sections, iso-concentration maps, source area soil sampling, data tables and surface water samples, etc. by January 30, 2018, as part of Wolverine's ongoing investigation. MDEQ verbally granted an extension to February 9, 2018. Please note that this Report is subject to the limitations provided in Appendix A.

1.1 BACKGROUND

Wolverine disposed of byproducts from its leather tanning operations at the Site, which was a licensed and regulated disposal facility from the mid-1960s through 1978 authorized by the State of Michigan. MDEQ Remediation and Redevelopment Division (RRD) files indicate the House Street Site waste disposal license expired in 1978, but it appears no waste was disposed after 1970. The byproducts appear to have contained perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA), which are part of a larger group of perfluoroalkyl and polyfluoroalkyl substances (PFAS). PFAS were in 3M's Scotchgard™ applied to some leather manufactured at the tannery.

In March 2017, MDEQ informed Wolverine that material containing PFAS may have been disposed at the Site. Since April 2017, Wolverine has voluntarily and proactively worked with MDEQ, the Kent County Health Department (KCHD), and Michigan Department of Health and Human Services (DHHS) to establish zones for drinking water well testing, provided alternate (bottled) water service, point of use (faucet) water filters, and point of entry (whole house) filter systems. As of January 30, 2018, six hundred forty-four (644) drinking water wells were sampled and analyzed for PFAS in the investigation and expansion areas related to the Site; six hundred forty-four (644) properties/houses were offered alternate water sources; faucet water filters were installed for eighty-one (81) houses; and whole house filter systems were installed for three hundred twenty (320) houses, and are scheduled to be installed for an additional fifteen (15) houses. RW/GZA has installed 30 groundwater monitoring wells at seven (7) locations on the Site, one location on the adjoining Michigan Department of Transportation (MDOT) parcel, three (3) locations on the US-131 right of way (ROW), and three (3) locations along the northern side of the Rogue River.

A "Conceptual Site Model and Remedial Investigation Work Plan," prepared by RW/GZA, dated November 27, 2017 (RIWP), was submitted to MDEQ, who provided review comments to Wolverine on December 26, 2017. The implementation of the RIWP began in November 2017 and is ongoing. To date, the source area waste and soil sampling has been started and clustered monitoring wells have been installed at three locations near the Rogue River.

1.2 SCOPE OF WORK

The scope of work for the development of the CSM consists of the following components:

- Evaluate existing literature and historical information;
- Obtain and evaluate source area information;

- Obtain and assess the physical setting of the Site and its vicinity: topology, geology, surface water hydrology, and groundwater;
- Assess the extent of PFOA/PFOS in groundwater;
- Summarize available waste, soil, and groundwater testing to identify constituents of interest and their concentrations in the various media;
- Assess the fate and transport characteristics of the constituents of interest, particularly PFOA and PFOS which are found in groundwater off the House Street site,
- Evaluate relevant exposure pathways; and,
- Develop a preliminary CSM, which will be further revised with additional data and analysis throughout the lifecycle of the project.

A preliminary CSM has been developed and included in the November 27, 2017 RIWP. This Report provides an update of the CSM with the additional data collected since November 2017.

2.0 DEVELOPMENT OF A CONCEPTUAL SITE MODEL

The following sections discuss the information and data reviewed and evaluated, leading to the development of the CSM.

2.1 SITE LOCATION AND TOPOLOGY

The Site is located at 1855 House Street, NE, Plainfield Township, Michigan, Kent County, Michigan. The Site resides in an area of mixed rural and residential land use according to "Plainfield Charter Township Zoning Map," dated April 13, 2015. See Figure A for a Locus Plan.

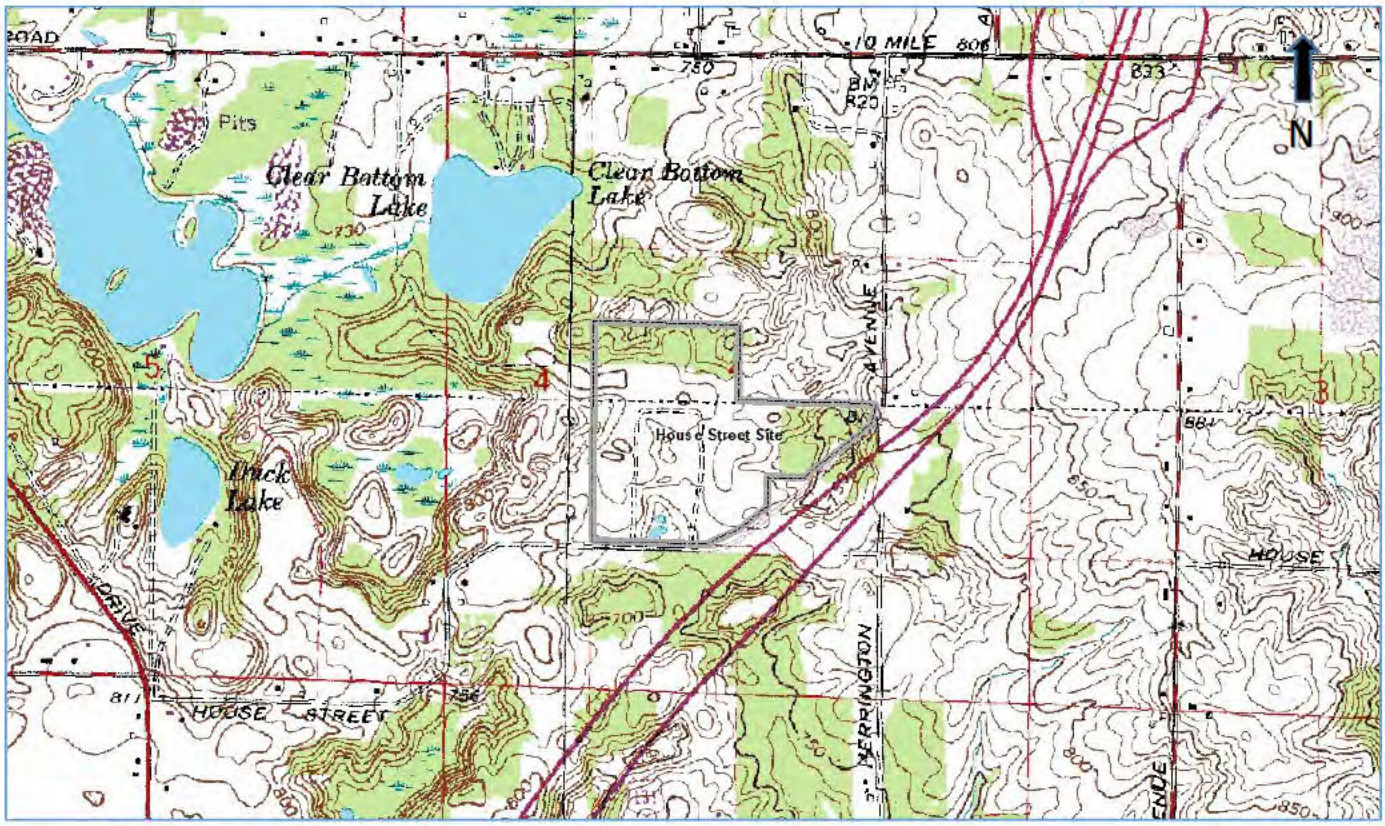


Figure 1 - USGS Topography Map

As shown in Figure 1, a clipped topography map from the United States Geological Survey (USGS) topography map, the Site is located immediately northwest of US Highway – 131, with ground surface elevations ranging from 740 feet to 800 feet. The terrain is generally hilly in the region. Ground surface elevations for the area east of the Site range from 800 to more than 900 feet; ground surface elevations for the west to southwest of the Site ranges from 800 to 820 feet, with lower terrains to the northwest and southeast. Figure No. 2 provides a regional view of the topography based on USGS's Digital Elevation Model (DEM) geographic information system (GIS) file downloaded from the Michigan Geographical Digital Library (MGDL)[1], overlaid with GIS data for surface water features (Center for Shared Solutions and Technology Partnerships, 2014). The Site is flanked by higher ground to the northeast and southwest, but ground surface dips to the northwest toward the Clear Bottom Lake and Freska Lake, and to the southeast toward the Rogue River.

[1] http://www.mcgi.state.mi.us/mgdl/

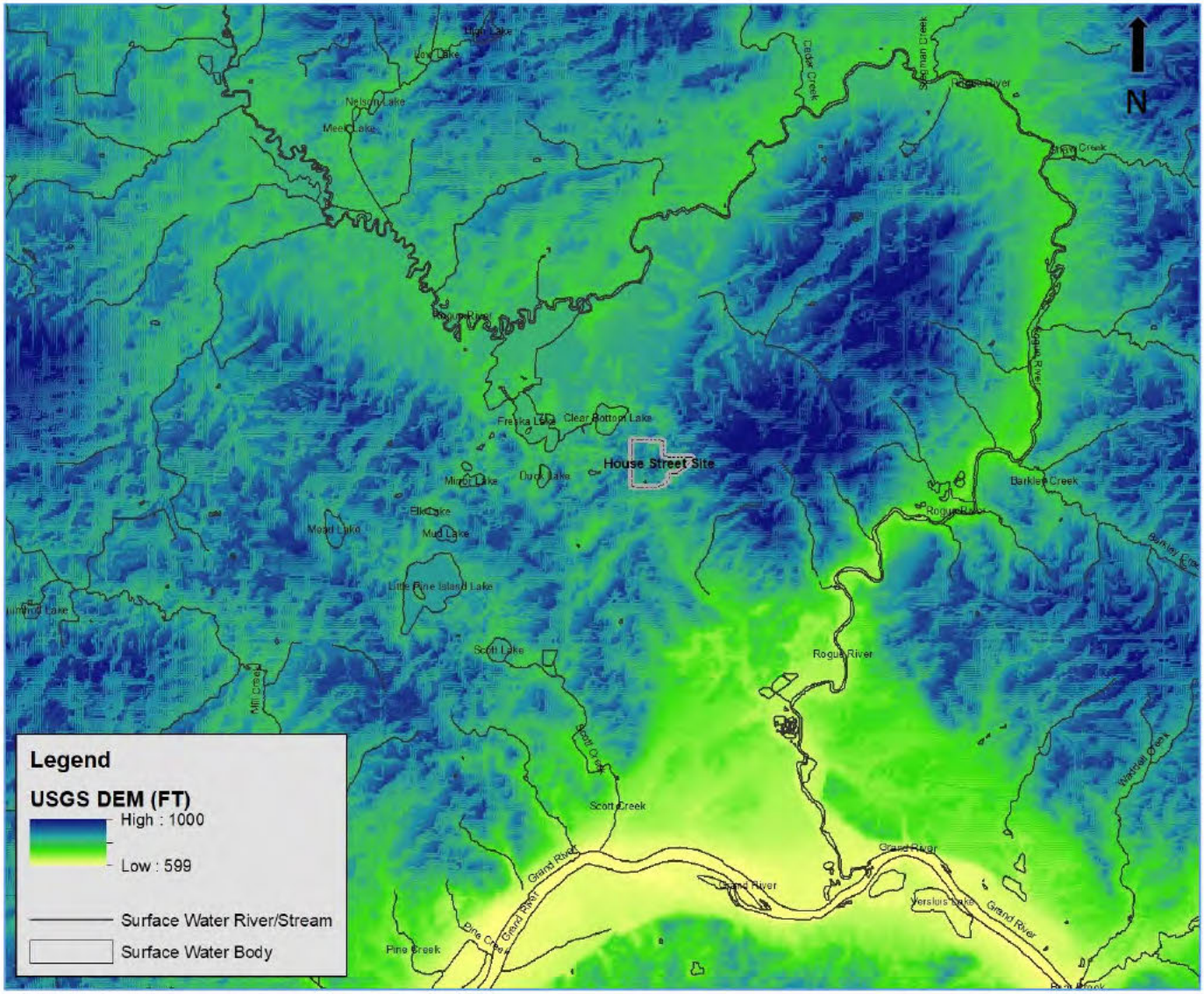


Figure 2 - USGS DEM and Surface Water Features

2.2 HYDROLOGY

Based on the Michigan's Major Watersheds – Sub-basins GIS data (Michigan Department of Environmental Quality, 2011) downloaded from MGDL, the Site is situated within the Rogue River Basin (Basin No. 14F), which is part of the Lower Grand River watershed (HUC 0405006). The Rogue River basin consists of 12 sub-basins, three of which are near the Site area, as shown in Figure 3. The Site is situated on the water divide of two sub-basins: HUC 405006040080 and HUC 405006040120, both draining to the Rogue River, which discharges to the Grand River. The Site is also near sub-basin HUC 45006050050, which is part of the Grand River basin.

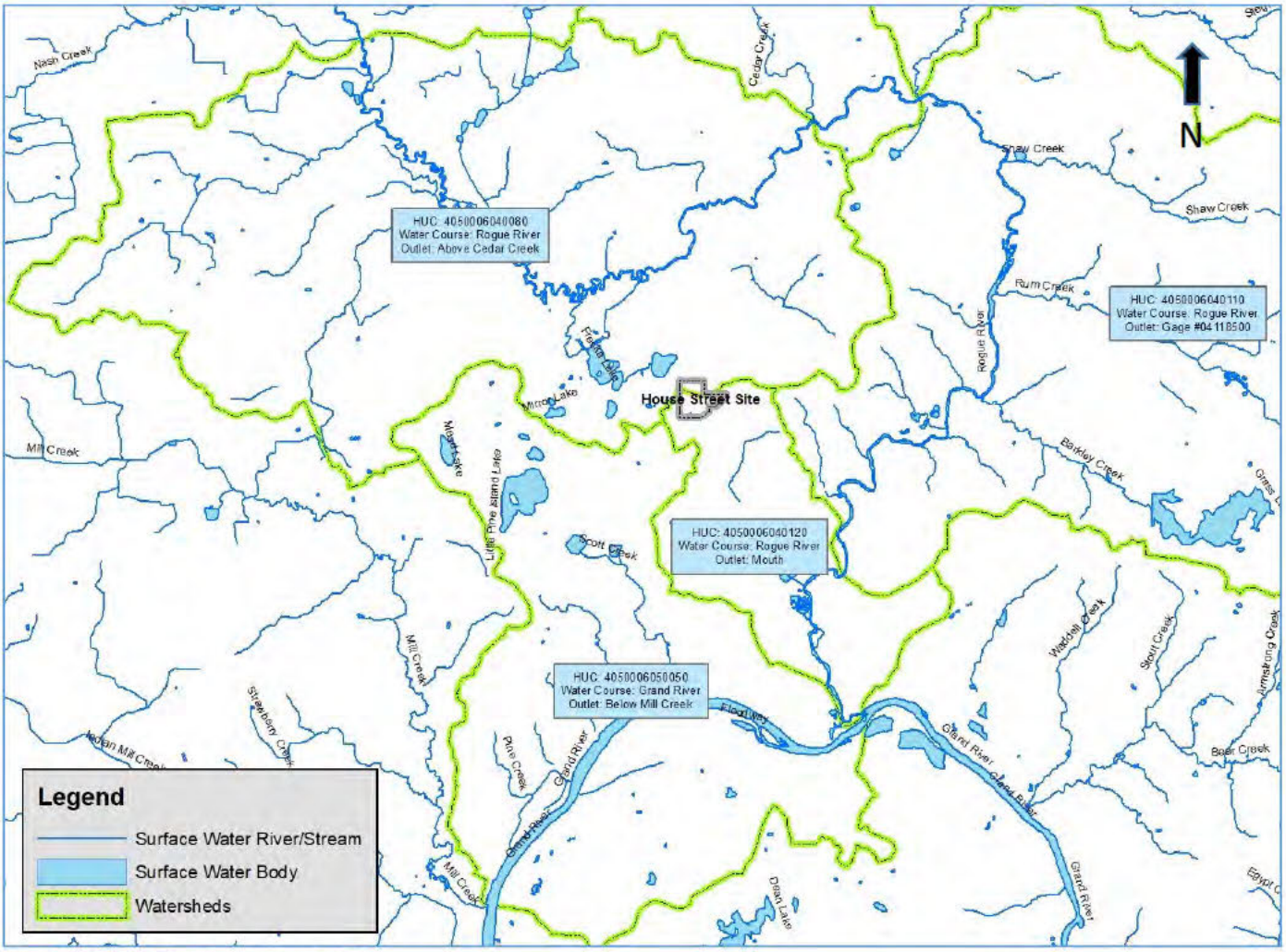


Figure 3 - Major Watersheds Near the Site

Based on the 2016 climate data report for Grand Rapids, Michigan, downloaded from National Oceanic and Atmospheric Administration (NOAA), the mean annual precipitation for the record period of 80 years is approximately 36 inches. Streamflow data at the USGS Gaging Station No. 04118500, located at Rockford, Michigan, the discharge point of sub-basin HUC 405006040110 (See Figure 3), from 1989 to 2016, were downloaded and reviewed with the use of USGS Groundwater Toolbox software. Annual baseflow rates were estimated and plotted with the annual total streamflow rates in Figure 4.

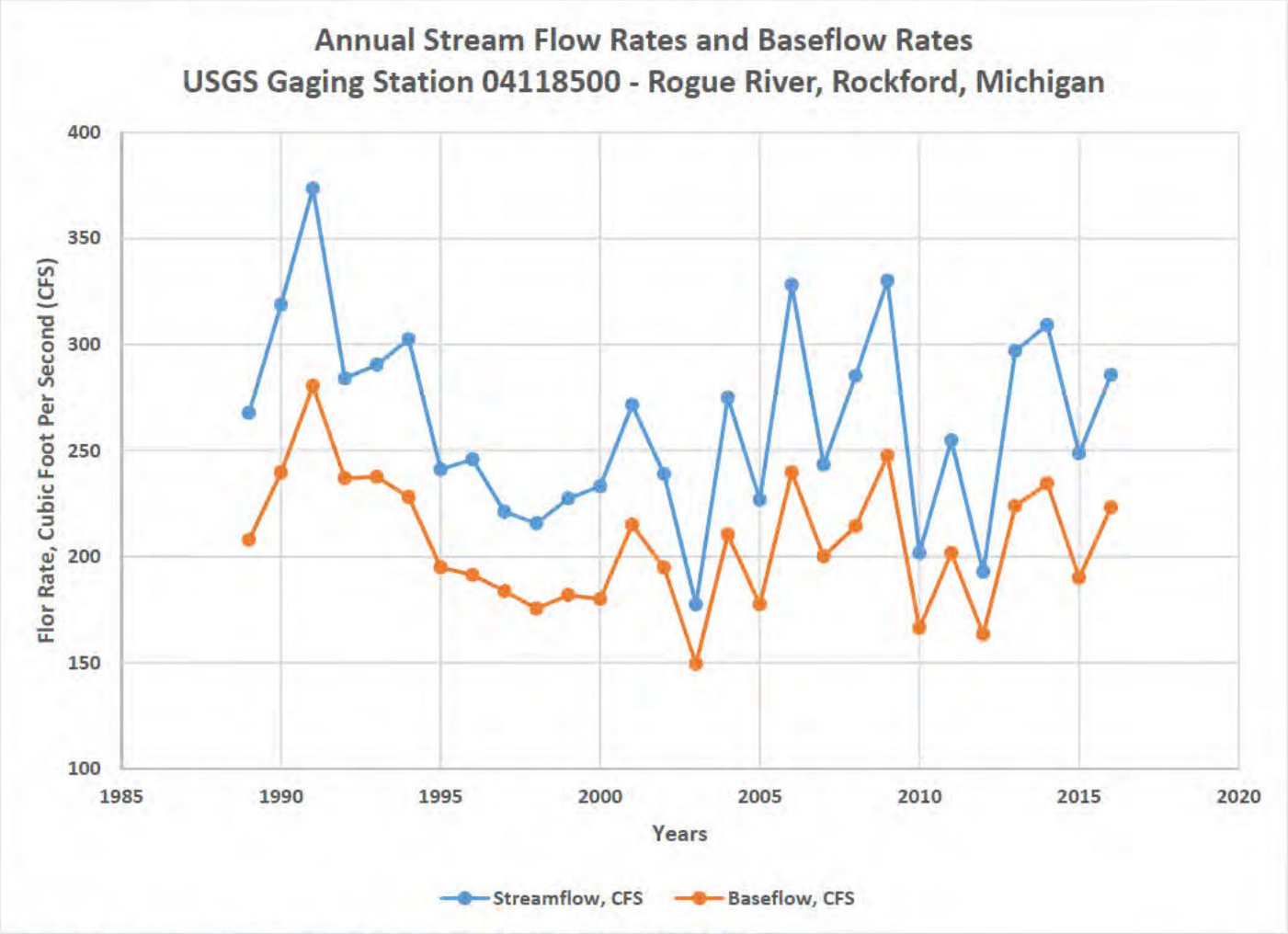


Figure 4 -Annual Streamflow and Baseflow Rates, the Rogue River, Rockford, Michigan

From 1989 to 2016, the average annual streamflow rate is approximately 260 cubic feet per second (CFS), and the average baseflow rate approximately 210 CFS. The gaging station measures the flow for the sub-basin, HUC 405006040110, and all the upstream sub-basins, representing a drainage area of approximately 234 square miles according to the USGS record. The equivalent streamflow, baseflow, and runoff, expressed in inches are as follow:

Table 1 - Average Annual Streamflow, Baseflow, and Runoff, Sub-basin (HUC 405006040110)

Parameters	**Average**
Total Streamflow Rates (1989 – 2016)	15.3 inches
Base Flow Rates (1989 – 2016)	12.0 inches
Runoff (1989 – 2016)	3.3 inches

Baseflow represents the amount of groundwater flow discharging to the surface water. Assuming 100 percent of groundwater recharge to the aquifer is discharged to the river as baseflow, the base flow rate for the sub-basin represents approximately 12 inches of annual recharge (This assumption does not consider groundwater inflow and outflow between this aquifer and other adjacent aquifers vertically and horizontally.).

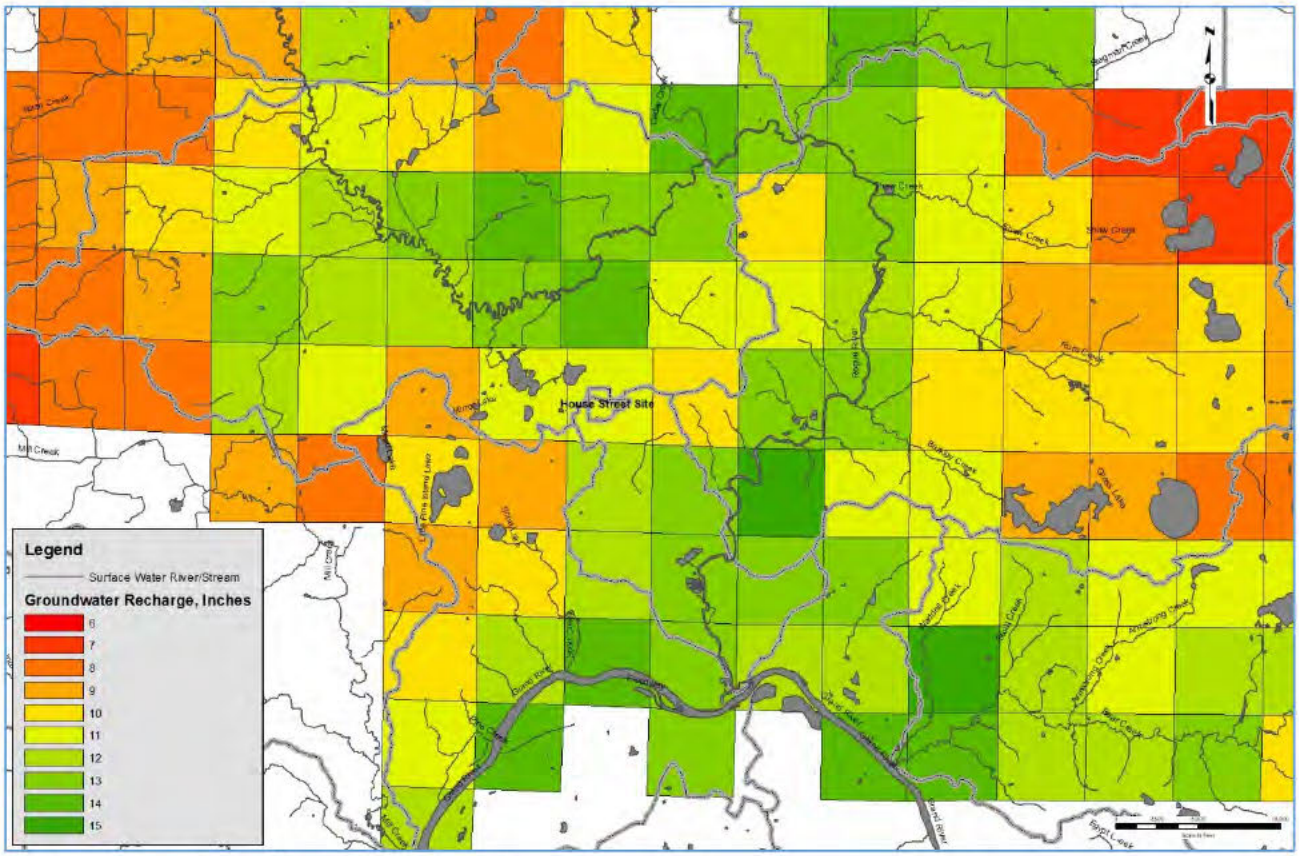


Figure 5 - Estimated Groundwater Recharge, Inches

Based on the State-wide GIS data for the estimated annual groundwater recharge (Groundwater Inventory and Mapping Project, 2005) downloaded from MGDL (See Figure 5), groundwater recharge in the region varies from 7 to 15 inches, with an average of approximately 11 inches; groundwater recharge in the cells immediately around the Site ranges from 9 to 14 inches; and groundwater recharge at the Site is approximately 11 inches.

Based on the National Wetland Inventory for Kent County GIS data (U.S. Fish & Wildlife Service, 1994) downloaded from MGDL, wetlands are present near the Rogue River southeast of the Site and northwest of the Site.

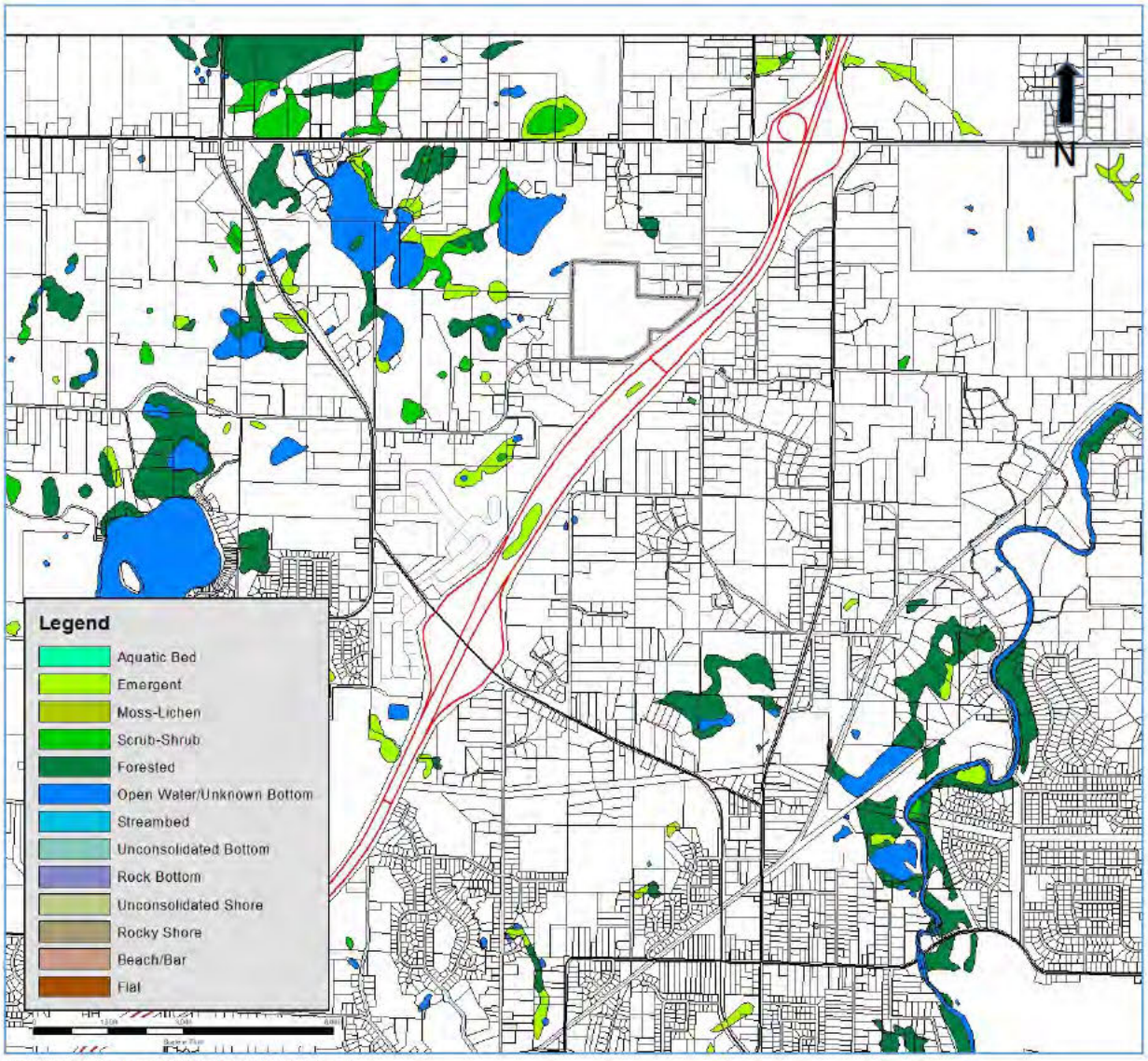


Figure 6 - National Wetland Inventory

2.3 GEOLOGY AND HYDROGEOLOGY

Several literatures and GIS data sources were reviewed to understand the regional geology. The primary sources of geological information are listed below:

- Summary of Hydrogeologic Conditions by County for the State of Michigan (Apple & Reeves, 2007);
- Water Resources of Grand Rapids Area, Michigan (Stramel, Wisler, & Laird, 1954);
- Hydrogeologic Atlas of Michigan: U.S. Environmental Protection Agency Underground Injection Control Program, Tech. rep., 35 plates, scale 1:500,000 (Western Michigan University, 1981);
- Quaternary Geology of Michigan (GIS Data) (Michigan Natural Features Inventory and MI Dept of Natural Resources, 1998), which was based on the Quaternary Geology of Southern Michigan and Quaternary Geology of Northern Michigan (Farrand & Bell, 1982);
- Bedrock Geology (GIS Data) (Michigan Department of Environmental Quality (MDEQ) - Geologic Survey Division, 1987);
- Wellogic -Statewide Wells (GIS Data) (Groundwater Inventory and Mapping Project, 2005).

2.3.1 Regional Quaternary Geology

Based on our literature review, overburden geology in Kent County consists of a thick sequence of Pleistocene glacial deposits. The thickness of glacial deposits ranges from 11 to 800 feet in Kent County, however, the majority of glacial deposits range from 200 to 400 feet in thickness (Western Michigan University, 1981). The glacial deposits in the county include till, outwash, and lacustrine deposits. Till occurs in end moraines and ground moraines (till plains), interspersed on the surface throughout the County (Stramel, Wisler, & Laird, 1954). The ground moraine (till plain) and end moraine belong to the unstratified group of deposits. Till is composed of fine to coarse-grained material, including silt, sand, gravel, and boulders; however, the majority of the till in Kent County is medium-grained (Farrand and Bell, 1982). The outwash and lake deposits belong to the stratified group of glacial deposits. Outwash is the most permeable of the glacial deposits, consisting of sand and gravel. Thin layers of lacustrine deposits were in the Grand Rapids area (Stramel, Wisler, & Laird, 1954). In the area, lacustrine deposits consist of clay and fine-grained sand, which may be underlain by sand and gravel.

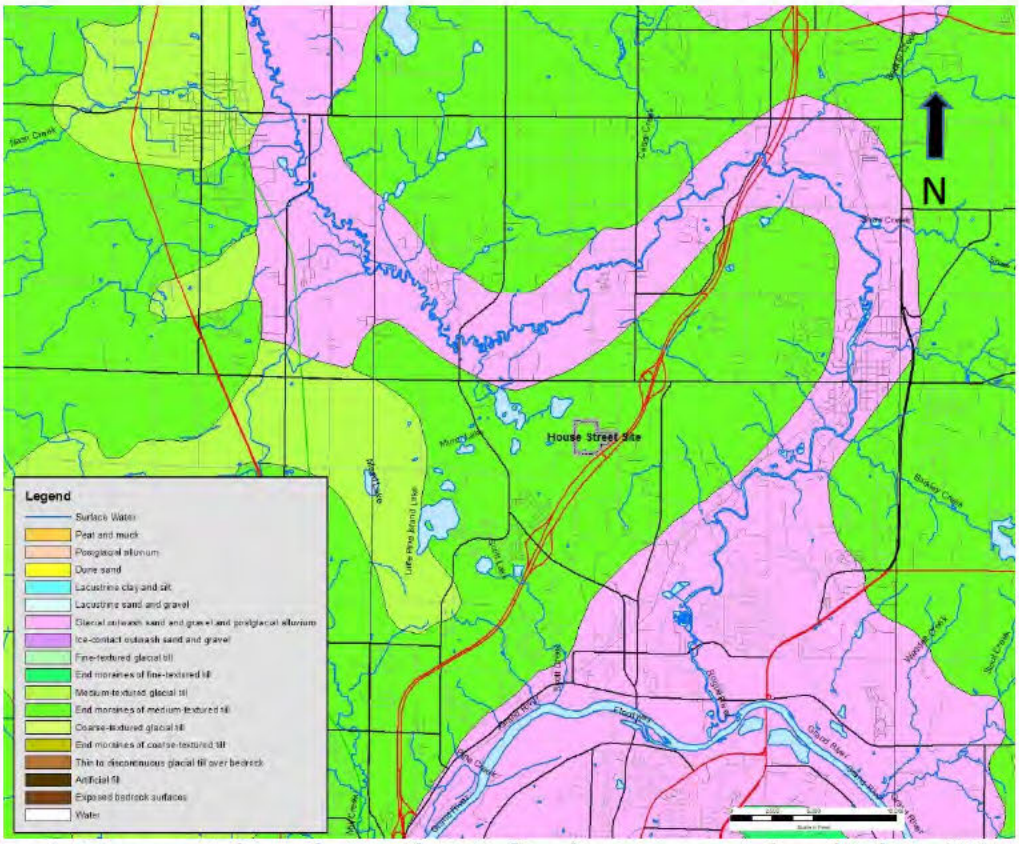


Figure 7 - Quaternary Geology at the Site and Vicinity [Based on Quaternary Geology of Michigan (GIS Data) (Michigan Natural Features Inventory and MI Dept of Natural Resources, 1998)]

As indicated in Figure 7, end moraines of medium-textured till are present at the Site and its vicinity; medium-textured glacial tills are present in the area west of the Little Pine Island Lake; glacial outwash sand and gravel and postglacial alluvium are present in the area along the Rogue River and the Grand River water courses.

2.3.2 Regional Bedrock Geology

Bedrock underlies the glacial drift. In the Grand Rapids area, bedrock beneath the drift are, from oldest to youngest, the Marshall formation, the Michigan formation, and the Bayport limestone, all of Mississippian age; the Parma sandstone and a very small area of outcrop of Saginaw formation, both of Pennsylvanian Age (Stramel, Wisler, & Laird, 1954). The regional dip is to the northeast. See Figure 8.

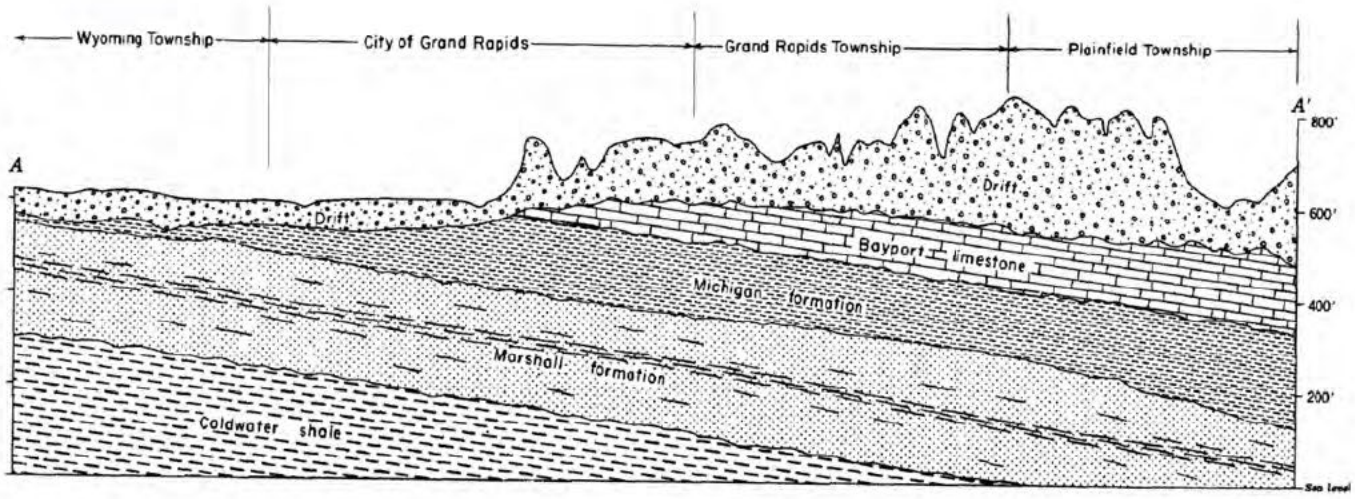


Figure 8 - Geological Cross, South to North from Wyoming Township to Plainfield Township (Stramel, Wisler & Laid, 1954)

The Jurassic "red beds" form the bedrock surface that underlie the glacial deposits in portions of Kent County. The "red beds" are often poorly consolidated or unconsolidated and consist primarily of clay, mudstone, siltstone, sandstone, shale, and gypsum. The "red beds" are of low permeability and are considered a confining unit. However, locally in the county, the "red beds" have been documented to supply small quantities of water (Apple & Reeves, 2007).

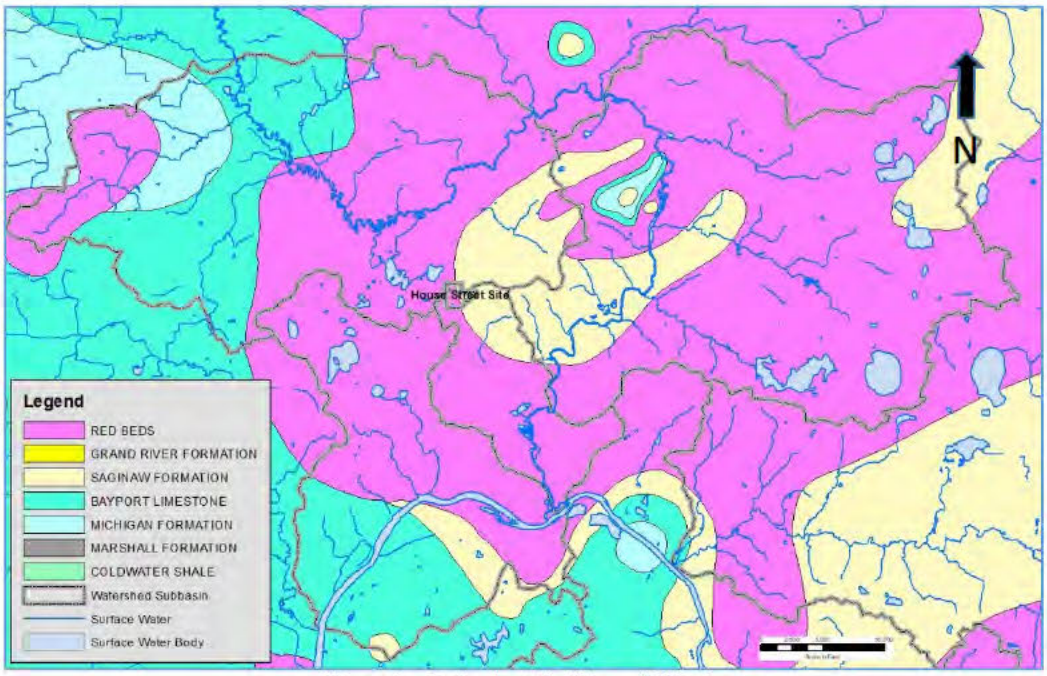


Figure 9 - Bedrock at the Site and Vicinity

Based on Bedrock Geology (GIS Data) (Michigan Department of Environmental Quality (MDEQ) - Geologic Survey Division, 1987) downloaded from MGDL, red beds are present in most of the Site area and its vicinity with some small areas of Saginaw Formation outcrop; Bayport Limestone and Michigan Formation are present to the southwest of the area (See Figure 9).

2.3.3 Well Logic Data Interpolation – Soil Stratigraphy

To determine regional geologic conditions, the Wellogic -Statewide Wells GIS Data for Kent County (Groundwater Inventory and Mapping Project, 2005) was downloaded from the MGDL to evaluate for glacial lithologies and top of bedrock surface. Geostatistical interpolation using kriging algorithm was utilized to create an approximate bedrock surface. The area of geostatistical modeling is focused on the area surrounded by the Rogue River to the north, northeast and east, the Grand River to the south, and the sub-basin divide to the west (See Figure 10).

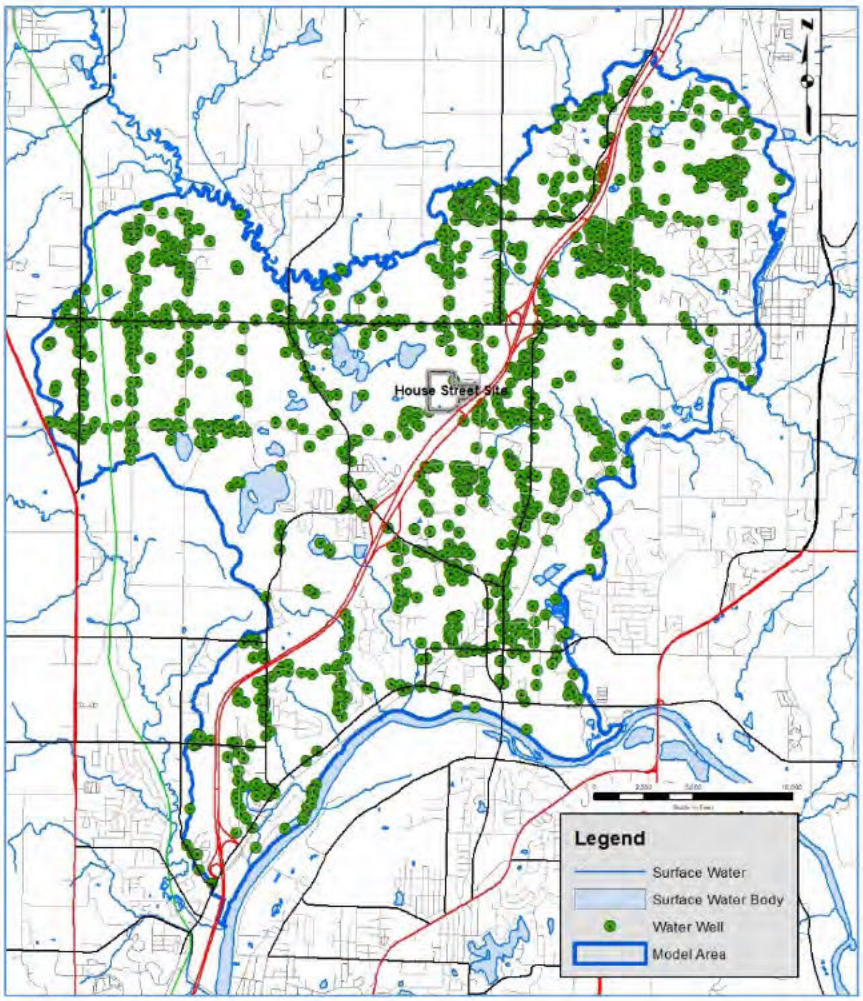


Figure 10 - Water Wells in the Model Area

To simplify the soil descriptions in the well logs, primary lithology was classified in the Wellogic GIS data file as follows:

AQ = aquifer material	MAQ = marginal aquifer material
CM = confining material	PCM = partially confining material

Upon review of the lithology data, the primary lithology in the Wellogic GIS data file was utilized for geostatistical analysis, but with some modifications: various bedrock lithology and classifications were grouped as one single class – bedrock; fine-grained materials, such as clay or silt, which were in some cases classified as PCM, were grouped as CM for geostatistical modeling. Boreholes with unknown lithology descriptions were excluded. The following table

summarizes the modified classifications and lithology descriptions from the Wellogic GIS data. In addition, for material legend, each modified class is provided with a generalized soil description.

Modified Class	Generalized Soil Description for Each Class	Primary Lithology from Wellogic Data
AQ	Sand or Gravel	Boulders; Cobbles; Gravel; Gravel & Boulders; Gravel & Cobbles; Gravel & Sand; Gravel & Stones; Sand; Sand & Boulders; Sand & Cobbles; Sand & Gravel; Sand & Stones; Stones
MAQ	Clayey Sand or Gravel	Gravel & Silt; Gravel Clay Sand; Loam; Sand & Silt; Sand Clay Gravel; Sand Clay Silt; Sand Gravel Clay; Silt Sand Gravel
PCM	Sandy Clay	Clay & Boulders; Clay & Cobbles; Clay & Gravel; Clay & Sand; Clay & Stones; Clay Gravel Sand; Clay Gravel Stones; Clay Sand Gravel; Gravel & Clay; Sand & Clay
CM	Clay or Silt	Clay; Clay & Silt; Hardpan; Silt; Silt & Clay
Bedrock	Bedrock	Granite; Gypsum; Limestone; Limestone & Sandstone; Sandstone; Sandstone & Limestone; Shale; Shale & Limestone; Shale & Sandstone

The soil classified as MAQ and PCM represents a mixture of fined grained soil, sand, gravel or cobbles, likely belonging to the till material described previously. The soil classified as CM represents fined grained soil, clay or silt, likely belonging to either the lacustrine deposit or fine-textured till. The soil classified as AQ represents sand, gravel, cobbles, likely belonging to the outwash group.

A cross section through several boreholes from northwest to southeast was created as shown in Figure 11 (the borehole colors symbolize the soil materials of the borehole top layers), and the cross section is shown in Figure 12.

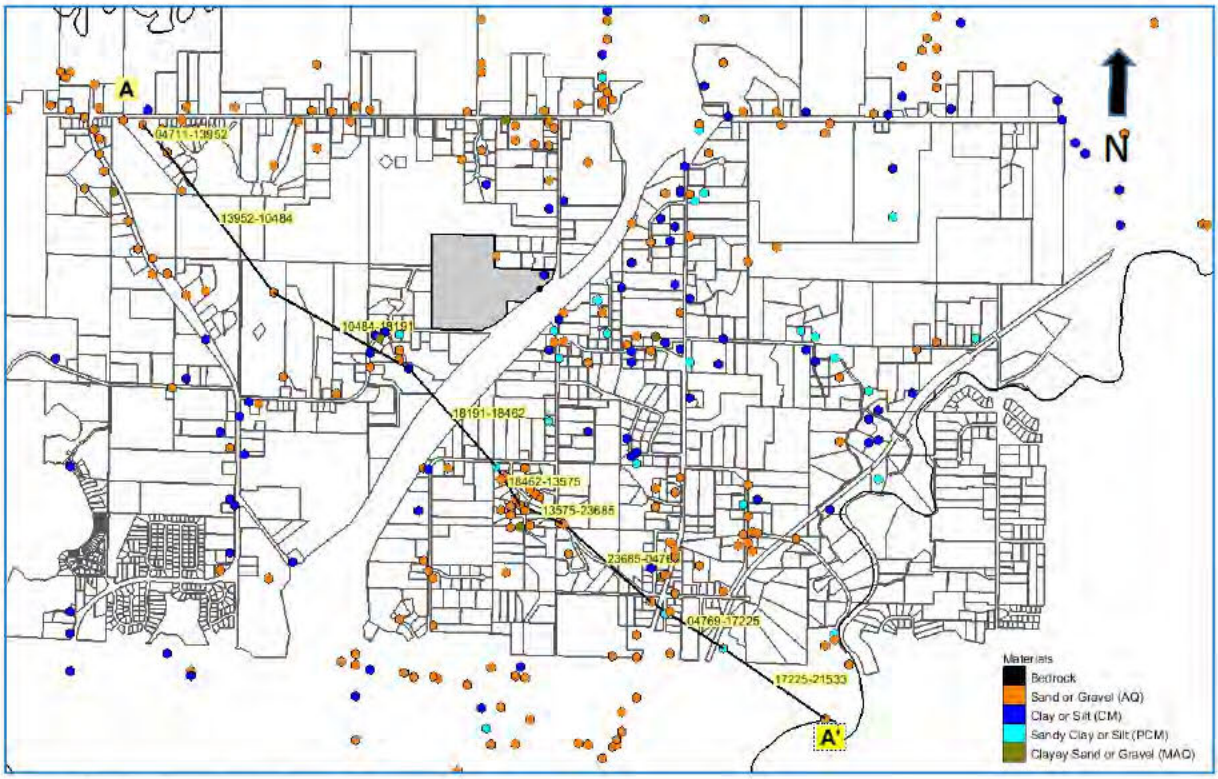


Figure 11 - Borehole Cross Section Location

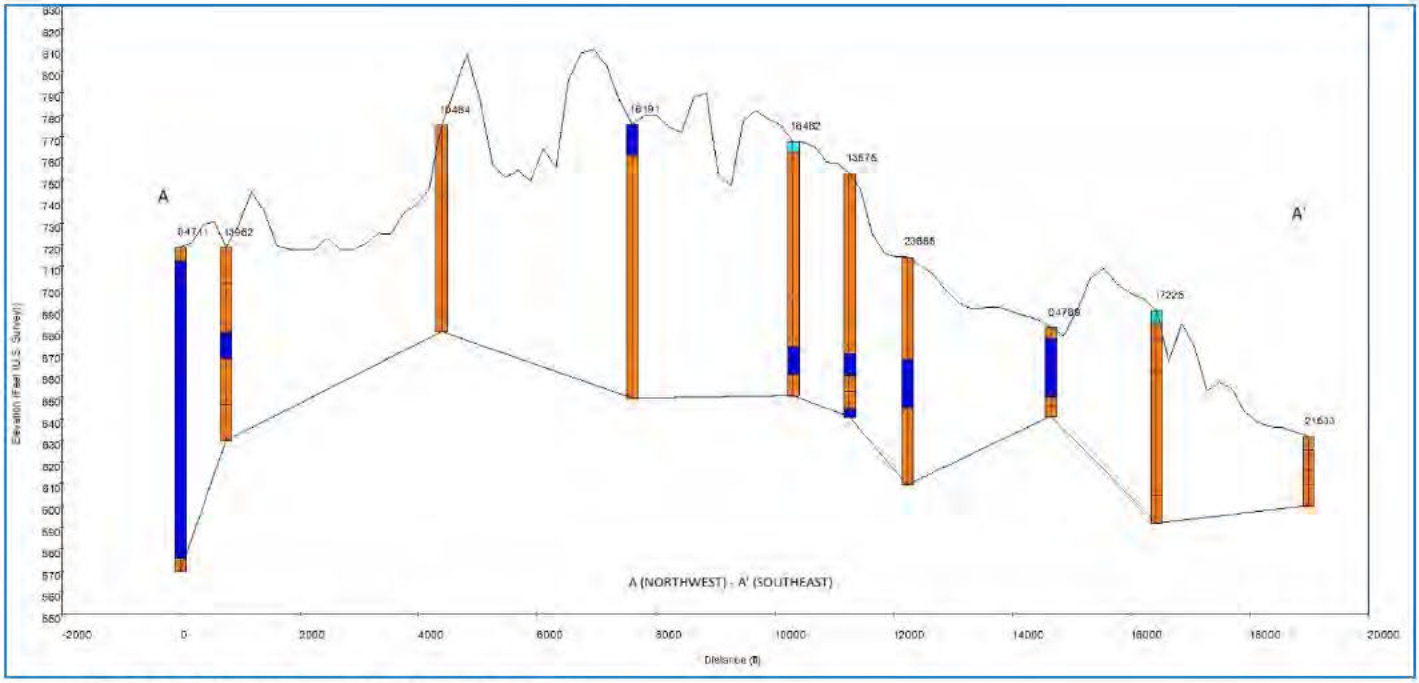


Figure 12 - Borehole Cross-Section (Northwest - Southeast)

The borehole cross section indicates a thick stratum of clay material at the northwest area, the presence of clay materials in several boreholes, and the presence of sand or gravel aquifer material in all the 10 boreholes.

The top of each lithology from each borehole, termed "contact", was assigned a horizon identification number based on their distributions horizontally and vertically. The horizons were used to create a material surface, representing top elevations of the stratum, using kriging algorithm for the model area, and the interpolated horizon surfaces were used to crease solids. A three-dimensional view of the solids is shown in Figure 13, and Figure 14 provides cross-sections of the interpolated solid.

As shown in Figure 13 and Figure 14, CM, PCM and MAQ materials are interspersed throughout the model area. Relatively thick stratums of CM, PCM materials are present in northwest areas (northwest ends of Sections A and B), northeast areas (Sections D, E and F) and southwest area (southwest ends of Section 1 and Section 2). AQ materials are present throughout the model area, with relatively greater thickness in southeast areas, as shown on southeast portions of Sections A and B, and the area running northwest to southeast through the Site (Section C).

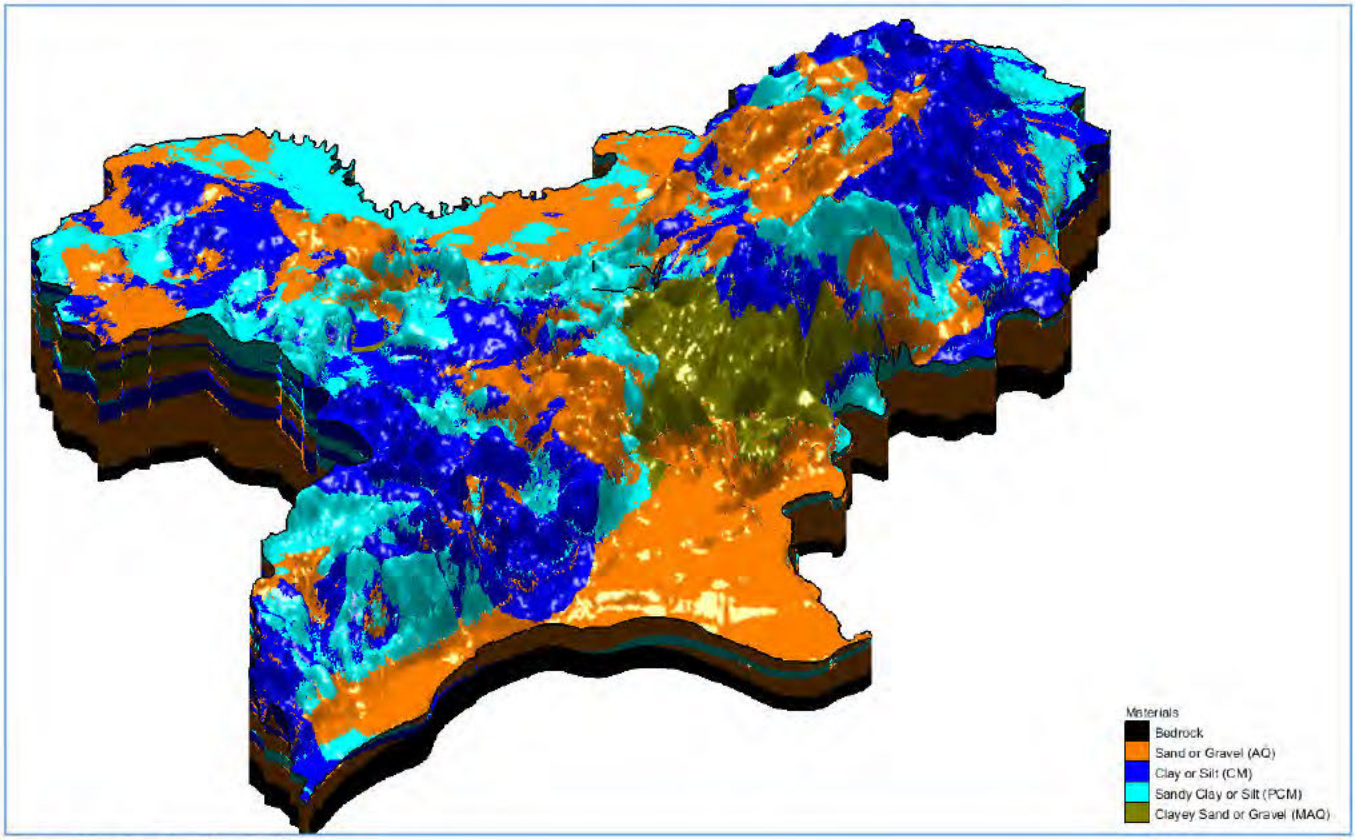


Figure 13 - Overburden Soil Solid

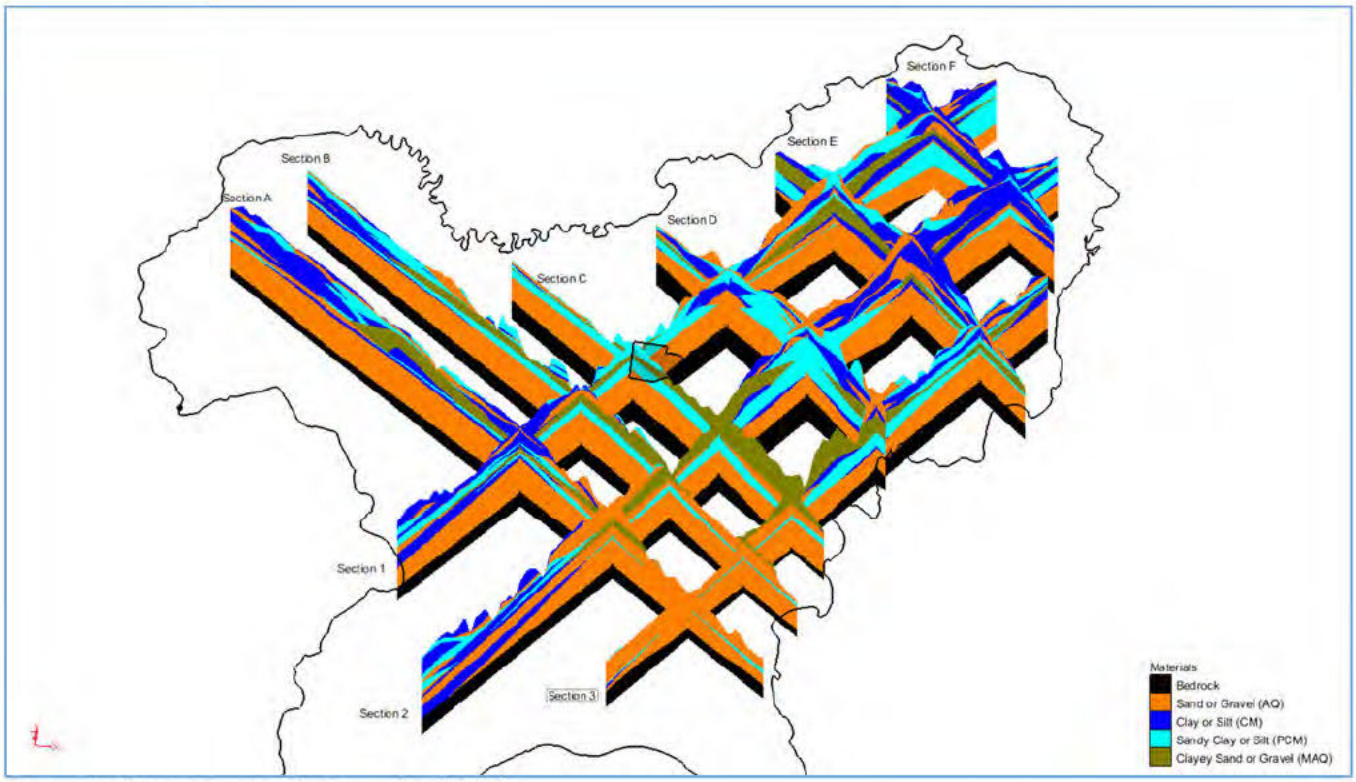


Figure 14 - Cross-Sections of the Interpolated Solid

2.3.4 Wellogic Data Interpolation – Top of Bedrock Elevation

Based on the recorded depth to top of bedrock in the Wellogic data file and the ground surface elevation data from USGS DEM GIS data downloaded from MGDL, the top of bedrock elevations were estimated, and elevation contours interpolated for the model area (See Figure 15).

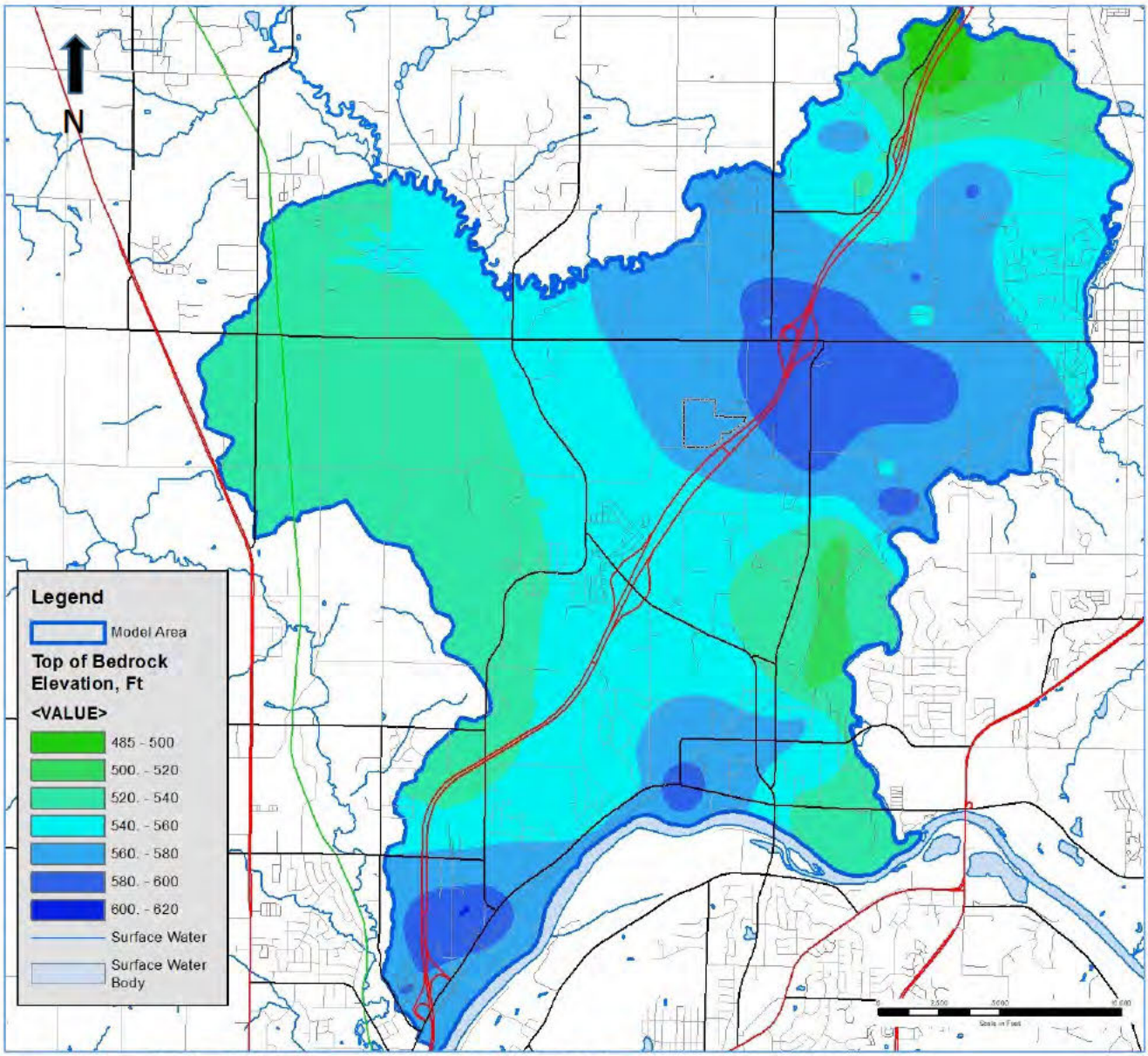


Figure 15 - Top of Bedrock Elevation Contours (Interpolated from Wellogic Data)

Top of bedrock elevations are greater than 540 feet in most of the model area, likely representing the areas of the "red beds" or outcrop Saginaw Formation; top of bedrock elevations in the remaining areas are less than 540 feet, likely representing the areas of Bayport Limestone or Michigan Formation. Top of bedrock elevations at the Site and its immediate vicinity range from 540 to 580 feet.

2.3.5 Regional Hydrogeology

This section discusses regional hydrogeology, consisting of groundwater flow direction, estimated hydraulic conductivity and transmissivity, and estimated groundwater velocity.

2.3.5.1 Groundwater Flow Direction

Based on the static water level data and the ground surface elevation data from USGS Digital Elevation Model (DEM) GIS data downloaded from MGDL, the regional groundwater elevations were estimated, and groundwater contours

interpolated for the model area. Groundwater flows from areas of relatively high groundwater elevations to lower elevations depicted in the following diminishing color order: red (highest elevations), orange, yellow, lighter green to darker green (lowest elevation). As shown in Figure 16, the groundwater flow pattern generally follows the topology in the region. Overall groundwater discharges to the Rogue River and the Grand River. Groundwater water elevations northeast of the Site and west of the Site are relatively high, causing groundwater flows from these two areas toward the Site. According to Figure 16, most of the groundwater at the Site area is expected to flow southwest for a relatively short distance, approximately 1,000 to 2,000 feet, then flow southeast toward the Rogue River. From the Site southeastward to the Rogue River, groundwater elevations change from approximately 720 feet at the Site to 630 feet near the southeast portion of the Rogue River, over a flow path line of approximately 12,000 feet, with an estimated hydraulic gradient of approximately 0.0075 foot/foot.

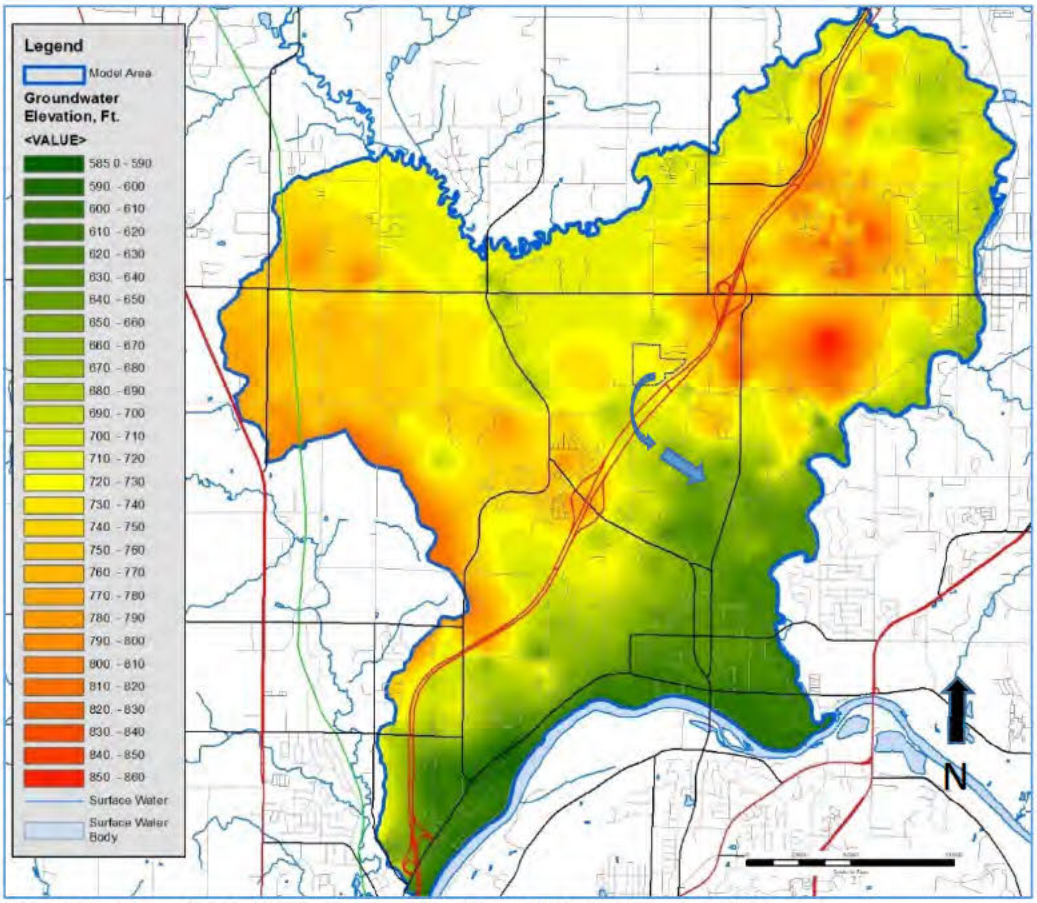


Figure 16 - Groundwater Contours Interpolated from Wellogic Water Level Data

From the Site to the north or northwest toward the Rogue River, the groundwater elevations change from approximately 720 to 718 feet over a possible flow path line of approximately 7,000 to 10,000 feet. The estimated hydraulic gradient ranges from approximately 0.0002 to 0.0003 foot/foot, which is very flat, indicating little groundwater, if any, flows to the north or northwest.

2.3.5.2 Estimated Hydraulic Conductivity and Transmissivity

Based on GIS data, Glacial Deposits -Estimated Transmissivity (Groundwater Inventory and Mapping Project, 2005), downloaded from MGDL, the estimated glacial transmissivity distribution is plotted for the model area (See Figure 17). According to the metadata, the transmissivity was estimated by multiplying the aquifer thickness by the estimated hydraulic conductivity for each well location, and then interpolated using a kriging algorithm. The hydraulic conductivity for each well location was estimated from the lithology index of each stratum, which was based on the

percentages of AQ, MAQ and PCM. As indicated in Figure 17, the transmissivity for most of the model area ranges from 900 to 5,000 square foot per day (ft^2/d).

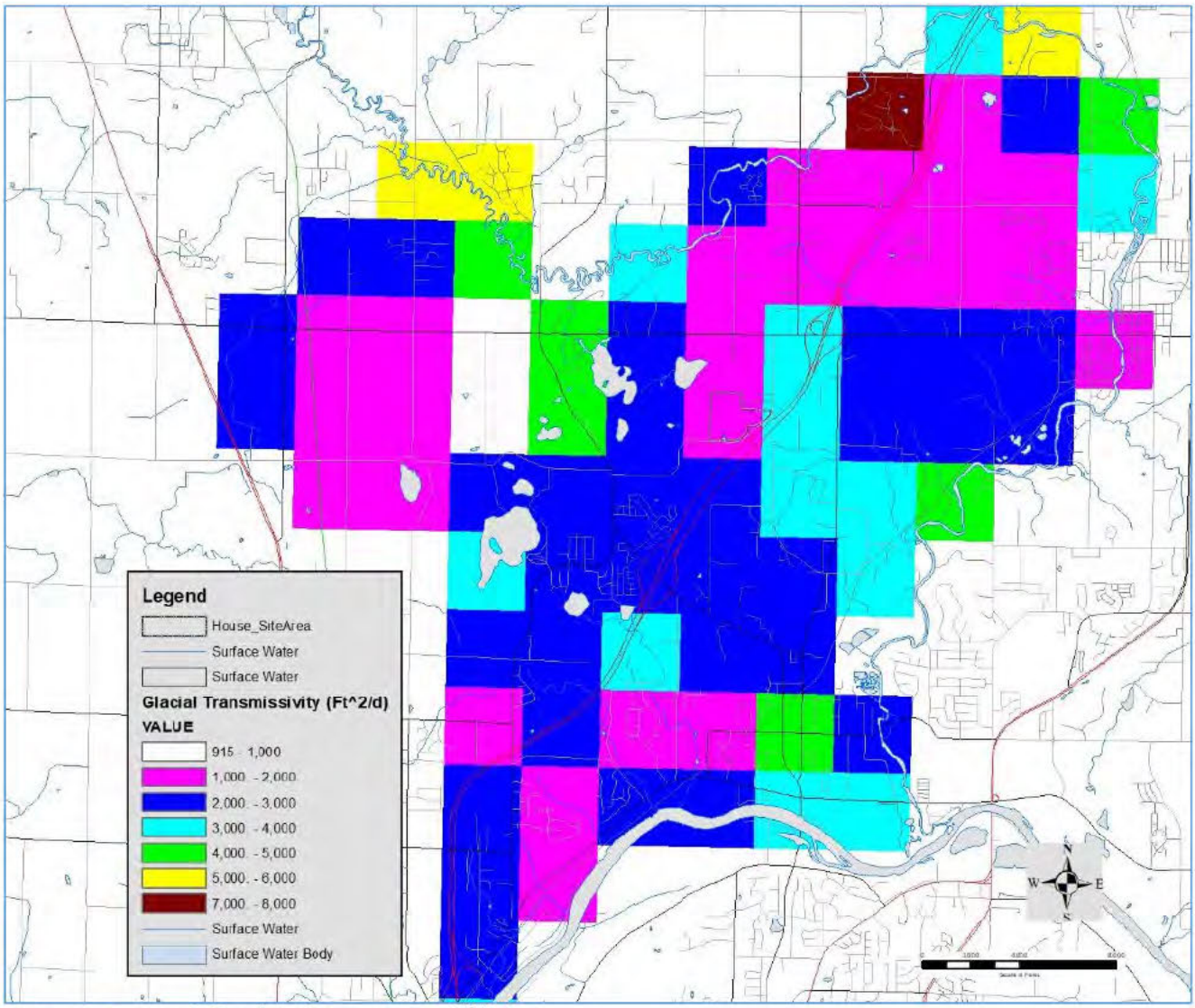


Figure 17 - Estimated Glacial Drift Transmissivity (ft^2/day)

Figure 18 provides a map of estimated horizontal hydraulic conductivity, which was interpolated from the estimated hydraulic conductivity values at individual well location. As indicated in the metadata, the estimated hydraulic conductivity at each well location was based on the typical hydraulic conductivity values for the various stratums in the entire saturated zone. Areas with lower hydraulic conductivity value indicate the presence of fine-grained soil in the saturated zone while areas with higher hydraulic conductivity generally indicates good aquifer materials, such as outwash sand and gravels.

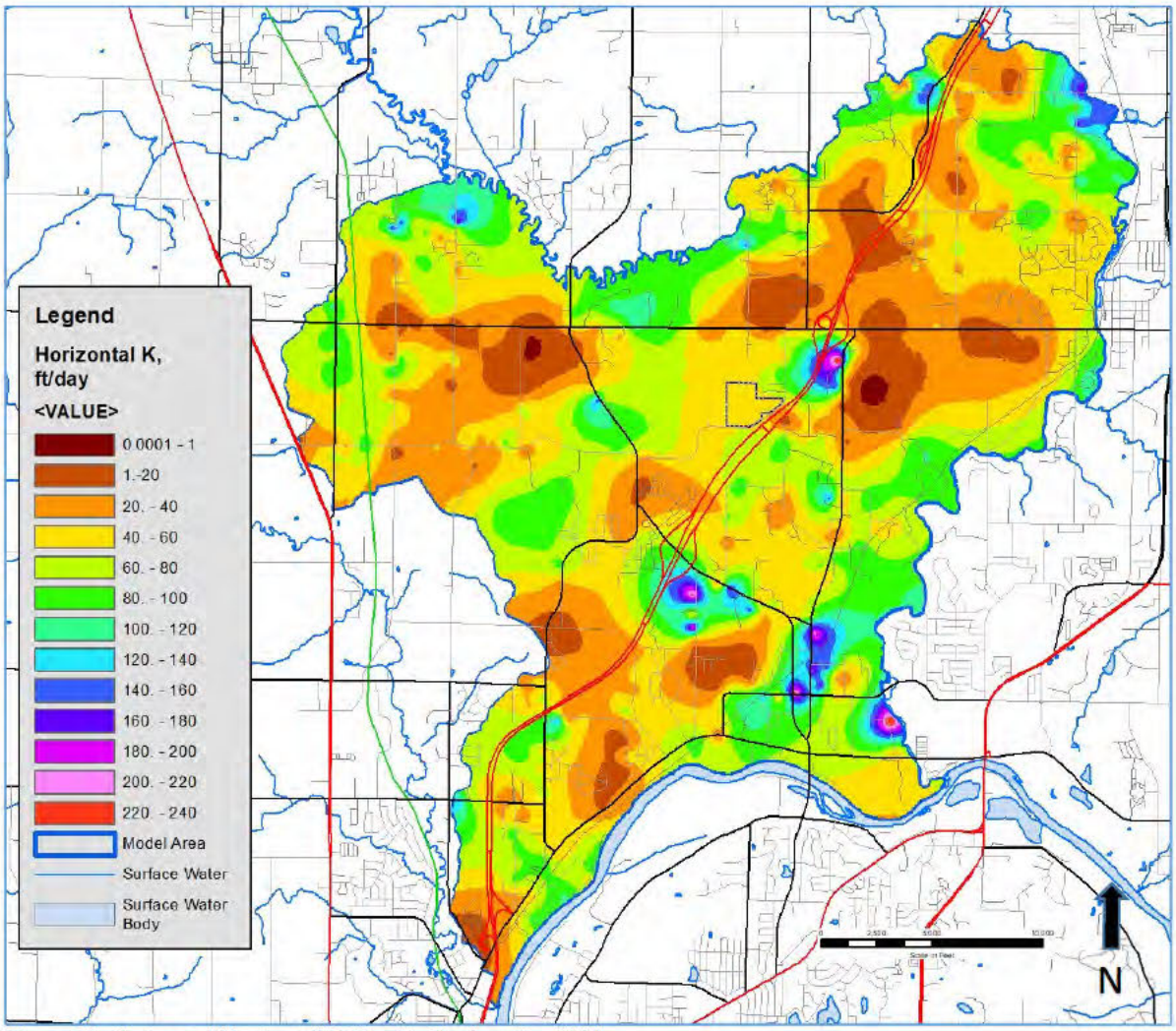


Figure 18 - Estimated Horizontal Hydraulic Conductivity (ft/d)

As shown in Figure 18, hydraulic conductivity varies from 20 to 120 feet per day (ft/d) for most of the model area, with a few small areas of lower or greater values. For the area from the Site to the southeast portion of the Rogue River, the hydraulic conductivity ranges from 40 to 80 ft/d.

2.3.5.3 Estimated Groundwater Seepage Velocity

Based on the estimated hydraulic gradient from the Site to the southeast toward the Rogue River, 0.0075 ft/ft, the range of hydraulic conductivity from 40 to 80 ft/d, and a literature effective porosity value of 0.3, the groundwater seepage velocity from the Site to the southeast portion of the Rogue River is estimated to range from approximately 1 ft/d to 2 ft/d, or 360 feet per year (ft/yr) to 730 ft/yr.

3.0 SITE CHARACTERIZATION

The regional information described above provides a preliminary understanding of the general nature and properties of Site conditions and was used as a basis for the development of the November 2017 RIWP. In the following sections, R&W/GZA provides an update of the CSM based on the data collected from the investigative activities at the Site as of January 30, 2018. In summary, the work implemented to characterize the Site includes the following:

- A review of historical use and characteristics of the waste placed on the Site;
- A review of relevant constituents within the waste, and their fate and transport characteristics in the subsurface;
- A soil boring program used to evaluate suspected on-Site sources;
- A drilling and monitoring well installation program to evaluate on-Site and off-Site geologic and hydrogeologic conditions;
- A groundwater monitoring program used to evaluate the presence and distribution of the relevant constituents in groundwater.

The work is described in the following sections.

3.1 OVERVIEW OF HISTORY AND USE

The approximately 76-arce Site was a licensed and regulated disposal facility from the mid-1960s through 1978, authorized by the State of Michigan. Prior to 1970, the Site received leather tanning byproducts over a period of time. The byproducts appear to have contained PFOS and PFOA, which are part of PFAS. PFAS were in 3M's Scotchgard™ applied to some leather manufactured at the tannery.

PFAS are used in a wide variety of industrial and commercial products such as textiles and leather products, metal plating, the photographic industry, photolithography, semi-conductors, paper and packaging (including food contact), coating additives, cleaning products, and pesticides. Because of their unique lipid- and water-repellent characteristics, PFAS are used as surface-active agents in various high-temperature applications and as a coating on surfaces that contact with strong acids or bases. PFOS and PFOA can be formed by environmental microbial degradation or by metabolism in larger organisms from a larger group of PFAS. PFOA and PFOS have been the most extensively studied PFAS. USEPA has published a lifetime drinking water health advisory of 70 ng/L (ppt) for combined PFOS and PFOA concentrations and MDEQ recently adopted the health advisory level as Part 201 generic groundwater cleanup criteria (Michigan Department of Environmental Quality, 2018).

Based on past investigation data at Wolverine's Tannery Site located at 123 Main Street, Rockford, Michigan, the byproducts also likely contained other hazardous substances including volatile organic compounds (VOCs), semi-volatile organic compounds (SOVCs), and select inorganic compounds. Considering the emerging status of PFOS and PFOA, our review of physical and chemical properties is focused on PFOS and PFOA.

3.2 PROPERTIES OF PFOS AND PFOA

This section provides a summary of our literature review of the properties of PFOA and PFOS. The following sources were summarized:

- US Environmental Protection Agency (USEPA) Fact Sheet, PFOA & PFOS Drinking Water Health Advisories (USEPA, 2016);
- USEPA Fact Sheet, Emerging Contaminants – Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA) (USEPA, 2014);
- Perfluorinated Chemicals (PFCs): Perluorooctanoic Acid (PFOA) & Perfluorooctane Sulfonate (PFOS) Information Paper (The Association of State and Territorial Solid Waste Management Officials (ASTSWMO), 2015);
- Assessment, Management and Remediation for PFOS and PFOA, Part 1 through Part 5 (CRC CARE, 2017); and,

- Groundwater and PFAS: State of Knowledge and Practice (National Ground Water Association, 2018).

3.2.1 Physical and Chemical Properties

As shown in Table 2, due to the strength of the carbon-fluorine bonds, PFOS and PFOA are stable chemicals. PFOS and PFOA are relatively soluble in water. They are stable to hydrolysis in the environment as demonstrated by their persistence in groundwater and surface waters. As the reported organic-portioning coefficient (Koc) indicates, they have been found to partition from the groundwater column into organic matter rich sediments and soil particles due to their propensity to sorb to natural organic matter. PFOA is relatively less strongly sorbed than PFOS. Both PFOS and PFOA have low volatility.

Table 2 - Physical and Chemical Properties of PFOS and PFOA (USEPA, 2014)

Property	**PFOS (Potassium Salt)**	**PFOA (Free Acid)**
Chemical Abstracts Service (CAS) Number	2795-39-3	335-67-1
Physical Description (physical state at room temperature and atmospheric pressure)	White powder	White powder/ waxy white solid
Molecular weight (g/mol)	538	414
Water solubility at 25°C (mg/L)	550 to 570 (purified), 370 (fresh water), 25 (filtered sea water)	9.5 X 10^3(purified)
Melting Point (°C)	> 400	45 to 54
Boiling point (°C)	Not measurable	188 to 192
Vapor pressure at 20 °C (mm Hg)	2.48 X10^{-6}	0.017
Octanol-water partition coefficient (log K_{ow})	Not measurable	Not measurable
Organic-carbon partition coefficient (log K_{oc})	2.57 (Value estimated based on anion and not the salt)	2.06
Henry's law constant (atm-m^3/mol)	3.05 × 10^{-9}	Not measurable
Half-Life	Atmospheric: 114 days Water: > 41 years (at 25° C)	Atmospheric: 90 days Water: > 92 years (at 25° C)

Table 3 provides a comparison the properties of PFOS and PFOA to those of other common chemicals such as toluene and tetrachloroethylene (PCE). As shown in Table 3, PFOS and PFOA are far less volatile and maybe are more prone to sorption than other common contaminants (National Ground Water Association, 2018). As an example, values of Koc for PFOS range from 229 to 6310 while values of Koc for toluene is approximately 180 L/kg, indicating the retardation factor resulting from adsorption/desorption process for PFOS is expected to be greater than that of toluene. PFOA should be more mobile than PFOS. The retardation factor for PFOA is expected to be similar to toluene.

Generally, shorter PFAS are more mobile in groundwater and will leach from soil to groundwater at a faster rate. This results in shorter-chain PFAS at the leading edge of a groundwater plume. Other factors affecting PFAS sorption in the subsurface include, but not limited to: characteristics of the aquifer matrix (e.g., organic carbon content and surface charge); and co-contaminant interference at sorption sites.

Table 3 - Comparison of PFOA and PFOS Properties to Other Organic Compounds (National Ground Water Association, 2018).

Property	**PFOS**	**PFOA**	**Toluene[1]**	**PCE**
Water Solubility (mg/L)	370 (freshwater); 550 to 570 (purified water)	9,500 (purified water)	526	162
Vapor Pressure @20°C (mm Hg)	2.48 x 10^{-6}	0.017	28	25

Property	PFOS	PFOA	Toluene[1]	PCE
Koc (L/Kg)	229 to 6310	130 to 203	180	300
Half-life (years)	>41	>92	< 1	23

Note: 1-Solubility and Koc of toluene were based on MDEQ Part 201 Rules, December 2013; Vapor pressure and half life value for toluene were based on (Howard, 1991).

3.2.2 Fate and Transport in the Environment

Due to their stability and persistence, PFOS and PFOA can be transported relatively long distances. The primary transport mechanisms include advective groundwater flow velocity, hydrodynamic dispersion and adsorption and desorption. Lateral hydrodynamic dispersion is expected to be relatively limited due to the presence of groundwater flow from either sides of the flow path and the relatively fast groundwater seepage velocity longitudinally. Adsorption has the potential to remove PFOS and PFOA from aqueous solution, and hence reduce the total contaminant mass migration rate in water. The partitioning of PFOS and PFOA between water, soil and sediment is complex, with numerous factors influencing partitioning such as the strength of bonds, solubility, solution ionic composition, organic content and pH.

Given the transport distances and its general movement with bulk groundwater, PFOS and PFOA can be transported to surface waters. PFOS and PFOA have also been shown to be persistent in the aquatic environment with potential to adsorb to particulate matter. As previously mentioned, with the Henry's Law Constant for PFOS being very low, volatilization from water to air is not an influencing factor.

As we consider the chemical properties of the PFOS and PFOA and their presence within waste deposited at the Site, it is also important to consider the hydrologic and geologic setting. The waste was placed within shallow glacial deposits. The mobility of constituents in the waste is affected by precipitation, surface run-off, evapotranspiration, soil-moisture retention, fraction organic carbons in the soil, the presence of other chemicals in the soil and soil permeability.

In consideration of Site conditions and chemical characteristics, the following transport and migration mechanisms are likely at the Site:

- infiltration of precipitation into surficial soil and some uptake of the infiltrated water by vegetation or retained in soil pore space;
- Infiltrated waters will mobilize constituents from waste residuals to underlying unsaturated soil with some degree of adsorption and desorption occurring;
- Infiltrated water reaches saturated zone, undergoing mixing, and dilution, and then transport with groundwater flow.

3.2.3 Regulatory Guidelines

The following table provides a summary of USEPA and MDEQ regulatory guidelines:

Regulatory Guidelines	PFOS	PFOA
USEPA Health Advisory Levels for Drinking Water	70 ng/l (combined)	

Regulatory Guidelines	PFOS	PFOA
Part 201 Residential Groundwater Criterion Protective of Drinking Water (Michigan Department of Environmental Quality, 2018)	70 ng/l (combined)	
Part 201 Groundwater Surface Water Interface (GSI) Criteria (Michigan Department of Environmental Quality, 2018)	12 ng/l	12,000 ng/l
Proposed Part 201 Residential Soil Screening Level Protective of Drinking Water (Michigan Department of Environmental Quality, 2017)	1,400 ng/kg	59,000 ng/kg
Proposed Part 201 Residential Soil Screening Level Protective of Direct Contact (Michigan Department of Environmental Quality, 2017)	2,100,000 ng/kg	2,100,000 ng/kg
MDEQ Rule 57 Surface Water Human Health Non-Cancer Risk, Non-Drinking Water Value (Michigan Department of Environmental Quality, 2016)	12 ng/l	12,000 ng/l
MDEQ Rule 57 Surface Water Human Health Cancer Risk, Non-Drinking Water Value	Not Available	Not Available
MDEQ Rule 57 Surface Water Final Chronic Value (FCV) (Michigan Department of Environmental Quality, 2016)	140,000 ng/l	880,000 ng/l
MDEQ Rule 57 Surface Water Final Acute Value (FAV) (Michigan Department of Environmental Quality, 2016)	1,600,000 ng/l	15,000,000 ng/l
MDEQ Rule 57 Surface Water Aquatic Maximum Value (AMV) (Michigan Department of Environmental Quality, 2016)	780,000 ng/l	7,700,000 ng/l

3.3 PROPERTIES OF INORGANICS, VOCS AND SVOCS

For VOCs and SVOCs, the fate and transport mechanisms in unsaturated zone include infiltration-driven leaching, volatilization, aerobic or anaerobic biodegradation by microorganisms in subsurface, adsorption to or desorption from soil matrix; once reaching groundwater table, VOCs or SVOCs are expected to undergo mixing and dilution in groundwater, and transport with groundwater flow. In saturated zone, the primary fate and transport mechanisms include groundwater advection, hydrodynamic dispersion, adsorption and desorption, and biodegradation. Lateral hydrodynamic dispersion is expected to be relatively limited due to the presence of groundwater flow from either sides of the flow path and the relatively fast groundwater seepage velocity longitudinally. Transport mechanisms for inorganic compounds and elements are expected to be similar, except they are not expected to be readily biodegraded. Except for elemental mercury and organomercury compounds, metals are not volatile in typical environmental conditions.

The adsorption or desorption process for organic compounds is due to carbon bonding between carbons in the chemicals and fraction organic carbon on soil matrix while for metals, adsorption or desorption is primarily due to ion exchange or precipitation reaction. The following table provides a summary of MDEQ Part 201 default physical and chemical properties (Michigan Department of Environmental Quality, 2013) for the compounds detected in the source area at concentrations exceeding the Part 201 Residential Soil Cleanup Criteria.

Table 4 - Physical and Chemical Properties for Constituents Detected at Source Area at Exceeding Concentrations (MDEQ Part 201 Rules, December 2013))

Parameters	Physical State at Standard Temperature and Pressure	Molecular Weight	Henry's Law Constant at 25°C	Water Solubility	Soil Organic Carbon-Water Partition Coefficients for Organic Compounds	Soil-Water Distribution Coefficients for Inorganic Compounds at pH=6.8
Symbol/Unit	Symbol	MW	HLC	S	Koc	Kd
	unitless	g/mol	atm-m^3/mol	ug/L	L/kg	L/kg
Metals						
Chromium (III)	Inorganic	51.996	NR	NA	NR	1.80E+06
Chromium (VI)	Inorganic	51.996	NR	NA	NR	19
Copper	Inorganic	63.546	NR	NA	NR	360
Lead	Inorganic	207.2	NR	NA	NR	11,000
Mercury (Total)	Inorganic	200.59	7.10E-10	56	NR	52
Zinc	Inorganic	65.39	NR	NA	NR	62
VOCs						
n-Butylbenzene	Liquid	134.22	NA	NA	20,200	NR
sec-Butylbenzene	Liquid	134.22	NA	NA	31,100	NR
t-Butylbenzene	Liquid	134.22	NA	NA	11,000	NR
Tetrachloroethylene	Liquid	165.83	1.84E-02	2.00E+05	156	NR
Tetrahydrofuran	Liquid	72.12	9.63E-03	1.00E+09	2.83	NR
Toluene	Liquid	92.14	6.64E-03	5.26E+05	180	NR
1,1,1-Trichloroethane	Liquid	133.4	1.72E-02	1.33E+06	110	NR
Trichloroethylene	Liquid	131.39	1.03E-02	1.10E+06	168	NR
1,2,4-Trimethy benzene	Liquid	120.2	5.87E-03	55,890	965	NR
1,3,5-Trimethy benzene	Liquid	120.2	7.38E-03	61,150	708	NR
SVOCs						
Nitrobenzene	Liquid	123.11	2.40E-05	2.09E+06	64.4	NR

Note: "NR" denotes not relevant; "NA" denotes not available.

These values suggest trivalent chromium and lead are not expected to leach through unsaturated soil or readily migrate in groundwater. The alkyl-benzene compounds are predicted to be less mobile than PFOA, but more mobile than trivalent chromium and lead.

3.4 SITE INVESTIGATION ACTIVITIES

The subsurface investigation of the Site included two tasks: the assessment of suspected waste disposal areas; and the evaluation of geologic and hydrogeologic conditions and potential impacts in soil and groundwater. The work described in the RIWP is in progress. The following sections provide a summary of the work completed as of January 30, 2018.

3.4.1 Source Area Investigation

To further understand the location and characteristics of source-area impacts on the Site, RW/GZA interpreted historical aerial photographs downloaded from the following sources: Kent County GIS data portal, Kent County

USDA Soil Conservation Office, and historical Wolverine's files relating to the Site. Based on this research, potential disposal areas were identified, and soil borings were proposed in the RIWP. RW/GZA retained Stearns Drilling Company of Dutton, Michigan (Stearns) to perform subsurface exploration at the potential source areas from November 27 to December 1, 2017. Based on RW/GZA's field observations, soil borings locations were adjusted to be better positioned within the former disposal areas indicated by topography. Stearns utilized a hollow-stem auger to perform soil borings at sixteen locations, WB-1 through WB-16, at the Site.

See the following figure for the potential disposal areas based on the aerial photographs and the locations of the soil borings. See **Appendix B** for the boring logs.

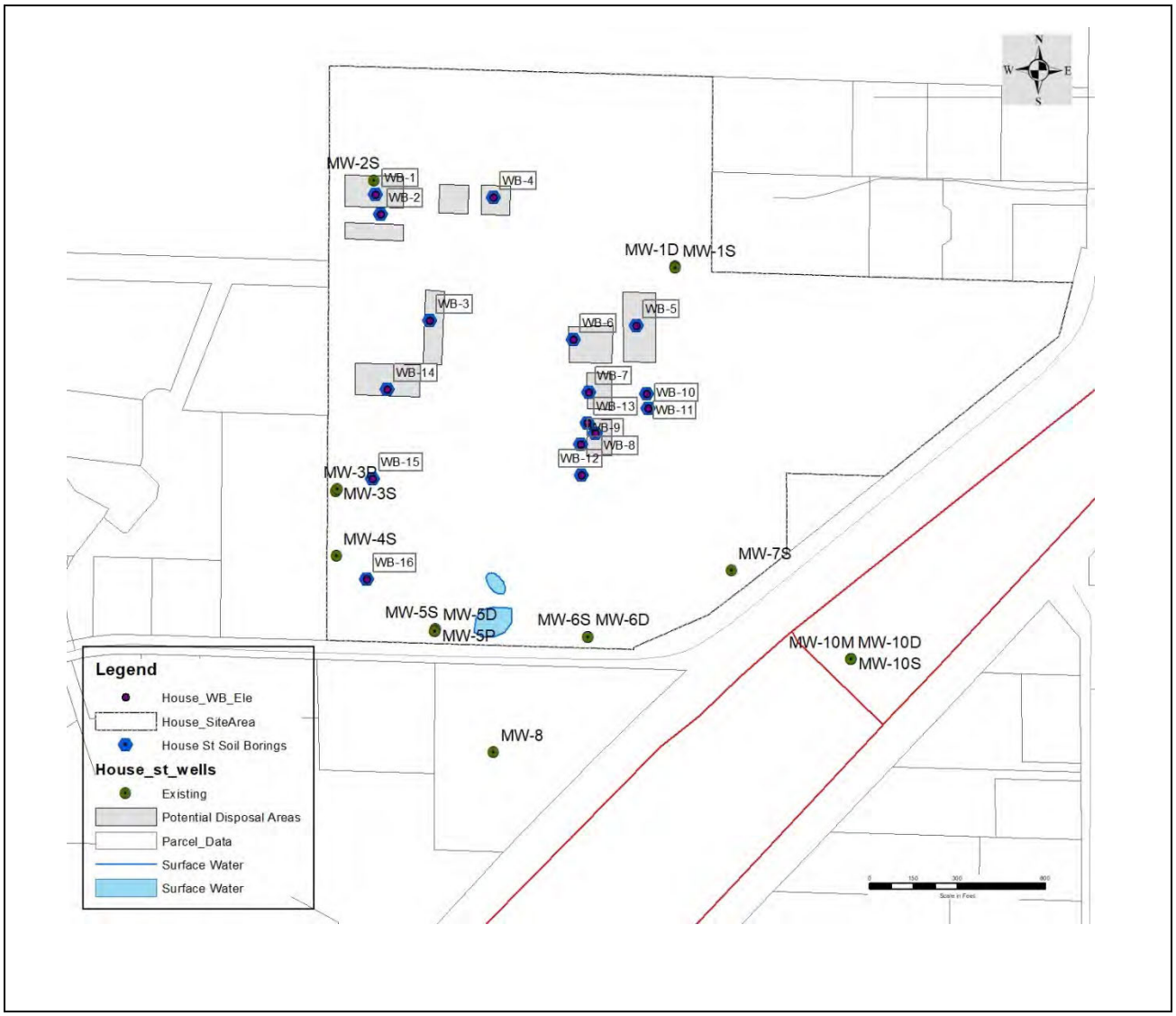


Figure 19 - On-Site Soil Boring Location Plan

A 4.25-inch inside diameter auger was advanced, and split-spoon soil samples were collected at 2-foot intervals from the ground surface to the borehole terminal, ranged from 10 to 20 feet. The soil samples were field screened using a MiniRAE 2000 Photo Ionization Detector (PID). Waste-like waste materials were observed at locations WB-1, WB-2, WB-4, WB-5, WB-11, and WB-14. Samples were collected from the waste, and soil samples were also collected from

deeper intervals at these boreholes. The following table provides a summary of the samples collected for laboratory analysis.

Sample Names	Sample Interval, feet below ground surface	Soil Observation
WB-11A	2.8 to 5.6	Waste
WB-11B	9.0 to 9.6	Soil
WB-4A	8.3 to 10.7	Waste
WB-4B	14.0 to 15.8	Soil
WB-1A	4.6 to 14.3	Waste
WB-1B	16.3 to 17.9	Soil
WB-2A	7.1 to 10.7	Waste
WB-2B	14.0 to 15.8	Soil
WB-14A	7.3 to 10.6	Waste
WB-14B	15.0 to 16.0	Soil

The soil samples were submitted to ALS Environmental – Kelso Laboratory of Kelso, Washington (ALS) for PFAS analysis using Environmental Protection Agency (EPA) Method 537 Rev. 1.1, modified (Method PFC/537M), and to Bio-Chem Laboratories of Grand Rapids, Michigan (BIO-CHEM) for the following analyses: Michigan 10 metals and hexavalent chromium using EPA SW846 Method 6000/7000 Series; volatile organic compounds (VOCs) using EPA SW846 Method 8260B; and semi-volatile organic compounds (SVOCs) using EPA SW846 Method 8270C. The analytical data for the above soil samples are summarized in Table A. The following subsections provide a discussion of the source soil analytical data.

3.4.2 Subsurface Exploration and Monitoring Well Installation

RW/GZA retained Stearns Drilling Company of Dutton, Michigan (Stearns) to perform subsurface exploration and monitoring well installation at the Site and on the Michigan Department of Transportation (MDOT) property immediately south of the Site from September 5 to November 28, 2017. Stearns utilized a hollow-stem auger to perform soil borings at seven locations, SB-1 through SB-7, at the Site. To date, twelve (12) permanent monitoring wells were installed at these seven locations at the Site. Shallow and deep well clusters were installed at soil boring locations SB-1, SB-3, SB-5, and SB-6. Soil boring logs and monitoring well construction details are provided in **Appendix A**.

Upon obtaining site access, drilling and well installation was also performed at four locations, MW-8, MW-9, MW-10, and MW-11. MW-8 is located on a parcel owned by MDOT, immediately south of the Site, and MW-9, MW-10, and MW-11 are located within the US-131 right-of-way. Ten (10) permanent monitoring wells were set at the four locations. Shallow and deep well clusters were installed at monitoring well locations MW-9, MW-10, and MW-11. See the following figure for the location of the wells.

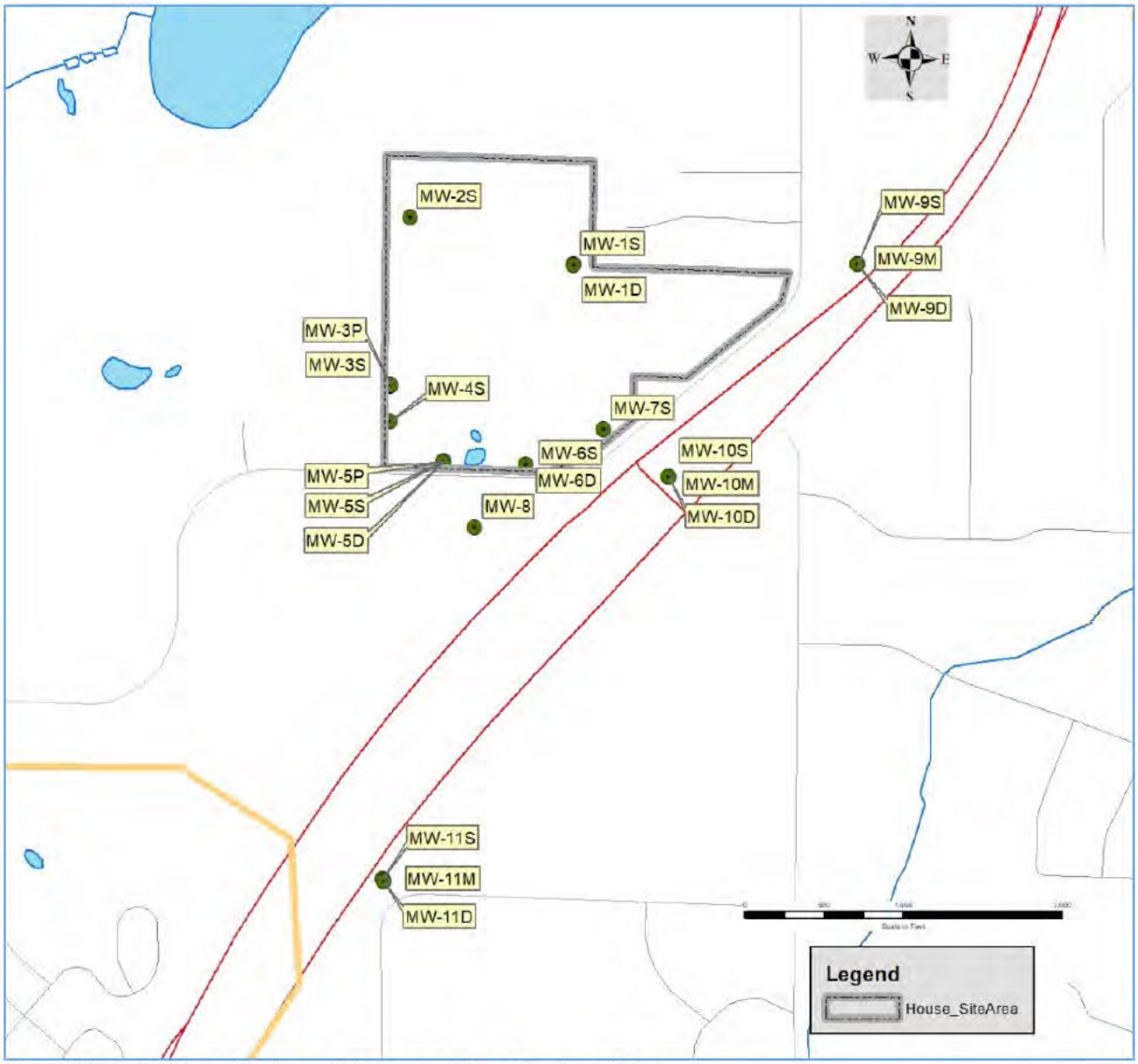


Figure 20 – Groundwater Monitoring Well Location Plan at the Site and Vicinity

Stearns utilized a 4.25-inch inside diameter hollow stem auger to advance soil borings. Split-spoon soil samples were collected at 2-foot intervals from the ground surface to the borehole terminus. A R&W/RW/GZA geologist was present to observe and log the soil samples. The soil samples were field screened using a MiniRAE 2000 Photo Ionization Detector (PID). Monitoring wells were constructed of 2-inch diameter PVC, with a 5-foot wire-wrapped PVC screen, and threaded joints. The screened intervals were backfilled with a filter sand pack to approximately 2 to 4 feet above the top of the screen. An approximately 2-foot-thick bentonite seal was then installed, and the balance of the boring was backfilled with cement/bentonite grout. The wells were finished with well caps and lockable steel protective covers set in concrete.

The monitoring wells were developed by surging and pumping with a submersible pump. Following well development, the new monitoring wells were surveyed. Surveyed elevations included top of well casing, ground surface elevation, and top of protective casing. The following table summarizes well construction and survey data.

Table 5 - Summary of Monitoring Well Construction and Survey Data

Borehole Name	Well Number	Top of Casing Elevation	Ground Surface Elevation, Ft.	Screen Depth Interval, Ft.	Depth to the Bottom of well, Ft.
SB-1	MW-1S	790.73	788.7	68.4-73.1	75.0
SB-1	MW-1D	791.01	788.8	170.1-174.7	175.0
SB-2	MW-2S	799.66	797.6	78.5-83.1	83.4
SB-3	MW-3P	790.07	787.5	19.0-24.0	25.0
SB-3	MW-3S	790.62	788.1	69.7-74.6	75.1
SB-4	MW-4S	784.88	782.3	71.1-75.7	76.0
SB-5	MW-5P	781.45	778.9	17.1-21.8	22.3
SB-5	MW-5S	781.61	778.8	61.9-66.6	67.1
SB-5	MW-5D	781.84	779.1	188.0-198.0	198.5
SB-6	MW-6S	772.76	770.3	57.1-61.8	62.3
SB-6	MW-6D	773.33	770.6	155.0-160.0	162.0
SB-7	MW-7S	791.09	788.9	70.1-74.7	75.0
SB-8	MW-8	745.09	742.2	27.7-32.7	36.0
SB-9	MW-9S	820.20	817.8	26.0-31.0	31.0
SB-9	MW-9M	820.66	817.9	126.0-131.0	131.0
SB-9	MW-9D	820.88	818.2	203.0-208.0	220.0
SB-10	MW-10S	780.06	777.2	49.0-59.0	60.0
SB-10	MW-10M	780.64	777.7	125.0-130.0	131.0
SB-10	MW-10D	780.94	778.1	185.0-190.0	192.0
SB-11	MW-11S	744.78	742.1	21.0-31.0	31.5
SB-11	MW-11M	744.96	742.3	95.0-100.0	100.0
SB-11	MW-11D	744.75	742.1	150.0-155.0	162.0

3.5 SITE INVESTIGATION RESULTS

The results of the field observations and data collection activities for the Site source area and the nearby off-Site soil borings and monitoring wells are presented below. The analytical results are provided in independent sections grouped by chemical class analyzed.

3.5.1 Site Geologic and Hydrogeologic Conditions

Based on observations made at the 11 exploration locations described above, the Site is underlain by approximately 200 feet of unconsolidated glacial deposits. The near surface conditions encountered in the boring WB-1 to WB-16, which were used to characterize source area waste and soils, included sequences of fill materials that extend from approximately five to 15 feet below ground surface. The fill materials tend to range from clay and silt to sand with varying thickness of waste. The glacial deposits encountered reflect the character of ice-margin glacial deposits consisting of sand with sequences of clay and silt occurring in the upper portion of the section. In general, fine to medium sand predominates in most of the soil borings. The presence and thickness of clay and slit deposits vary horizontally and vertically without strong correlation between boring logs. A generalized depiction of subsurface geologic conditions is shown in cross-section in the figure below, which extends form SB-5/MW-5 in the southwestern portion of the Site, through WB-12, WB-9, WB-13, WB-7 and WB-6, and terminates at SB/MW-1 in the northwestern portion of the Site.

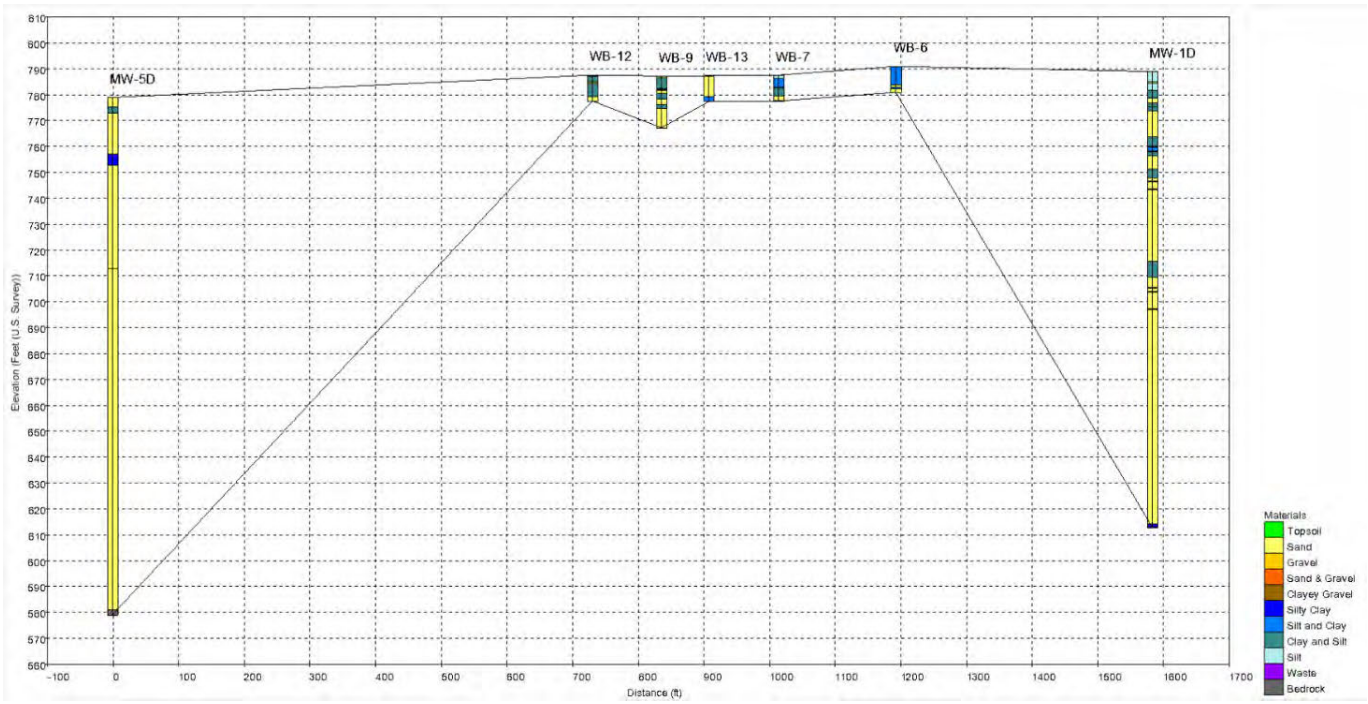


Figure 21 - Cross Section MW-5D to MW-1D

The depth to static groundwater is approximately 50 to 60 ft bgs. Relatively high permeability fine to medium sand deposits tend to dominate in saturated section at the Site area. At monitoring well MW-9D, however, fine-grained soil, such as clay and silt, appears to be dominant while coarse-grained soil, sand, is confined between fined-grained clay and silt stratum. See Figure below.

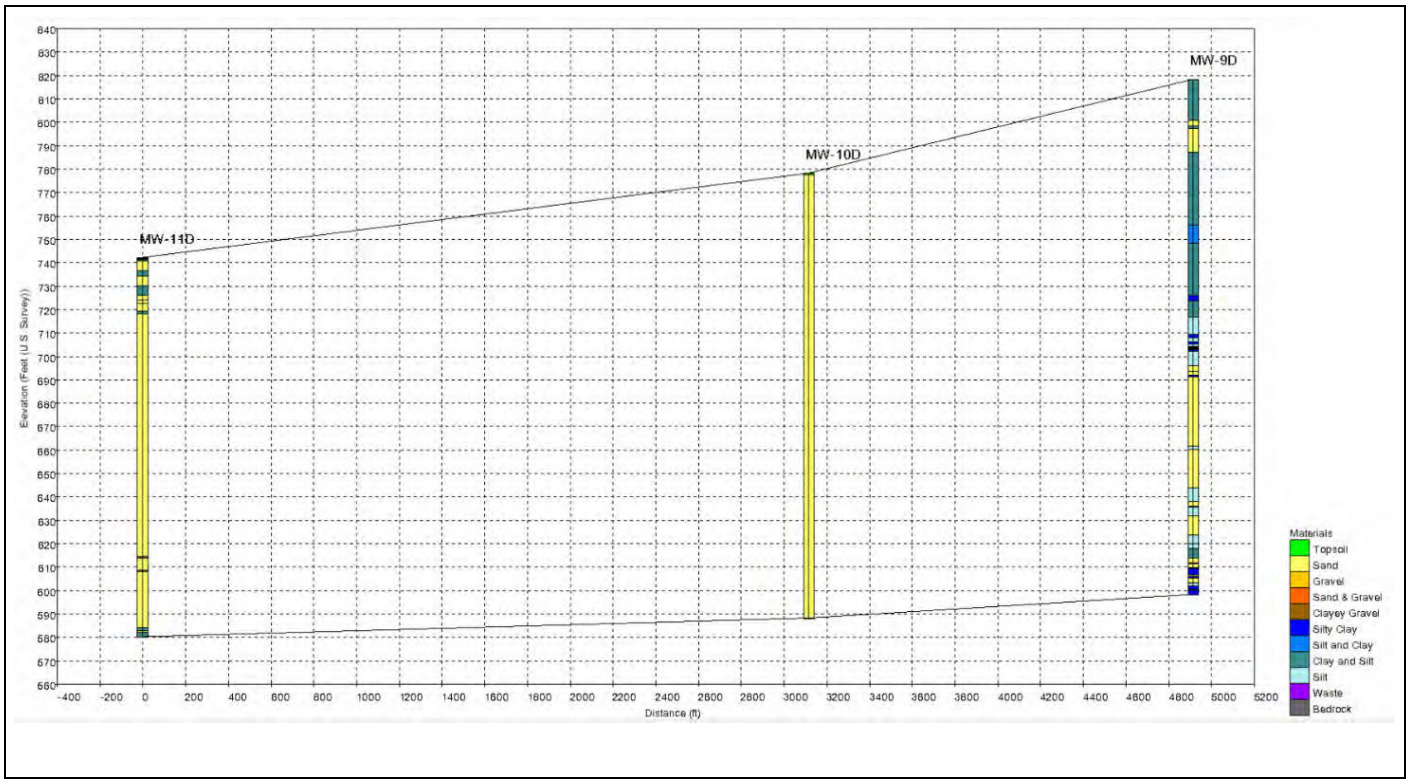


Figure 22 - Cross Section from MW-11D to MW-9D

3.5.2 Groundwater Flow at the Site

Static water levels at the Site monitoring wells were measured in September 2017 and October 2017 (See Table below).

Table 6 - Groundwater Elevations, September 2017 and October 2017.

Well ID	Groundwater Elevation, FT, 9/22/2017	Groundwater Elevation, FT, 10/20/2017
MW-1S	726.54	726.28
MW-1D	726.49	726.23
MW-2S	724.57	724.39
MW-3P	Not Encountered	Not Encountered
MW-3S	723.74	723.53
MW-4	723.42	723.19
MW-5P	757.82	757.74
MW-5S	723.50	723.28
MW-6S	723.66	723.40
MW-7S	725.12	724.81

Groundwater elevation contours were developed from the October 2017 elevation data for the Site groundwater monitoring wells and shown in the following figure. As indicated in the figure, groundwater flows to the southwest

across the Site area. The Site groundwater elevation data and flow direction are consistent with the regional groundwater contour map.

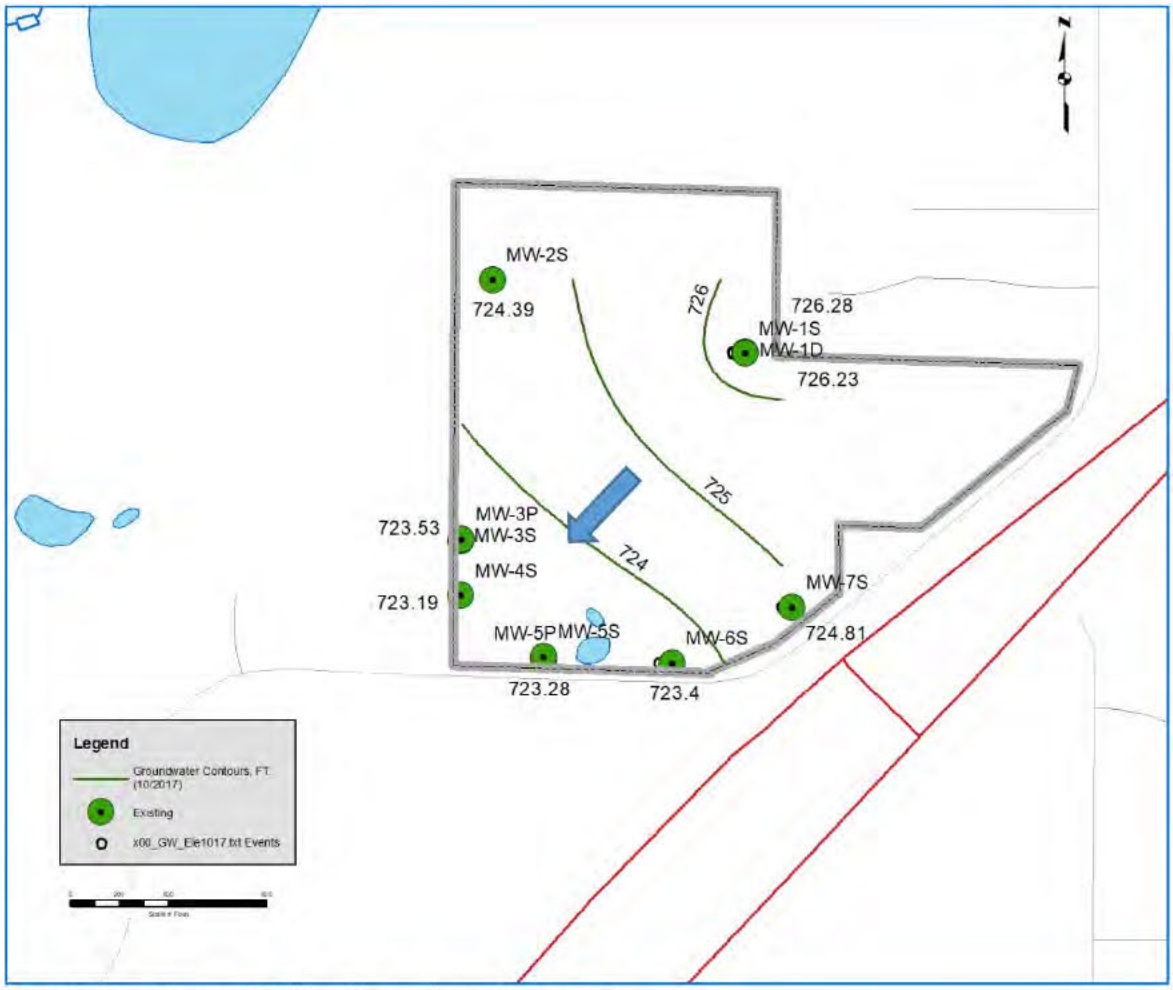


Figure 23 - Site Monitoring Wells and Groundwater Contours, Ft.

Based on a combination of regional flow trends and observed flow on the Site, there is possibility that the northern portion of the site is located on a groundwater divide. Therefore, a portion of Site groundwater is likely to flow to the northwest toward Clear Bottom and Freska Lakes which ultimately discharge northwesterly to the Rogue River. The hydraulic gradient is, however, very flat, estimated to range from approximately 0.0002 to 0.0003 foot/foot, indicating very little groundwater flows to the north or northwest.

3.5.3 Source PFAS Data

As indicated in Table A, the detected PFOS/PFOA concentrations are greater than the proposed MDEQ Part 201 Soil Cleanup Criteria protective of groundwater for drinking water uses for residential properties. The PFOS and PFOA concentrations in the waste and soil samples are illustrated in three cross sections, Figures C1, D1 and E1. Four (4) waste samples[2], WB-2A, WB-4A, W-11A, and W-14A, contain PFOS/PFOA concentrations exceeding the proposed MDEQ Part 201 Residential Soil Cleanup Criteria protective of direct contact exposure for residential properties. Four

[2] Constituent concentrations of the waste samples were compared to the MDEQ Part 201 Generic Soil 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).

(4) waste samples (WB-1A, WB-4A, WB-11A, and WB-14A)[3] and five (5) soil samples (WB-1B, WB-2B, WB-4B, WB-11B, and WB-14B) contains PFOS concentrations exceeding the proposed MDEQ Part 201 Residential Soil Cleanup Criteria protective of groundwater for drinking water uses; one waste sample (WB-4A) [3] and one soil sample (WB-2B) contain PFOA concentrations exceeding the proposed MDEQ Part 201 Residential Soil Cleanup Criteria protective of groundwater for drinking water uses. Except for borehole WB-2, PFOS/PFOA concentrations in the lower interval soil samples in these boreholes were generally less than those in the shallower waste samples, likely due to the sorption of PFAS to the soil matrix.

3.5.4 Source Inorganic Data

As indicated in Table A, chromium, hexavalent chromium, copper, lead, mercury and zinc were detected in the waste samples[3] at concentrations greater than the MDEQ Part 201 Residential Soil Cleanup Criteria protective of groundwater for drinking water uses, MDEQ Part 201 Residential Soil Cleanup Criteria protective of groundwater drinking water uses, GSI, soil particulates inhalation, and soil direct contact criteria[3]. The analytical data for the constituents with exceeding concentrations are illustrated in Figure D. As shown in Figures C2, D2 and E2, the concentrations exceeding Residential Soil Cleanup Criteria were detected in waste samples[3], WB-1A, WB-2A, WB-3A, WB-9A, WB-11A, and WB-14A, but the metals were not detected at concentrations greater than the Part 201 Residential Soil Cleanup Criteria in the soil samples collected from the soil stratum below the waste materials, indicating the leaching of inorganic constituents was limited to a depth of less than 20 feet, likely due to precipitation or ion exchange in the soil stratum underlying the waste.

3.5.5 Source VOC Data

As indicated in Table A, the following VOCs were detected in samples WB-1A, WB-2A, WB-4A, WB-14A, and WB-14B[3]:

1,1-Dichloroethane	Tetrachloroethene
1,2-Dichlorobenzene	Toluene
Ethylbenzene	1,1,1-Trichloroethane
n-Butylbenzene	Trichloroethene
sec-Butylbenzene	1,2,4-Trimethylbenzene
Isopropylbenzene	1,3,5-Trimethylbenzene
4-Isopropyltoluene	o-Xylene
Methyl tert-butyl ether	m,p-Xylene
n-Propylbenzene	

Among the detected VOCs, the followings were detected in the waste samples[3] WB-2A, WB-4A and WB-14A at concentrations greater than the Part 201 Residential Groundwater Cleanup Criteria for drinking water or GSI. See Figures C3, D3 and E3 for a graphic presentation of the analytical data for the above constituents.

Detected VOCs	**Waste Samples Where Exceeding Concentrations Detected**
n-Butylbenzene	WB-14A
sec-Butylbenzene	WB-14A
1,1-Dichloroethane	WB-2A

[3] Constituent concentrations of the waste samples were compared to the MDEQ Part 201 Generic Soil 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).

Detected VOCs	Waste Samples Where Exceeding Concentrations Detected
Tetrachloroethene	WB-4A
Toluene	WB-2A
1,1,1-Trichloroethane	WB-2A
Trichloroethene	WB-2A
1,2,4-Trimethylbenzene	WB-14A, WB-4A
1,3,5-Trimethylbenzene	WB-14A

As shown in Figures C3, D3 and E3, the VOCs detected in WB-2A, WB-4A, and WB-14A[4] were not detected in the deeper soil samples or the detected concentrations were less than the Part 201 Residential Groundwater Cleanup Criteria for drinking water uses or GSI in the deeper soil samples, indicating the vertical extent of VOCs was limited to a depth of less than 20 feet, due to VOCs absorption to the soil matrix.

3.5.6 Source SVOC Data

Several SVOCs, including 2-methylnaphthalene, 3-methylphenol, 4-methylphenol, and nitrobenzene, were detected in waste samples[4] WB-2A, WB-4A, and WB-14A. The nitrobenzene concentration in sample WB-4A was greater than the MDEQ Part 201 Residential Soil Cleanup Criteria protective of groundwater for drinking water uses, and GSI[4]. The SVOCs detected in the waste samples were not detected in the soil samples collected from the soil stratum below the waste materials, indicating the vertical extent of SVOCs was limited to a depth of less than 20 feet. See Figures C3, D3 and E3 for a graphic presentation of nitrobenzene data.

3.5.7 Site Groundwater Sampling and Analysis

R&W /GZA collected groundwater samples from the monitoring wells located at the Site and on the MDOT property, following the "Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells," by U.S. EPA, Region I, Revision 3, dated January 19, 2010 (USEPA Region I, 2010). RW/GZA personnel used a PFAS-free Geotech® portable pneumatic bladder pump or a PFAS-free Solinst® portable double valve pneumatic pump to purge and sample the monitoring wells. Turbidity, dissolved oxygen (DO), specific conductance, pH, oxidation-reduction potential (ORP), temperature, drawdown measurements, and purging rate were recorded at five-minute intervals during well purging. Drawdown induced by purging was kept low in accordance with the procedure, and the pump intake was positioned within the middle portion of the screen. The groundwater monitoring wells were considered stabilized and ready for sample collection after field parameters stabilized over three consecutive readings as shown in the following table and in accordance with U.S. EPA's low flow sampling procedure.

Parameter	Stabilization Criteria
pH	± 0.1 pH units (S.U.)
Temperature	± 3%
Specific Conductance	± 3%
ORP	± 10 millivolts (mV)
Turbidity	± 10% (when turbidity is greater than 5 Nephelometric Turbidity Unit [NTUs]); or < 5 NTUs over three consecutive readings
DO	± 10% (when DO > 0.5 milligrams per liter [mg/L]); or <0.5 mg/L over three consecutive readings

[4] Constituent concentrations of the waste samples were compared to the MDEQ Part 201 Generic Soil 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).

Upon stabilization of the field parameters, groundwater samples were collected by placing the tubing outlet near the bottom of laboratory-supplied sample containers. Immediately following sample collection, each sample was labeled with the project name, project number, location, well name, sample number, collection date, and collector's initials and placed on ice inside a cooler. The collected groundwater samples were transported under chain-of-custody protocol to ALS Kelso laboratory and analyzed for PFAS using Method PFC/537M. The groundwater samples collected from select on-Site groundwater monitoring wells were also submitted to Bio-Chem Laboratories of Grand Rapids, Michigan (BIO-CHEM) for the following analyses: seventeen (17) inorganic compounds using EPA SW846 Method 6000/7000 Series; VOCs using EPA SW846 Method 8260B. A summary of the groundwater analytical data is included as **Table B**. The following subsections provide a discussion of the groundwater analytical data.

3.5.7.1 Groundwater PFOA/PFOS Data

As indicated in Table B, PFOS and PFOA were detected at concentrations greater than the MDEQ Part 201 Residential Cleanup Criteria of 70 ng/L in monitoring wells MW-3S, MW-4S, MW-5S, and MW-8. The highest PFOS and PFOA concentrations were at MW-5S which is consistent with the apparent southwesterly groundwater flow. PFOS and PFOA were not detected in monitoring wells MW-9M, MW-9D, MW-10D, MW-11S, MW-11M, and MW-11D, which are located southeast of the Site, along US-131. PFOS and PFOA concentration less than the MDEQ Part 201 Residential Cleanup Criteria were detected at MW-9S, MW-10S and MW-10M.

3.5.7.2 Groundwater Inorganic Data

Groundwater samples collected from on-Site monitoring wells, MW-1S, MW-1D, MW-2, MW-3S, MW-4S, MW-5S, MW-6S and MW-7S, were analyzed for the following metals:

Aluminum	*Magnesium*
Barium	*Manganese*
Boron	*Silver*
Cadmium	*Thallium*
Chromium	*Vanadium*
Chromium, Hexavalent	*Zinc*
Copper	*Potassium*
Iron	Sodium
Lead	Calcium

Aluminum, magnesium, potassium, sodium and calcium were detected in the monitoring wells. The detected concentrations of magnesium, potassium, sodium and calcium were less than MDEQ Part 201 Residential Groundwater Cleanup Criteria for drinking water uses and GSI. Aluminum was detected in monitoring wells MW-1S, MW-2 and MW-7S at concentrations greater than the Part 201 Residential Groundwater Cleanup Criterion for drinking water uses (50 ug/L), which is an aesthetic drinking water value. However, the detected aluminum concentrations, ranging from 68 to 98 ug/L, were less than the acceptable drinking water value of 200 ug/L (See Footnote V, Part 201, Rule 299.49 Footnotes for generic cleanup criteria tables). The apparent aluminum distribution is not consistent with the PFOA/PFOS distribution. It is possible that the aluminum is naturally occurring.

It is important to note that the metals detected at exceeding regulatory values in the source area waste materials: chromium, hexavalent chromium, copper, lead, and zinc, were not detected in the groundwater samples. Mercury was detected in the waste samples, but not detected in the underlying soil samples, therefore mercury was not analyzed in the groundwater samples. Overall, the groundwater analytical data for metals indicate that the metals detected in the waste materials have not migrated to the groundwater table. Based on the source area soil sample

data and groundwater data, it is believed that the leaching of the inorganic compounds present in the waste materials was limited by the underlying soil in the unsaturated zone, and the vertical extent of the metals was limited to a depth of less than 20 feet, therefore it is unlikely for the inorganic compounds to migrate to the groundwater table, which is approximately 60 feet below grade at the Site area.

In addition, the samples were also analyzed for the following inorganic compounds:

Water Chemistry Compounds
Chloride
Nitrogen, Nitrate (As N)
Nitrogen, Nitrite (As N)
Sulfate
Alkalinity, Total (As CaCO3)
Nitrogen, Ammonia (As N)

Nitrate-Nitrogen was detected in MW-5S at a concentration of 12,000 ug/L, which is slightly greater than the Part 201 Groundwater Cleanup Criterion for drinking water uses (10,000 ug/L). Nitrate-nitrogen, chloride and sulfate concentrations were all below Part 201 criteria in the remaining wells.

3.5.7.3 Groundwater VOC Data

Groundwater samples collected from on-Site monitoring wells, MW-1S, MW-1D, MW-2, MW-3S, MW-4S, MW-5S, MW-6S and MW-7S, were analyzed for VOCs. Except for two compounds, dichlorodifluoromethane and trichlorofluoromethane in MW-3S and MW-4S, VOCs were not detected at concentrations above the detection limits in the monitoring wells. The detected concentrations of dichlorodifluoromethane and trichlorofluoromethane were several orders of magnitude less than the Part 201 Residential Groundwater Cleanup Criteria for drinking water uses.

3.6 OFF-SITE GROUNDWATER INVESTIGATION

The off-Site groundwater investigation has two components: the potable water supply well sampling effort, and an investigation through vertical groundwater profiling and the installation of groundwater monitoring wells in general accordance with the November 27, 2017 RIWP. The work is described below.

3.6.1 Potable Water Well Sampling Data

A total of 644 potable water wells were sampled as of January 30, 2018. A summary of the analytical data is provided in **Table C**. The majority of the water well logs are not in the Wellogic GIS data file. To plot the data as a point feature, the parcel centroids were used for the coordinates of the water wells, therefore the locations are approximate. The following figure shows the ranges of the detected combined concentrations of PFOS and PFOA.

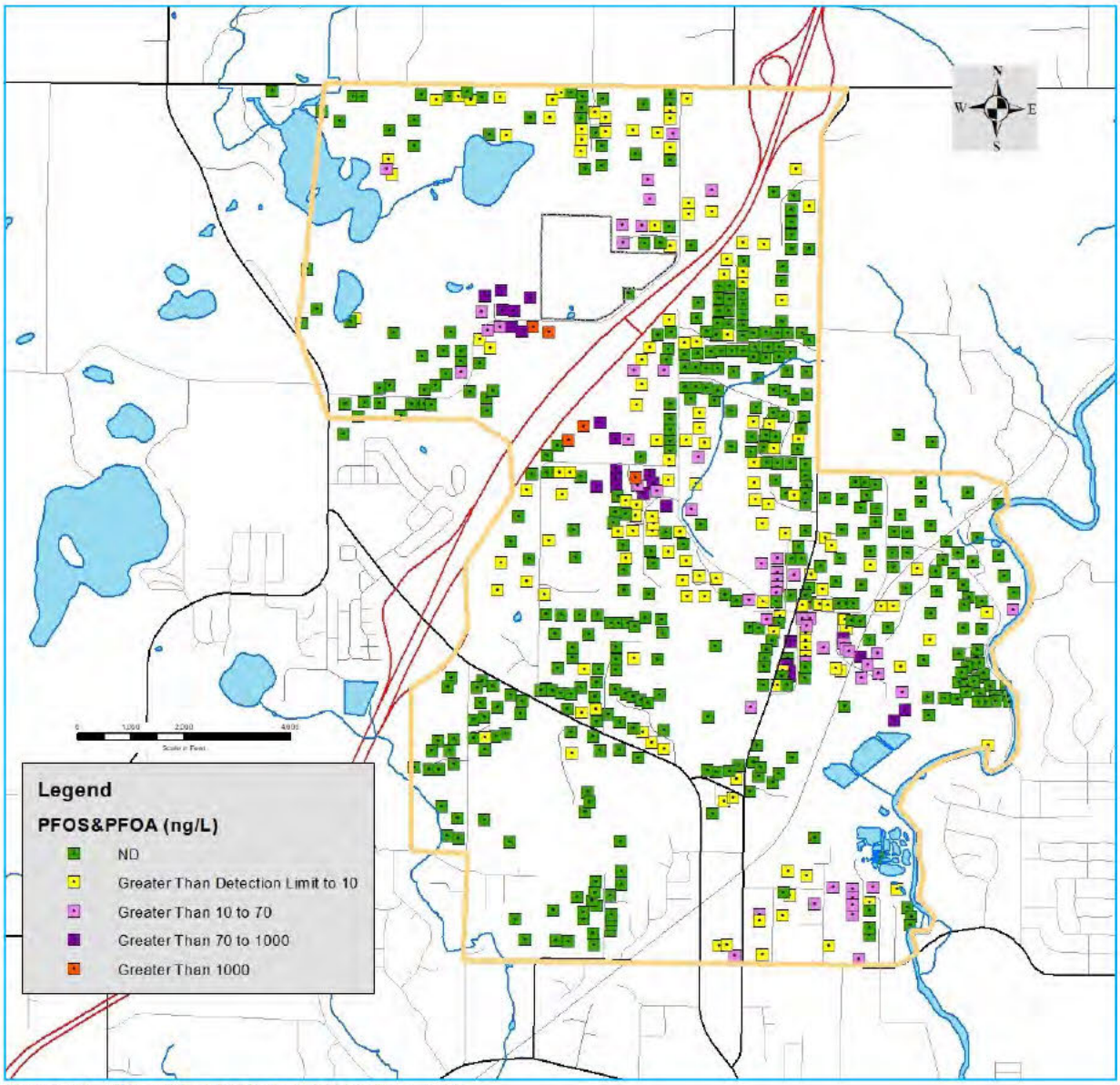


Figure 24 - Water Well PFOS and PFOA Data, ng/L

Well construction date from Wellogic GIS data are available for the following wells where PFOS and PFOA were detected at concentrations greater than 70 ng/L, providing information related to the vertical extent of PFOS and PFOA distribution.

Table 7 - Available Well Screen Depth and Elevation Information for Wells Detected with PFOS / PFOA Concentrations Greater Than 70 ng/L

Well ID	Well Depth, Ft	Top of Screen Elevation, Ft	Bottom of Screen Elevation, Ft	PFOS&PFOA Concentration, ng/L
41000017017	117	705	696	179
41000017492	130	669	659	130
41000014049	97	690	685	2,020
41000022155	135	589	584	200

Well ID	Well Depth, Ft	Top of Screen Elevation, Ft	Bottom of Screen Elevation, Ft	PFOS&PFOA Concentration, ng/L
41000017124	143	593	585	400
41000014049	97	690	685	2,220
41000022015	202	571	566	300
41000018236	184	603	598	2,080
41000024858	165	598	593	670
41000018084	88	591	584	71
41000017225	98	600	592	89
41000025055	92	584	574	74

The deepest detection of PFOS and PFOA concentrations greater than 70 ng/L occur from approximately 560 to 580 feet, near the top of bedrock.

3.6.2 Off Site Groundwater Evaluation

Upon obtaining site access, RW/GZA retained Cascade Drilling (Cascade) to perform drilling and sampling at three of the proposed boring locations in the RIWP, PMW-15, PMW-19, and PMW-21, from December 18, 2017 to January 18, 2018. Cascade used a PROSONIC® rig to advance the soil borings. In general, a 6-inch diameter override casing with a 4-inch diameter core barrel was advanced at 5-foot intervals into the subsurface using a high-frequency, resonant energy, while simultaneously rotating the drill string. Vertical groundwater profiling was performed in water bearing zones by collecting groundwater at an interval of 20 feet at PMW-15. The vertical groundwater profiling sampling interval was changed to 10 feet at PMW-19 and PMW-21, following receipt of MDEQ's comments on the Work Plan on January 2, 2018. The groundwater samples were submitted to ALS Environmental of Kelso, Washington for the analysis of PFAS using Method PFC/537M. The groundwater analytical data are summarized in **Table B**.

As shown in Table B, PFOS was detected at vertical profiling sample PMW-15 (45-50), and PFOA was detected at vertical profiling sample PMW-21 (15-20). PFOS/PFOA were not detected in the other vertical profiling samples collected at PMW-15 and PMW-21. The vertical profiling sample data for PMW-19 will be provided in the future.

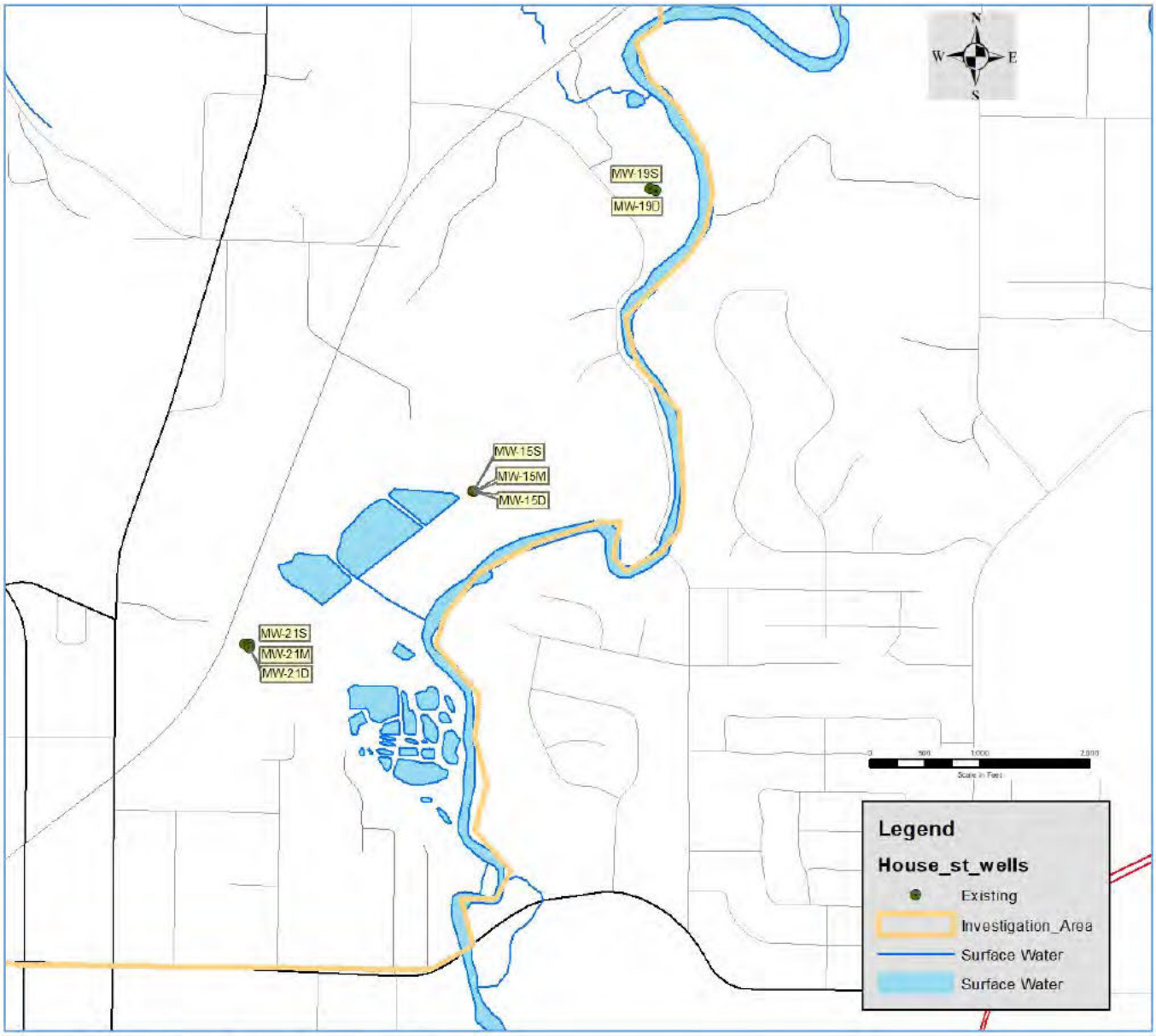


Figure 25- Off-Site Groundwater Monitoring Well Locations

Clustered permanent monitoring wells were installed at MW-15, MW-19, and MW-21. The selection of well screen positions were based on our field observations of the soil types and groundwater, and the concentrations of PFOS and PFOA, with the objectives of evaluating vertical hydraulic gradient, and the extent of PFOS/PFOA in groundwater. The following table provides a summary of the permanent well screen depth intervals.

Table 8 - Summary of Off-Site Well Screen Intervals

Well Location	**Permanent Wells and Screening Intervals (ft below ground surface)**
MW-15	MW-15S (7-17); MW-15M (45-50); MW-15D (108-118).
MW-19	MW-19S (58-61); MW-19D (85-95).
MW-21	MW-21S (10-20); MW-21M (59-64); MW-21D (76-86).

The monitoring wells will be surveyed, developed and sampled, and the off-Site groundwater investigation will be continued at the other locations as proposed in the RIWP. See **Appendix A** for the soil boring logs and well installation information.

3.6.3 Extent of PFOS and PFOA in Groundwater

Based on the groundwater analytical data and the water well data, the extent of PFOS and PFOA concentrations greater than 10 ng/L and 70 ng/L is estimated and shown in Figure F.

4.0 SITE INVESTIGATION AND CSM SUMMARY AND CONCLUSIONS

Based on our literature review and data evaluation, RW/GZA has developed a preliminary understanding of the Site CSM including source, transport mechanisms and exposure pathways associated with historical activities on the House Street Site. See Figure G for a graphic illustration of the CSM.

Based on the analysis of residual waste samples, materials containing PFOS, PFOA and elevated metals, VOCs and SVOCs appeared to have been disposed at the Site. PFOS and PFOA either migrated with liquids or leached from residuals within unsaturated soil to the groundwater table. Even though fine-grained soil is present in lacustrine deposits or unstratified moraines, the fine-grained soil stratum is not continuous allowing PFOS and PFOA to migrate to the water-bearing sand aquifer. Because the waste materials have been found to be buried in the upper 15 feet of the subsurface soils, the potential for surface runoff carrying constituents of interest including PFOS and PFOA in sediment or water was and remains unlikely.

Several inorganics, VOCs and SVOCs were detected at concentrations exceeding the Part 201 Residential Soil Cleanup Criteria in the residual waste materials[5] at select soil borings located at or near the former disposal areas at the Site. However, the underlying soil sample data indicated the vertical extent of the detected inorganic, VOC and SVOC compounds and elements was limited to a depth of less than 20 feet, due to adsorption to the soil matrix.

[5] Constituent concentrations of the waste samples were compared to the MDEQ Part 201 Generic Soil 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).

As indicated in Figure 16, groundwater generally flows to the southwest for approximately 1,000 to 2,000 ft away from the southwest corner of the Site, and then changes to southeasterly toward the Rogue River. Based on the regional groundwater flow configuration, the flow path appears to coincide with a groundwater discharge corridor formed by flow from the northeast and southwest sides of the flow path. The hydraulic gradient along this flow path is approximately 0.0075, which is relatively high for sand and gravel aquifer, and the groundwater seepage velocity was estimated to range from 360 ft/yr to 730 ft/yr. With the relatively fast groundwater seepage velocity and the flow pattern, the transport of PFOS and PFOA is expected to be primarily advective, driven by the bulk groundwater flow. Lateral hydrodynamic dispersion is expected to be relatively limited due to the presence of groundwater flow from either sides of the flow path and the relatively fast groundwater seepage velocity longitudinally. Biodegradation of PFOS and PFOA is not expected due to the stability of the chemicals and the generally long half-lives.

Situating on a groundwater divide, some groundwater is likely to flow from the Site to the northwest toward Clear Bottom and Freska Lakes which ultimately discharge northwesterly to the Rogue River. The hydraulic gradient is, however, very flat, estimated to ranges from approximately 0.0002 to 0.0003 foot/foot, indicating very little groundwater flows to the north or northwest.

Due to their low Henry's Law constant, volatilization of PFOS and PFOA is negligible.

Potential receptors for PFAS-containing groundwater are residents who use groundwater as their primary water sources. In addition, the PFAS-containing groundwater is likely to reach groundwater discharge such as the Rogue River. The following table provides a summary of the relevant exposure pathways and USEPA or MDEQ screening levels for preliminary risk assessments.

Table 9 - Potential Exposure Pathways

Primary Media	**Transport Mechanism**	**Secondary Media/Tertiary Media**	**Receptors**	**Exposure Route**	**USEPA/MDEQ Screening Levels for Relevant Exposure Pathway**
Waste and PFAS-Containing Soil at the Site	Leaching	Groundwater	Humans	Oral Ingestion (as Drinking Water)	MDEQ Part 201 Groundwater Cleanup Criteria Protective of Drinking Water Uses /USEPA Health Advisory
		Groundwater Discharge to Surface Water	Humans	Incidental Ingestion, Dermal Contact (Non-Drinking)	MDEQ Part 201 Groundwater Surface Interface (GSI) Generic or Mixing-Zone Based GSI Criteria.
		Groundwater Discharge to Surface Water	Aquatic Organisms	Ingestion	
Waste and PFAS-Containing Soil at the Site	Direct Contact		Humans	Direct Contact Exposure (Dermal contact, incidental ingestion)	Proposed MDEQ Part 201 Soil Cleanup Criteria for Direct Contact Exposure

The CSM described herein was based on the investigation activities as of January 30, 2018 and data evaluation conducted to date. The work proposed in the RIWP is presently underway and is closely coordinated with MDEQ staff. When the work in the RIWP is completed, the CSM will be updated along with a remedial investigation report.

5.0 REFERENCES

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TABLES

TABLE A
SUMMARY OF SOURCE AREA SOIL AND WASTE ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

FIELDID	MDEQ Proposed Part 201 Residential Soil Cleanup Criteria Protective of Groundwater for Drinking Water Uses	MDEQ Proposed Part 201 Residential Soil Cleanup Criteria - Direct Contact	WB-11A (Waste)	WB-11B (Soil)	WB-14A (Waste)	WB-14B (Soil)	WB-1A (Waste)	WB-1B (Soil)	WB-2A (Waste)
DepthInt			2.8 - 5.6	9 - 9.6	7.3 - 10.6	15 - 16	4.6 - 14.3	16.3 - 17.9	7.1 - 10.7
Sample_ID			K1712986-001	K1712986-002	K1712986-011	K1712986-012	K1712986-007	K1712986-008	K1712986-005
SAMPDATE			11/27/2017	11/27/2017	12/01/2017	12/01/2017	11/30/2017	11/30/2017	11/30/2017
Parameter (ng/Kg)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<840	<980	<870	<980	<970	<920	<950
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<840	<980	<870	<980	<970	<920	<950
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	1,900	<980	1,500,000	<980	72,000	<920	<950
N-Ethyl perfluorooctane sulfonamidoethanol	NA	NA	<840	<980	120,000	<980	2,200	<920	<950
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<840	<980	<870	<980	<970	<920	<950
N-Methyl perfluorooctane sulfonamidoethanol	NA	NA	<840	<980	<870	<980	<970	<920	<950
Perfluorobutane sulfonic acid (PFBS)	NA	NA	<840	<980	<870	<980	<970	<920	<950
Perfluorobutanoic acid (PFBA)	NA	NA	<840	<980	<870	<980	<970	<920	<950
Perfluorodecane sulfonic acid (PFDS)	NA	NA	14,000	<980	730,000	<980	16,000	<920	<950
Perfluorodecanoic acid (PFDA)	NA	NA	510,000	1,000	4,500	<980	20,000	<920	<950
Perfluorododecanoic acid (PFDoDA)	NA	NA	160,000	<980	5,500	<980	8,500	<920	<950
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	5,200	<980	45,000	2,200	<970	2,100	<950
Perfluoroheptanoic acid (PFHpA)	NA	NA	<840	<980	2,200	<980	<970	<920	<950
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	2,000	2,600	17,000	<980	<970	9,600	2,100
Perfluorohexanoic acid (PFHxA)	NA	NA	<840	<980	1,000	<980	<970	<920	<950
Perfluorononanoic acid (PFNA)	NA	NA	71,000	5,700	1,800	<980	32,000	3,700	1,400
Perfluorooctane sulfonamide (FOSA)	NA	NA	64,000	<980	34,000	<980	2,800	<920	<950
Perfluorooctane sulfonic acid (PFOS)	1,400	2,100,000	***2,200,000***	***7,800***	***18,000,000***	***100,000***	***270,000***	***59,000***	<950
Perfluorooctanoic acid (PFOA)	59,000	2,100,000	16,000	6,300	59,000	2,800	2,600	14,000	2,900
Perfluoropentanoic acid (PFPeA)	NA	NA	<840	<980	<870	<980	<970	<920	<950
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	34,000	<980	<870	<980	<970	<920	<950
Perfluorotridecanoic acid (PFTrDA)	NA	NA	4,700,000	2,300	150,000	<980	350,000	<920	<950
Perfluoroundecanoic acid (PFUnDA)	NA	NA	5,500,000	2,700	560,000	<980	900,000	970	<950

TABLE A
SUMMARY OF SOURCE AREA SOIL AND WASTE ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

FIELDID	MDEQ Proposed Part 201 Residential Soil Cleanup Criteria Protective of Groundwater for Drinking Water Uses	MDEQ Proposed Part 201 Residential Soil Cleanup Criteria - Direct Contact	WB-2B (Soil)	WB-4A (Waste)	WB-4B (Soil)
DepthInt			14 - 15.8	8.3 - 10.7	14 - 15.8
Sample_ID			K1712986-006	K1712986-003	K1712986-004
SAMPDATE			11/30/2017	11/29/2017	11/29/2017
Parameter (ng/Kg)					
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<9700	<9400	<970
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<9700	<9400	<970
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	590,000	5,600,000	<970
N-Ethyl perfluorooctane sulfonamidoethanol	NA	NA	82,000	30,000	<970
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	13,000	99,000	<970
N-Methyl perfluorooctane sulfonamidoethanol	NA	NA	<9700	15,000	<970
Perfluorobutane sulfonic acid (PFBS)	NA	NA	<9700	<9400	<970
Perfluorobutanoic acid (PFBA)	NA	NA	<9700	<9400	<970
Perfluorodecane sulfonic acid (PFDS)	NA	NA	93,000	510,000	<970
Perfluorodecanoic acid (PFDA)	NA	NA	1,000,000	160,000	<970
Perfluorododecanoic acid (PFDoDA)	NA	NA	320,000	60,000	<970
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	44,000	370,000	16,000
Perfluoroheptanoic acid (PFHpA)	NA	NA	20,000	10,000	1,100
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	73,000	160,000	9,400
Perfluorohexanoic acid (PFHxA)	NA	NA	<9700	<9400	<970
Perfluorononanoic acid (PFNA)	NA	NA	840,000	96,000	1,900
Perfluorooctane sulfonamide (FOSA)	NA	NA	35,000	110,000	<970
Perfluorooctane sulfonic acid (PFOS)	1,400	2,100,000	***6,900,000***	***79,000,000***	***33,000***
Perfluorooctanoic acid (PFOA)	59,000	2,100,000	***130,000***	***240,000***	23,000
Perfluoropentanoic acid (PFPeA)	NA	NA	<9700	<9400	<970
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	78,000	16,000	<970
Perfluorotridecanoic acid (PFTrDA)	NA	NA	11,000,000	2,000,000	<970
Perfluoroundecanoic acid (PFUnDA)	NA	NA	17,000,000	6,600,000	<970

TABLE A
SUMMARY OF SOURCE AREA SOIL AND WASTE ANALYTICAL DATA - INORGANICS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

FIELDID DepthInt Sample_ID SAMPDATE	State-Wide Default Background	MDEQ Part 201 Residential Drinking Water Protection Criteria	MDEQ Part 201 Groundwater Surface Water Interface Criteria	MDEQ Part 201 Residentail Soil Volatilization to Indoor Air Inhalation Criteria	MDEQ Part 201 Residential Infinite Source Volatile Soil Inhalation Criteria	MDEQ Part 201 Particulate Soil Inhalation Criteria	MDEQ Part 201 Residential Soil Direct Contact Criteria
Parameter (ug/kg)							
Arsenic	5,800	4,600	4,600	NA	NA	720,000	7,600
Barium	75,000	1,300,000	NA	NA	NA	330,000,000	37,000,000
Cadmium	1,200	6,000	NA	NA	NA	1,700,000	550,000
Chromium (III)	18,000	1,000,000,000	NA	NA	NA	330,000,000	790,000,000
Chromium (VI)	NA	30,000	3,300	NA	NA	260,000	2,500,000
Copper	32,000	5,800,000	NA	NA	NA	130,000,000	20,000,000
Lead	21,000	700,000	NA	NA	NA	100,000,000	400,000
Mercury	130	1,700	50	48,000	52,000	20,000,000	160,000
Selenium	410	4,000	400	NA	NA	130,000,000	2,600,000
Silver	1,000	4,500	100	NA	NA	6,700,000	2,500,000
Zinc	47,000	2,400,000	NA	NA	NA	NA	170,000,000

TABLE A
SUMMARY OF SOURCE AREA SOIL AND WASTE ANALYTICAL DATA - INORGANICS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

FIELDID	WB-11A (Waste)	WB-11B (Soil)	WB-14A (Waste)	WB-14B (Soil)	WB-1A (Waste)	WB-1B (Soil)	WB-2A (Waste)	WB-2B (Soil)	WB-4A (Waste)	WB-4B (Soil)
DepthInt	2.8 - 5.6	9 - 9.6	7.3 - 10.6	15 - 16	4.6 - 14.3	16.3 - 17.9	7.1 - 10.7	14 - 15.8	8.3 - 10.7	14 - 15.8
Sample_ID	1712003-01A	1712003-02A	1712016-01A	1712016-02A	1712003-07A	1712003-08A	1712003-05A	1712003-06A	1712003-03A	1712003-04A
SAMPDATE	11/27/2017	11/27/2017	12/01/2017	12/01/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/29/2017	11/29/2017
Parameter (ug/kg)										
Arsenic	<10000	1,100	<10000	<1000	<1000	<1000	<10000	<1000	<10000	1,300
Barium	40,000	7,800	36,000	2,600	36,000	6,100	15,000	3,100	47,000	2,400
Cadmium	<2000	<200	<2000	<200	<200	<200	<2000	<200	<2000	<200
Chromium (III)	***25,977,000***	6,300	***38,000,000***	3,000	***2,800,000***	3,100	***26,000,000***	2,500	***25,000,000***	2,800
Chromium (VI)	***23,000***	<500	<500	<500	<500	<500	<500	<500	<500	<500
Copper	***45,000***	2,800	***160,000***	1,700	15,000	1,500	***57,000***	1,100	***52,000***	2,000
Lead	***28,000***	1,900	***59,000***	1,000	9,700	1,200	***28,000***	<1000	***26,000***	1,400
Mercury	***430***	<50	***820***	<50	***120***	<50	***1,400***	<50	***2,400***	<50
Selenium	<2000	<200	<2000	<200	<200	<200	<2000	<200	<2000	<200
Silver	<1000	<100	<1000	<100	<100	<100	<1000	<100	<1000	<100
Zinc	***120,000***	9,400	***360,000***	4,200	40,000	4,500	***150,000***	2,900	***140,000***	5,400

TABLE A
SUMMARY OF SOURCE AREA SOIL AND WASTE ANALYTICAL DATA - VOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

FIELDID DepthInt Sample_ID SAMPDATE	MDEQ Part 201 Residential Drinking Water Protection Criteria	MDEQ Part 201 Groundwater Surface Water Interface Criteria	MDEQ Part 201 Residentail Soil Volatilization to Indoor Air Inhalation Criteria	MDEQ Part 201 Residential Infinite Source Volatile Soil Inhalation Criteria	MDEQ Part 201 Particulate Soil Inhalation Criteria	MDEQ Part 201 Residential Soil Direct Contact Criteria	MDEQ Soil Saturation Concentration
Parameter (ug/kg)							
Acetone	1.50E+04	3.40E+04	2.90E+08	1.30E+08	3.90E+11	2.30E+07	1.10E+08
Benzene	1.00E+02	4.00E+03	1.60E+03	1.30E+04	3.80E+08	1.80E+05	4.00E+05
Bromobenzene	5.50E+02	NA	3.10E+05	4.50E+05	5.30E+08	5.40E+05	7.60E+05
Bromodichloromethane	1.60E+03	NA	1.20E+03	9.10E+03	8.40E+07	1.10E+05	1.50E+06
Bromoform	1.60E+03	NA	1.50E+05	9.00E+05	2.80E+09	8.20E+05	8.70E+05
Bromomethane	2.00E+02	7.00E+02	8.60E+02	1.10E+04	3.30E+08	3.20E+05	2.20E+06
2-Butanone	2.60E+05	4.40E+04	5.40E+07	2.90E+07	6.70E+10	1.20E+08	2.70E+07
n-Butylbenzene	1.60E+03	NA	NA	NA	2.00E+09	2.50E+06	1.00E+07
sec-Butylbenzene	1.60E+03	NA	NA	NA	4.00E+08	2.50E+06	1.00E+07
tert-Butylbenzene	1.60E+03	NA	NA	NA	6.70E+08	2.50E+06	1.00E+07
Carbon disulfide	1.60E+04	NA	7.60E+04	1.30E+06	4.70E+10	7.20E+06	2.80E+05
Carbon tetrachloride	1.00E+02	9.00E+02	1.90E+02	3.50E+03	1.30E+08	9.60E+04	3.90E+05
Chlorobenzene	2.00E+03	5.00E+02	1.20E+05	7.70E+05	4.70E+09	4.30E+06	2.60E+05
Chloroethane	8.60E+03	2.20E+04	2.90E+06	3.00E+07	6.70E+11	2.60E+06	9.50E+05
Chloroform	1.60E+03	7.00E+03	7.20E+03	4.50E+04	1.30E+09	1.20E+06	1.50E+06
Chloromethane	5.20E+03	NA	2.30E+03	4.00E+04	4.90E+09	1.60E+06	1.10E+06
2-Chlorotoluene	3.30E+03	NA	2.70E+05	1.20E+06	4.70E+09	4.50E+06	5.00E+05
Dibromochloromethane	1.60E+03	NA	3.90E+03	2.40E+04	1.30E+08	1.10E+05	6.10E+05
1,2-Dibromo-3-chloropropane	1.00E+01	NA	2.20E+02	2.60E+02	5.60E+05	4.40E+03	1.20E+03
Dibromomethane	1.60E+03	NA	NA	NA	NA	2.50E+06	2.00E+06
1,2-Dichlorobenzene	1.40E+04	2.80E+02	1.10E+07	3.90E+07	1.00E+11	1.90E+07	2.10E+05
1,3-Dichlorobenzene	1.70E+02	6.80E+02	2.60E+04	7.90E+04	2.00E+08	2.00E+05	1.70E+05
1,4-Dichlorobenzene	1.70E+03	3.60E+02	1.90E+04	7.70E+04	4.50E+08	4.00E+05	NA
Dichlorodifluoromethane	9.50E+04	NA	9.00E+05	5.30E+07	3.30E+12	5.20E+07	1.00E+06
1,1-Dichloroethane	1.80E+04	1.50E+04	2.30E+05	2.10E+06	3.30E+10	2.70E+07	8.90E+05
1,2-Dichloroethane	1.00E+02	7.20E+03	2.10E+03	6.20E+03	1.20E+08	9.10E+04	1.20E+06
1,1-Dichloroethene	1.40E+02	2.60E+03	6.20E+01	1.10E+03	6.20E+07	2.00E+05	5.70E+05
cis-1,2-Dichloroethene	1.40E+03	1.20E+04	2.20E+04	1.80E+05	2.30E+09	2.50E+06	6.40E+05
trans-1,2-Dichloroethene	2.00E+03	3.00E+04	2.30E+04	2.80E+05	4.70E+09	3.80E+06	1.40E+06
1,2-Dichloropropane	1.00E+02	4.60E+03	4.00E+03	2.50E+04	2.70E+08	1.40E+05	5.50E+05
Diethyl ether	2.00E+02	NA	2.80E+07	8.50E+07	8.00E+11	1.10E+08	7.40E+06

TABLE A
SUMMARY OF SOURCE AREA SOIL AND WASTE ANALYTICAL DATA - VOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

FIELDID DepthInt Sample_ID SAMPDATE	MDEQ Part 201 Residential Drinking Water Protection Criteria	MDEQ Part 201 Groundwater Surface Water Interface Criteria	MDEQ Part 201 Residentail Soil Volatilization to Indoor Air Inhalation Criteria	MDEQ Part 201 Residential Infinite Source Volatile Soil Inhalation Criteria	MDEQ Part 201 Particulate Soil Inhalation Criteria	MDEQ Part 201 Residential Soil Direct Contact Criteria	MDEQ Soil Saturation Concentration
Parameter (ug/kg)							
Ethylbenzene	1.50E+03	3.60E+02	8.70E+04	7.20E+05	1.00E+10	2.20E+07	1.40E+05
1,2-Dibromoethane	2.00E+01	1.10E+02	6.70E+02	1.70E+03	1.40E+07	9.20E+01	8.90E+05
Hexachlorobutadiene	2.60E+04	9.10E+01	1.30E+05	1.30E+05	1.40E+08	1.00E+05	3.50E+05
2-Hexanone	2.00E+04	NA	9.90E+05	1.10E+06	2.70E+09	3.20E+07	2.50E+06
Isopropylbenzene	9.10E+04	3.20E+03	4.00E+05	1.70E+06	5.80E+09	2.50E+07	3.90E+05
4-Methyl-2-pentanone	3.60E+04	NA	3.70E+07	4.50E+07	1.40E+11	5.60E+07	2.70E+06
Methyl tert-butyl ether	8.00E+02	1.40E+05	9.90E+06	2.50E+07	2.00E+11	1.50E+06	5.90E+06
Methylene chloride	1.00E+02	3.00E+04	4.50E+04	2.10E+05	6.60E+09	1.30E+06	2.30E+06
n-Propylbenzene	1.60E+03	NA	NA	NA	1.30E+09	2.50E+06	1.00E+07
Styrene	2.70E+03	2.10E+03	2.50E+05	9.70E+05	5.50E+09	4.00E+05	5.20E+05
1,1,1,2-Tetrachloroethane	1.50E+03	NA	6.20E+03	3.60E+04	4.20E+08	4.80E+05	4.40E+05
1,1,2,2-Tetrachloroethane	1.70E+02	1.60E+03	4.30E+03	1.00E+04	5.40E+07	5.30E+04	8.70E+05
Tetrachloroethene	1.00E+02	1.20E+03	1.10E+04	1.70E+05	2.70E+09	2.00E+05	8.80E+04
Toluene	1.60E+04	5.40E+03	3.30E+05	2.80E+06	2.70E+10	5.00E+07	2.50E+05
1,2,4-Trichlorobenzene	4.20E+03	5.90E+03	9.60E+06	2.80E+07	2.50E+10	9.90E+05	1.10E+06
1,1,1-Trichloroethane	4.00E+03	1.80E+03	2.50E+05	3.80E+06	6.70E+10	5.00E+08	4.60E+05
1,1,2-Trichloroethane	1.00E+02	6.60E+03	4.60E+03	1.70E+04	1.90E+08	1.80E+05	9.20E+05
Trichloroethene	1.00E+02	4.00E+03	1.00E+03	1.10E+04	1.30E+08	1.10E+05	5.00E+05
Trichlorofluoromethane	5.20E+04	NA	2.80E+06	9.20E+07	3.80E+12	7.90E+07	5.60E+05
1,2,3-Trichloropropane	8.40E+02	NA	4.00E+03	9.20E+03	2.00E+07	1.30E+06	8.30E+05
1,2,4-Trimethylbenzene	2.10E+03	5.70E+02	4.30E+06	2.10E+07	8.20E+10	3.20E+07	1.10E+05
1,3,5-Trimethylbenzene	1.80E+03	1.10E+03	2.60E+06	1.60E+07	8.20E+10	3.20E+07	9.40E+04
Vinyl chloride	4.00E+01	2.60E+02	2.70E+02	4.20E+03	3.50E+08	3.80E+03	4.90E+05
m,p-Xylene	5.60E+03	8.20E+02	6.30E+06	4.60E+07	2.90E+11	4.10E+08	1.50E+05
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA
trans-1,4-Dichloro-2-butene	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloropropene	NA	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA

TABLE A
SUMMARY OF SOURCE AREA SOIL AND WASTE ANALYTICAL DATA - VOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

FIELDID DepthInt Sample_ID SAMPDATE	MDEQ Part 201 Residential Drinking Water Protection Criteria	MDEQ Part 201 Groundwater Surface Water Interface Criteria	MDEQ Part 201 Residentail Soil Volatilization to Indoor Air Inhalation Criteria	MDEQ Part 201 Residential Infinite Source Volatile Soil Inhalation Criteria	MDEQ Part 201 Particulate Soil Inhalation Criteria	MDEQ Part 201 Residential Soil Direct Contact Criteria	MDEQ Soil Saturation Concentration
Parameter (ug/kg)							
Iodomethane	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA

TABLE A
SUMMARY OF SOURCE AREA SOIL AND WASTE ANALYTICAL DATA - VOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

FIELDID	WB-11A (Waste)	WB-11B (Soil)	WB-14A (Waste)	WB-14B (Soil)	WB-1A (Waste)	WB-1B (Soil)	WB-2A (Waste)	WB-2B (Soil)	WB-4A (Waste)	WB-4B (Soil)
DepthInt	2.8 - 5.6	9 - 9.6	7.3 - 10.6	15 - 16	4.6 - 14.3	16.3 - 17.9	7.1 - 10.7	14 - 15.8	8.3 - 10.7	14 - 15.8
Sample_ID	1712003-01A	1712003-02A	1712016-01A	1712016-02A	1712003-07A	1712003-08A	1712003-05A	1712003-06A	1712003-03A	1712003-04A
SAMPDATE	11/27/2017	11/27/2017	12/01/2017	12/01/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/29/2017	11/29/2017
Parameter (ug/kg)										
Acetone	<750	<750	<750	<750	<750	<750	<1500	<750	<750	<750
Benzene	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
Bromobenzene	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
Bromodichloromethane	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
Bromoform	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
Bromomethane	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
2-Butanone	<250	<250	<250	<250	<250	<250	<500	<250	<250	<250
n-Butylbenzene	<50	<50	***2500***	<50	<50	<50	<100	<50	<50	<50
sec-Butylbenzene	<50	<50	***1700***	<50	<50	<50	<100	<50	<50	<50
tert-Butylbenzene	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
Carbon disulfide	<250	<250	<250	<250	<250	<250	<500	<250	<250	<250
Carbon tetrachloride	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
Chlorobenzene	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
Chloroethane	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
Chloroform	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
Chloromethane	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
2-Chlorotoluene	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
Dibromochloromethane	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
1,2-Dibromo-3-chloropropane	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
Dibromomethane	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
1,2-Dichlorobenzene	<50	<50	<50	<50	<50	<50	200	<50	<50	<50
1,3-Dichlorobenzene	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
1,4-Dichlorobenzene	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
Dichlorodifluoromethane	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
1,1-Dichloroethane	<50	<50	<50	<50	<50	<50	***17000***	<50	<50	<50
1,2-Dichloroethane	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
1,1-Dichloroethene	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
cis-1,2-Dichloroethene	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
trans-1,2-Dichloroethene	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
1,2-Dichloropropane	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
Diethyl ether	<200	<200	<200	<200	<200	<200	<400	<200	<200	<200

TABLE A
SUMMARY OF SOURCE AREA SOIL AND WASTE ANALYTICAL DATA - VOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

FIELDID	WB-11A (Waste)	WB-11B (Soil)	WB-14A (Waste)	WB-14B (Soil)	WB-1A (Waste)	WB-1B (Soil)	WB-2A (Waste)	WB-2B (Soil)	WB-4A (Waste)	WB-4B (Soil)
DepthInt	2.8 - 5.6	9 - 9.6	7.3 - 10.6	15 - 16	4.6 - 14.3	16.3 - 17.9	7.1 - 10.7	14 - 15.8	8.3 - 10.7	14 - 15.8
Sample_ID	1712003-01A	1712003-02A	1712016-01A	1712016-02A	1712003-07A	1712003-08A	1712003-05A	1712003-06A	1712003-03A	1712003-04A
SAMPDATE	11/27/2017	11/27/2017	12/01/2017	12/01/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/29/2017	11/29/2017
Parameter (ug/kg)										
Ethylbenzene	<50	<50	91	<50	<50	<50	<100	<50	<50	<50
1,2-Dibromoethane	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
Hexachlorobutadiene	<250	<250	<250	<250	<250	<250	<500	<250	<250	<250
2-Hexanone	<250	<250	<250	<250	<250	<250	<500	<250	<250	<250
Isopropylbenzene	<50	<50	350	<50	<50	<50	<100	<50	<50	<50
4-Methyl-2-pentanone	<250	<250	<250	<250	<250	<250	<500	<250	<250	<250
Methyl tert-butyl ether	<250	<250	610	<250	<250	<250	<500	<250	<250	<250
Methylene chloride	<100	<100	<100	<100	<100	<100	<200	<100	<100	<100
n-Propylbenzene	<50	<50	1600	<50	<50	<50	<100	<50	<50	<50
Styrene	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
1,1,1,2-Tetrachloroethane	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
1,1,2,2-Tetrachloroethane	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
Tetrachloroethene	<50	<50	<50	<50	<50	<50	<100	<50	***130***	<50
Toluene	<50	<50	<50	<50	<50	<50	***25000***	<50	660	<50
1,2,4-Trichlorobenzene	<250	<250	<250	<250	<250	<250	<500	<250	<250	<250
1,1,1-Trichloroethane	<50	<50	<50	<50	<50	<50	***15000***	<50	<50	<50
1,1,2-Trichloroethane	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
Trichloroethene	<50	<50	<50	<50	<50	<50	***160***	<50	<50	<50
Trichlorofluoromethane	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
1,2,3-Trichloropropane	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
1,2,4-Trimethylbenzene	<50	<50	***5300***	98	95	<50	350	<50	***760***	<50
1,3,5-Trimethylbenzene	<50	<50	***1700***	<50	<50	<50	<100	<50	290	<50
Vinyl chloride	<40	<40	<40	<40	<40	<40	<80	<40	<40	<40
m,p-Xylene	<100	<100	270	<100	<100	<100	<200	<100	200	<100
cis-1,3-Dichloropropene	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
trans-1,3-Dichloropropene	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
4-Chlorotoluene	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
trans-1,4-Dichloro-2-butene	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
1,3-Dichloropropane	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
1,1-Dichloropropene	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
2,2-Dichloropropane	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50

TABLE A
SUMMARY OF SOURCE AREA SOIL AND WASTE ANALYTICAL DATA - VOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

FIELDID	WB-11A (Waste)	WB-11B (Soil)	WB-14A (Waste)	WB-14B (Soil)	WB-1A (Waste)	WB-1B (Soil)	WB-2A (Waste)	WB-2B (Soil)	WB-4A (Waste)	WB-4B (Soil)
DepthInt	2.8 - 5.6	9 - 9.6	7.3 - 10.6	15 - 16	4.6 - 14.3	16.3 - 17.9	7.1 - 10.7	14 - 15.8	8.3 - 10.7	14 - 15.8
Sample_ID	1712003-01A	1712003-02A	1712016-01A	1712016-02A	1712003-07A	1712003-08A	1712003-05A	1712003-06A	1712003-03A	1712003-04A
SAMPDATE	11/27/2017	11/27/2017	12/01/2017	12/01/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/29/2017	11/29/2017
Parameter (ug/kg)										
Iodomethane	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50
Bromochloromethane	<100	<100	<100	<100	<100	<100	<200	<100	<100	<100
1,2,3-Trichlorobenzene	<250	<250	<250	<250	<250	<250	<500	<250	<250	<250
o-Xylene	<50	<50	180	<50	<50	<50	<100	<50	<50	<50
4-Isopropyltoluene	<50	<50	17000	330	830	<50	17000	<50	42000	<50

TABLE A
SUMMARY OF SOURCE AREA SOIL AND WASTE ANALYTICAL DATA - SVOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

FIELDID DepthInt Sample_ID SAMPDATE	MDEQ Part 201 Residential Drinking Water Protection Criteria	MDEQ Part 201 Groundwater Surface Water Interface Criteria	MDEQ Part 201 Residentail Soil Volatilization to Indoor Air Inhalation Criteria	MDEQ Part 201 Residential Infinite Source Volatile Soil Inhalation Criteria	MDEQ Part 201 Particulate Soil Inhalation Criteria	MDEQ Part 201 Residential Soil Direct Contact Criteria	MDEQ Soil Saturation Concentration
Parameter (ug/kg)							
Acenaphthene	3.00E+05	8.70E+03	1.90E+08	8.10E+07	1.40E+10	4.10E+07	NA
Acenaphthylene	5.90E+03	NA	1.60E+06	2.20E+06	2.30E+09	1.60E+06	NA
Aniline	1.10E+03	3.30E+02	NA	NA	6.70E+07	3.30E+05	4.50E+06
Anthracene	4.10E+04	NA	1.00E+09	1.40E+09	6.70E+10	2.30E+08	NA
Benzidine	1.00E+03	1.00E+03	NA	NA	4.60E+04	1.00E+03	NA
Benzo[a]anthracene	NA	NA	NA	NA	NA	2.00E+04	NA
Benzo[b]fluoranthene	NA	NA	NA	NA	NA	2.00E+04	NA
Benzo[k]fluoranthene	NA	NA	NA	NA	NA	2.00E+05	NA
Benzo[g,h,i]perylene	NA	NA	NA	NA	8.00E+08	2.50E+06	NA
Benzo[a]pyrene	NA	NA	NA	NA	1.50E+06	2.00E+03	NA
Benzoic acid	6.40E+05	NA	NA	NA	NA	9.90E+08	NA
Benzyl alcohol	2.00E+05	NA	NA	NA	3.30E+11	3.20E+08	5.80E+06
Bis(2-chloroethyl)ether	1.00E+02	1.00E+02	8.30E+03	3.80E+03	9.40E+06	1.30E+04	2.20E+06
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	7.00E+08	2.80E+06	1.00E+07
Butyl benzyl phthalate	2.20E+06	1.20E+05	NA	NA	4.70E+10	3.60E+07	3.10E+05
4-Chloro-3-methylphenol	5.80E+03	2.80E+02	NA	NA	NA	4.50E+06	NA
2-Chloronaphthalene	6.20E+05	NA	NA	NA	NA	5.60E+07	NA
2-Chlorophenol	9.00E+02	3.60E+02	4.30E+05	9.60E+05	1.20E+09	1.40E+06	1.90E+07
Chrysene	NA	NA	NA	NA	NA	2.00E+06	NA
Di-n-butyl phthalate	9.60E+05	1.10E+04	NA	NA	3.30E+09	2.70E+07	7.60E+05
Di-n-octyl phthalate	1.00E+08	NA	NA	NA	3.10E+10	6.90E+06	1.40E+08
Dibenz[a,h]anthracene	NA	NA	NA	NA	NA	2.00E+03	NA
Dibenzofuran	NA	1.70E+03	2.00E+06	1.30E+05	6.70E+06	NA	NA
3,3´-Dichlorobenzidine	2.00E+03	2.00E+03	NA	NA	6.50E+06	6.60E+03	NA
2,4-Dichlorophenol	1.50E+03	3.30E+02	NA	NA	5.10E+09	6.60E+05	1.80E+06
Diethyl phthalate	1.10E+05	2.20E+03	NA	NA	3.30E+09	1.70E+08	7.40E+05
Dimethyl phthalate	1.50E+06	NA	NA	NA	3.30E+09	1.00E+09	7.90E+05
2,4-Dimethylphenol	7.40E+03	7.60E+03	NA	NA	4.70E+09	1.10E+07	NA
2,4-Dinitrotoluene	4.30E+02	NA	NA	NA	1.60E+07	4.80E+04	NA
Fluoranthene	7.30E+05	5.50E+03	1.00E+09	7.40E+08	9.30E+09	4.60E+07	NA
Fluorene	3.90E+05	5.30E+03	5.80E+08	1.30E+08	9.30E+09	2.70E+07	NA
Hexachlorobenzene	1.80E+03	3.50E+02	4.10E+04	1.70E+04	6.80E+06	8.90E+03	NA

TABLE A
SUMMARY OF SOURCE AREA SOIL AND WASTE ANALYTICAL DATA - SVOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

FIELDID DepthInt Sample_ID SAMPDATE	MDEQ Part 201 Residential Drinking Water Protection Criteria	MDEQ Part 201 Groundwater Surface Water Interface Criteria	MDEQ Part 201 Residentail Soil Volatilization to Indoor Air Inhalation Criteria	MDEQ Part 201 Residential Infinite Source Volatile Soil Inhalation Criteria	MDEQ Part 201 Particulate Soil Inhalation Criteria	MDEQ Part 201 Residential Soil Direct Contact Criteria	MDEQ Soil Saturation Concentration
Parameter (ug/kg)							
Hexachlorobutadiene	2.60E+04	9.10E+01	1.30E+05	1.30E+05	1.40E+08	1.00E+05	3.50E+05
Hexachlorocyclopentadiene	3.20E+05	NA	3.00E+04	5.00E+04	1.30E+07	2.30E+06	7.20E+05
Hexachloroethane	4.30E+02	1.80E+03	4.00E+04	5.50E+05	2.30E+08	2.30E+05	NA
Indeno[1,2,3-cd]pyrene	NA	NA	NA	NA	NA	2.00E+04	NA
Isophorone	1.50E+04	2.60E+04	NA	NA	1.20E+10	4.80E+06	2.40E+06
4,6-Dinitro-2-methylphenol	8.30E+02	NA	NA	NA	1.30E+08	7.90E+04	NA
2-Methylnaphthalene	5.70E+04	4.20E+03	2.70E+06	1.50E+06	6.70E+08	8.10E+06	NA
Naphthalene	3.50E+04	7.30E+02	2.50E+05	3.00E+05	2.00E+08	1.60E+07	NA
Nitrobenzene	3.30E+02	3.60E+03	9.10E+04	5.40E+04	4.70E+07	1.00E+05	4.90E+05
2-Nitrophenol	4.00E+02	NA	NA	NA	NA	6.30E+05	NA
N-Nitrosodi-n-propylamine	3.30E+02	NA	NA	NA	1.60E+06	1.20E+03	1.50E+06
N-Nitrosodiphenylamine	5.40E+03	NA	NA	NA	2.20E+09	1.70E+06	NA
Pentachlorophenol	2.20E+01	NA	NA	NA	1.00E+08	9.00E+04	NA
Phenanthrene	5.60E+04	2.10E+03	2.80E+06	1.60E+05	6.70E+06	1.60E+06	NA
Phenol	8.80E+04	9.00E+03	NA	NA	4.00E+10	4.00E+07	1.20E+07
Pyrene	4.80E+05	NA	1.00E+09	6.50E+08	6.70E+09	2.90E+07	NA
Pyridine	4.00E+02	NA	1.10E+03	8.20E+03	2.30E+08	2.30E+05	3.70E+04
2,4,5-Trichlorophenol	3.90E+04	NA	NA	NA	2.30E+10	2.30E+07	NA
2,4,6-Trichlorophenol	2.40E+03	3.30E+02	NA	NA	1.00E+09	7.10E+05	NA
4-Nitroaniline	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	NA	NA	NA	NA	NA	NA	NA
3-Methylphenol	NA	NA	NA	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA
Bis(2-chloroethoxy)methane	NA	NA	NA	NA	NA	NA	NA
Diphenylamine	NA	NA	NA	NA	NA	NA	NA
1,2-Diphenylhydrazine	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodimethylamine	NA	NA	NA	NA	NA	NA	NA

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FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

FIELDID DepthInt Sample_ID SAMPDATE	MDEQ Part 201 Residential Drinking Water Protection Criteria	MDEQ Part 201 Groundwater Surface Water Interface Criteria	MDEQ Part 201 Residentail Soil Volatilization to Indoor Air Inhalation Criteria	MDEQ Part 201 Residential Infinite Source Volatile Soil Inhalation Criteria	MDEQ Part 201 Particulate Soil Inhalation Criteria	MDEQ Part 201 Residential Soil Direct Contact Criteria	MDEQ Soil Saturation Concentration
Parameter (ug/kg)							
4-Chlorophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA
2,6-Dichlorophenol	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	NA	NA	NA	NA	NA	NA	NA

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FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

FIELDID	WB-11A (Waste)	WB-11B (Soil)	WB-14A (Waste)	WB-14B (Soil)	WB-1A (Waste)	WB-1B (Soil)	WB-2A (Waste)	WB-2B (Soil)	WB-4A (Waste)	WB-4B (Soil)
DepthInt	2.8 - 5.6	9 - 9.6	7.3 - 10.6	15 - 16	4.6 - 14.3	16.3 - 17.9	7.1 - 10.7	14 - 15.8	8.3 - 10.7	14 - 15.8
Sample_ID	1712003-01A	1712003-02A	1712016-01A	1712016-02A	1712003-07A	1712003-08A	1712003-05A	1712003-06A	1712003-03A	1712003-04A
SAMPDATE	11/27/2017	11/27/2017	12/01/2017	12/01/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/29/2017	11/29/2017
Parameter (ug/kg)										
Acenaphthene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Acenaphthylene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Aniline	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Anthracene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Benzidine	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Benzo[a]anthracene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Benzo[b]fluoranthene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Benzo[k]fluoranthene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Benzo[g,h,i]perylene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Benzo[a]pyrene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Benzoic acid	<3300	<3300	<3300	<3300	<3300	<3300	<3300	<3300	<3300	<3300
Benzyl alcohol	<1300	<1300	<1300	<1300	<1300	<1300	<1300	<1300	<1300	<1300
Bis(2-chloroethyl)ether	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Bis(2-ethylhexyl)phthalate	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Butyl benzyl phthalate	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
4-Chloro-3-methylphenol	<280	<280	<280	<280	<280	<280	<280	<280	<280	<280
2-Chloronaphthalene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
2-Chlorophenol	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Chrysene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Di-n-butyl phthalate	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Di-n-octyl phthalate	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Dibenz[a,h]anthracene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Dibenzofuran	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
3,3´-Dichlorobenzidine	<2000	<2000	<2000	<2000	<2000	<2000	<2000	<2000	<2000	<2000
2,4-Dichlorophenol	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Diethyl phthalate	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Dimethyl phthalate	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
2,4-Dimethylphenol	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
2,4-Dinitrotoluene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Fluoranthene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Fluorene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Hexachlorobenzene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330

TABLE A
SUMMARY OF SOURCE AREA SOIL AND WASTE ANALYTICAL DATA - SVOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

FIELDID	WB-11A (Waste)	WB-11B (Soil)	WB-14A (Waste)	WB-14B (Soil)	WB-1A (Waste)	WB-1B (Soil)	WB-2A (Waste)	WB-2B (Soil)	WB-4A (Waste)	WB-4B (Soil)
DepthInt	2.8 - 5.6	9 - 9.6	7.3 - 10.6	15 - 16	4.6 - 14.3	16.3 - 17.9	7.1 - 10.7	14 - 15.8	8.3 - 10.7	14 - 15.8
Sample_ID	1712003-01A	1712003-02A	1712016-01A	1712016-02A	1712003-07A	1712003-08A	1712003-05A	1712003-06A	1712003-03A	1712003-04A
SAMPDATE	11/27/2017	11/27/2017	12/01/2017	12/01/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/29/2017	11/29/2017
Parameter (ug/kg)										
Hexachlorobutadiene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Hexachlorocyclopentadiene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Hexachloroethane	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Indeno[1,2,3-cd]pyrene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Isophorone	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
4,6-Dinitro-2-methylphenol	<830	<830	<830	<830	<830	<830	<830	<830	<830	<830
2-Methylnaphthalene	<330	<330	1500	<330	<330	<330	<330	<330	<330	<330
Naphthalene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Nitrobenzene	<330	<330	<330	<330	<330	<330	<330	<330	***1400***	<330
2-Nitrophenol	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
N-Nitrosodi-n-propylamine	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
N-Nitrosodiphenylamine	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Pentachlorophenol	<800	<800	<800	<800	<800	<800	<800	<800	<800	<800
Phenanthrene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Phenol	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Pyrene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Pyridine	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
2,4,5-Trichlorophenol	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
2,4,6-Trichlorophenol	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
4-Nitroaniline	<830	<830	<830	<830	<830	<830	<830	<830	<830	<830
4-Nitrophenol	<830	<830	<830	<830	<830	<830	<830	<830	<830	<830
4-Bromophenyl phenyl ether	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
4-Methylphenol	<330	<330	2600	<330	<330	<330	7000	<330	3600	<330
4-Chloroaniline	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
3-Methylphenol	<330	<330	2600	<330	<330	<330	7000	<330	3600	<330
Bis(2-chloroisopropyl)ether	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Bis(2-chloroethoxy)methane	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Diphenylamine	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
1,2-Diphenylhydrazine	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
2,4-Dinitrophenol	<830	<830	<830	<830	<830	<830	<830	<830	<830	<830
2,6-Dinitrotoluene	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
N-Nitrosodimethylamine	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330

TABLE A
SUMMARY OF SOURCE AREA SOIL AND WASTE ANALYTICAL DATA - SVOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

FIELDID	WB-11A (Waste)	WB-11B (Soil)	WB-14A (Waste)	WB-14B (Soil)	WB-1A (Waste)	WB-1B (Soil)	WB-2A (Waste)	WB-2B (Soil)	WB-4A (Waste)	WB-4B (Soil)
DepthInt	2.8 - 5.6	9 - 9.6	7.3 - 10.6	15 - 16	4.6 - 14.3	16.3 - 17.9	7.1 - 10.7	14 - 15.8	8.3 - 10.7	14 - 15.8
Sample_ID	1712003-01A	1712003-02A	1712016-01A	1712016-02A	1712003-07A	1712003-08A	1712003-05A	1712003-06A	1712003-03A	1712003-04A
SAMPDATE	11/27/2017	11/27/2017	12/01/2017	12/01/2017	11/30/2017	11/30/2017	11/30/2017	11/30/2017	11/29/2017	11/29/2017
Parameter (ug/kg)										
4-Chlorophenyl phenyl ether	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
2,6-Dichlorophenol	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
2-Nitroaniline	<830	<830	<830	<830	<830	<830	<830	<830	<830	<830
2-Methylphenol	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
3-Nitroaniline	<830	<830	<830	<830	<830	<830	<830	<830	<830	<830

NOTES:

1. Concentration and criteria units are reported in nano-grams per kilogram (ng/kg) or parts per trillion (ppt) for PFAS, and micro-grams per kilogram (ug/kg) or parts per billion (ppb) for inorganics, volatile organic compounds and semi-volatile organic compounds; "< RL" indicates the compound was analyzed for but not detected above the method detection limit; RL = Reporting Limit.

2. MDEQ Proposed Part 201 Residential Cleanup Criteria for Perfluorooctane sulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) were based on the "Proposed Part 201 Cleanup Cirteria Rules," dated August 29, 2017.

3. MDEQ Part 201 Residential Soil Cleanup Criteria for inorganics, VOCs and SVOCs were based on MDEQ's Part 201 Cleanup Crtieria and Screening Levels dated December 2013.

4. Constituent concentrations of the waste samples were compared to the MDEQ Part 201 Generic Soil 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).

5. Bold italic number with thick line border or bold italic chemical indicates that compound was detected above one of the listed cleanup cirteria.

6. For chromiums, the laboratory reported total chromium and hexvalent chromium concentrations. Chromium (III) concentrations in the table was obtained by deducting hexvalent chromium concentrations from the total chromium concentrations for the purpose of comparing to available cleanup criteria for chromium (III).

TABLE B
SUMMARY OF GROUNDWATER ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

WELL	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - DRINKING WATER USES	MW-10D	MW-10M	MW-10S	MW-11D	MW-11M	MW-11S	MW-1D	MW-1S
LABORATORY ID		K1800647-002	K1800647-001	K1800647-003	K1713273-012	K1713273-015	K1713273-011	K1711117-004	K1711117-003
SAMPLE DATE		01/22/2018	01/22/2018	01/22/2018	12/08/2017	12/08/2017	12/08/2017	10/12/2017	10/12/2017
Parameter (UNIT)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.4	<4.2	<4.2	<8.1	<4.1	<4.3	<4.2	<4.2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.4	<4.2	<4.2	<7.7	<4.1	<4.3	<4.2	<4.2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.4	<4.2	<4.2	<4.1	<4.1	<4.3	<4.2	<4.2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.4	<4.2	<4.2	<4.1	<4.1	<4.3	<4.2	<4.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.4	<4.2	<4.2	<4.1	<4.1	<4.3	<4.2	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.4	<4.2	<4.2	<4.1	<4.1	<4.3	<4.2	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.4	8.4	<4.2	<4.1	<4.1	<4.3	<4.2	18
Perfluorobutanoic acid (PFBA)	NA	<8.8	<8.3	<8.3	<8.1	<8.1	<8.6	<8.3	<8.3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.4	<4.2	<4.2	<4.1	<4.1	<4.3	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.4	<4.2	<4.2	<4.1	<4.1	<4.3	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.4	<4.2	<4.2	<4.1	<4.1	<4.3	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.4	<4.2	8.5	<4.1	<4.1	<4.3	<4.2	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.4	<4.2	<4.2	<4.1	<4.1	<4.3	<4.2	12
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.4	4.5	8	<4.1	<4.1	<4.3	<4.2	26
Perfluorohexanoic acid (PFHxA)	NA	<4.4	<4.2	<4.2	<4.1	<4.1	<4.3	<4.2	16
Perfluorononanoic acid (PFNA)	NA	<4.4	<4.2	<4.2	<4.1	<4.1	<4.3	<4.2	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.4	<4.2	<4.2	<4.1	<4.1	<4.3	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.4	12	37	<4.1	<4.1	<4.3	<4.2	<4.2
Perfluorooctanoic acid (PFOA)	70	<1.8	9.3	15	<1.6	<1.6	<1.7	<1.7	4.2
Perfluoropentanoic acid (PFPeA)	NA	<4.4	<4.2	<4.2	<4.1	<4.1	<4.3	<4.2	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.4	<4.2	<4.2	<4.1	<4.1	<4.3	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4.4	<4.2	<4.2	<4.1	<4.1	<4.3	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4.4	<4.2	<4.2	<4.1	<4.1	<4.3	<4.2	<4.2

TABLE B
SUMMARY OF GROUNDWATER ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

WELL	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - DRINKING WATER USES	MW-2	MW-3S	MW-4S	MW-5D	MW-5S	MW-6D	MW-6S	MW-7S
LABORATORY ID		K1711117-005	K1711250-001	K1711250-002	K1800647-004	K1711250-003	K1713273-007	K1711250-004	K1711250-005
SAMPLE DATE		10/12/2017	10/13/2017	10/13/2017	01/22/2018	10/13/2017	12/07/2017	10/16/2017	10/16/2017
Parameter (UNIT)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.3	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.3	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.3	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.3	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	370	93	5.4	570	<4.3	<4.2	<4.2
Perfluorobutanoic acid (PFBA)	NA	<8.3	91	160	<8.3	140	<8.6	<8.3	<8.3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.3	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.3	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.3	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	32	550	<4.2	1100	<4.3	<4.2	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	180	320	<4.2	710	<4.3	<4.2	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	930	1600	13	1900	<4.3	14	6.9
Perfluorohexanoic acid (PFHxA)	NA	<4.2	390	420	7.7	450	<4.3	<4.2	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.3	<4.3	<4.2	18	<4.3	<4.2	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.3	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	22	***2000***	26	***44000***	<4.3	<4.2	4.7
Perfluorooctanoic acid (PFOA)	70	<1.7	***380***	***830***	8.9	***2800***	<1.7	9.8	3.3
Perfluoropentanoic acid (PFPeA)	NA	<4.2	130	170	<4.2	190	<4.3	<4.2	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.2	<4.3	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4.2	<4.3	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4.2	<4.3	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2

TABLE B
SUMMARY OF GROUNDWATER ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

WELL	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - DRINKING WATER USES	MW-8	MW-9D	MW-9M	MW-9S	PMW-15 (110-115)	PMW-15 (110-115) DUP	PMW-15 (25-30)	PMW-15 (45-50)
LABORATORY ID		K1713273-008	K1713273-004	K1713273-002	K1713273-001	K1713825-005	K1713825-006	K1713825-001	K1713825-003
SAMPLE DATE		12/07/2017	12/06/2017	12/06/2017	12/06/2017	12/21/2017	12/21/2017	12/19/2017	12/20/2017
Parameter (UNIT)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.4	<4.1	<4.3	<6.4	<4.2	<5	<4.2	<4.2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.4	<4.1	<4.3	<4.2	<4.2	<5	<4.2	<4.2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.4	<4.1	<4.3	<4.2	<4.2	<5	<4.2	<4.2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.4	<4.1	<4.3	<4.2	<4.2	<5	<4.2	<4.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.4	<4.1	<4.3	<4.2	<4.2	<5	<4.2	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.4	<4.1	<4.3	<4.2	<4.2	<5	<4.2	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	110	<4.1	<4.3	5	<4.2	<5	<4.2	<4.2
Perfluorobutanoic acid (PFBA)	NA	18	<8.1	<8.6	<8.3	<8.3	<10	<8.3	<8.3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.4	<4.1	<4.3	<4.2	<4.2	<5	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.4	<4.1	<4.3	<4.2	<4.2	<5	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.4	<4.1	<4.3	<4.2	<4.2	<5	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	120	<4.1	<4.3	<4.2	<4.2	<5	<4.2	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	88	<4.1	<4.3	<4.2	<4.2	<5	<4.2	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	250	<4.1	<4.3	<4.2	<4.2	<5	<4.2	<4.2
Perfluorohexanoic acid (PFHxA)	NA	33	6.4	<4.3	<4.2	<4.2	<5	<4.2	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.4	<4.1	<4.3	<4.2	<4.2	<5	<4.2	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.4	<4.1	<4.3	<4.2	<4.2	<5	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	***150***	<4.1	<4.3	<4.2	<4.2	<5	<4.2	66
Perfluorooctanoic acid (PFOA)	70	***600***	<1.6	<1.7	2.4	<1.7	<2	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	17	<4.1	<4.3	<4.2	<4.2	<5	<4.2	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.4	<4.1	<4.3	<4.2	<4.2	<5	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4.4	<4.1	<4.3	<4.2	<4.2	<5	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4.4	<4.1	<4.3	<4.2	<4.2	<5	<4.2	<4.2

TABLE B
SUMMARY OF GROUNDWATER ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

WELL	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - DRINKING WATER USES	PMW-21 (15-20)	PMW-21 (25-30)	PMW-21 (35-40)	PMW-21 (55-60)	PMW-21 (80-85)
LABORATORY ID		K1800184-001	K1800184-002	K1800184-003	K1800184-004	K1800184-005
SAMPLE DATE		01/02/2018	01/03/2018	01/03/2018	01/03/2018	01/03/2018
Parameter (UNIT)						
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.3	<4.2	<4.2	<4.3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.3	<4.2	<4.2	<4.3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.3	<4.2	<4.2	<4.3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.3	<4.2	<4.2	<4.3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.3	<4.2	<4.2	<4.3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.3	<4.2	<4.2	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	<4.3	<4.3	<4.2	<4.2	<4.3
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.6	<8.3	<8.3	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.3	<4.2	<4.2	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.3	<4.2	<4.2	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.3	<4.2	<4.2	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.3	<4.2	<4.2	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<4.3	<4.2	<4.2	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	<4.3	<4.2	<4.2	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<4.3	<4.3	<4.2	<4.2	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.3	<4.3	<4.2	<4.2	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.3	<4.3	<4.2	<4.2	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4.3	<4.3	<4.2	<4.2	<4.3
Perfluorooctanoic acid (PFOA)	70	2.2	<1.7	<1.7	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.3	<4.3	<4.2	<4.2	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.3	<4.3	<4.2	<4.2	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4.3	<4.3	<4.2	<4.2	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4.3	<4.3	<4.2	<4.2	<4.3

TABLE B
SUMMARY OF GROUNDWATER ANALYTICAL DATA - INORGANICS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

WELL	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - DRINKING WATER USES	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - GROUNDWATER SURFACE INTERFACE	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - INDOOR AIR INHALATION	MW-1D	MW-1S	MW-2	MW-3S	MW-4S	MW-5S
LABORATORY ID				1710057-02A	1710057-01A	1710057-03A	1710061-01A	1710061-02A	1710061-03A
SAMPLE DATE				10/12/2017	10/12/2017	10/12/2017	10/13/2017	10/13/2017	10/13/2017
Parameter (ug/L)									
Aluminum	50	NA	NA	<50	***84***	***68***	<50	<50	<50
Barium	2,000.00	NA	NA	<100	<100	<100	<100	<100	<100
Boron	500	7,200.00	NA	<300	<300	<300	<300	<300	<300
Cadmium	5	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	NA	NA	NA	<10	<10	<10	<10	<10	<10
Chromium, Hexavalent	100	11	NA	<10	<10	<10	<10	<10	<10
Copper	1,000.00	NA	NA	<4	<4	<4	<4	<4	<4
Iron	300	NA	NA	<200	<200	<200	<200	<200	<200
Lead	4	NA	NA	<3	<3	<3	<3	<3	<3
Magnesium	400,000.00	NA	NA	36000	32000	37000	49000	38000	34000
Manganese	50	NA	NA	<50	<50	<50	<50	<50	<50
Silver	34	0.2	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	2	3.7	NA	<50	<50	<50	<50	<50	<50
Vanadium	4.5	27	NA	<4	<4	<4	<4	<4	<4
Zinc	2,400.00	NA	NA	44	<20	<20	<20	<20	<20
Potassium	NA	NA	NA	1900	1300	1400	1100	920	1800
Sodium	NA	NA	NA	93000	7100	6200	4300	4300	86000
Calcium	NA	NA	NA	90000	85000	100000	130000	120000	120000

TABLE B
SUMMARY OF GROUNDWATER ANALYTICAL DATA - INORGANICS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

WELL	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - DRINKING WATER USES	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - GROUNDWATER SURFACE INTERFACE	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - INDOOR AIR INHALATION	MW-6S	MW-7S
LABORATORY ID				1710069-01A	1710069-02A
SAMPLE DATE				10/16/2017	10/16/2017
Parameter (ug/L)					
Aluminum	50	NA	NA	<50	***98***
Barium	2,000.00	NA	NA	<100	<100
Boron	500	7,200.00	NA	<300	<300
Cadmium	5	NA	NA	<0.5	<0.5
Chromium	NA	NA	NA	<10	<10
Chromium, Hexavalent	100	11	NA	<10	<10
Copper	1,000.00	NA	NA	<4	<4
Iron	300	NA	NA	<200	<200
Lead	4	NA	NA	<3	<3
Magnesium	400,000.00	NA	NA	26000	32000
Manganese	50	NA	NA	<50	<50
Silver	34	0.2	NA	<0.5	<0.5
Thallium	2	3.7	NA	<50	<50
Vanadium	4.5	27	NA	<4	<4
Zinc	2,400.00	NA	NA	<20	<20
Potassium	NA	NA	NA	1400	1200
Sodium	NA	NA	NA	31000	12000
Calcium	NA	NA	NA	82000	84000

TABLE B

SUMMARY OF GROUNDWATER ANALYTICAL DATA - WATER CHEMISTRY
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

SAML_ALIAS	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - DRINKING WATER USES	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - GROUNDWATER SURFACE INTERFACE	MW-1D	MW-1S	MW-2	MW-3S	MW-4S	MW-5S
Sample_ID			1710057-02A	1710057-01A	1710057-03A	1710061-01A	1710061-02A	1710061-03A
SAMPDATE			10/12/2017	10/12/2017	10/12/2017	10/13/2017	10/13/2017	10/13/2017
Parameter (UNIT)								
Chloride	250,000.00	NA	190000	17000	14000	3400	3800	62000
Nitrogen, Nitrate (As N)	10,000.00	NA	2700	3100	1700	4400	3500	***12000***
Nitrogen, Nitrite (As N)	1,000.00	NA	<100	<100	<100	<100	<100	<100
Sulfate	250,000.00	NA	25000	12000	13000	34000	32000	58000
Alkalinity, Total (As CaCO3)	NA	NA	300000	330000	380000	500000	430000	460000
Nitrogen, Ammonia (As N)	10,000	NA	<25	<25	<25	<25	<25	<25

TABLE B

SUMMARY OF GROUNDWATER ANALYTICAL DATA - WATER CHEMISTRY
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

SAML_ALIAS	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - DRINKING WATER USES	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - GROUNDWATER SURFACE INTERFACE	MW-6S	MW-7S
Sample_ID			1710069-01A	1710069-02A
SAMPDATE			10/16/2017	10/16/2017
Parameter (UNIT)				
Chloride	250,000.00	NA	70000	12000
Nitrogen, Nitrate (As N)	10,000.00	NA	1200	1300
Nitrogen, Nitrite (As N)	1,000.00	NA	<100	<100
Sulfate	250,000.00	NA	19000	13000
Alkalinity, Total (As CaCO3)	NA	NA	280000	350000
Nitrogen, Ammonia (As N)	10,000	NA	<25	<25

TABLE B

SUMMARY OF GROUNDWATER ANALYTICAL DATA - VOCs

FORMER HOUSE STREET DISPOSAL SITE

PLAINFIELD TOWNSHIP, MICHIGAN

WELL	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - DRINKING WATER USES	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - GROUNDWATER SURFACE INTERFACE	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - INDOOR AIR INHALATION	MW-1D	MW-1S	MW-2	MW-3S	MW-4S	MW-5S
LABORATORY ID				1710057-02A	1710057-01A	1710057-03A	1710061-01A	1710061-02A	1710061-03A
SAMPLE DATE				10/12/2017	10/12/2017	10/12/2017	10/13/2017	10/13/2017	10/13/2017
Parameter (ug/L)									
Acetone	730	1,700.00	1,000,000,000.00	<100	<100	<100	<100	<100	<100
Benzene	5	200	5,600.00	<1	<1	<1	<1	<1	<1
Bromobenzene	18	NA	180,000.00	<1	<1	<1	<1	<1	<1
Bromodichloromethane	80	NA	4,800.00	<1	<1	<1	<1	<1	<1
Bromoform	80	NA	470,000.00	<1	<1	<1	<1	<1	<1
Bromomethane	10	35	4,000.00	<1	<1	<1	<1	<1	<1
2-Butanone	13,000.00	2,200.00	240,000,000.00	<50	<50	<50	<50	<50	<50
n-Butylbenzene	80	NA	NA	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	80	NA	NA	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	80	NA	NA	<1	<1	<1	<1	<1	<1
Carbon disulfide	800	NA	250,000.00	<50	<50	<50	<50	<50	<50
Carbon tetrachloride	5	45	370	<1	<1	<1	<1	<1	<1
Chlorobenzene	100	25	210,000.00	<1	<1	<1	<1	<1	<1
Chloroethane	430	1,100.00	5,700,000.00	<1	<1	<1	<1	<1	<1
Chloroform	80	350	28,000.00	<1	<1	<1	<1	<1	<1
Chloromethane	260	NA	8,600.00	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	150	NA	220,000.00	<1	<1	<1	<1	<1	<1
Dibromochloromethane	80	NA	14,000.00	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	0.2	NA	220	<1	<1	<1	<1	<1	<1
Dibromomethane	80	NA	NA	<5	<5	<5	<5	<5	<5
1,2-Dichlorobenzene	600	13	160,000.00	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	6.6	28	18,000.00	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	75	17	16,000.00	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	1,700.00	NA	220,000.00	<1	<1	<1	2.4	1.8	<1
1,1-Dichloroethane	880	740	1,000,000.00	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	5	360	9,600.00	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	7	130	200	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	620	93,000.00	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	100	1,500.00	85,000.00	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	5	230	16,000.00	<1	<1	<1	<1	<1	<1

TABLE B

SUMMARY OF GROUNDWATER ANALYTICAL DATA - VOCs

FORMER HOUSE STREET DISPOSAL SITE

PLAINFIELD TOWNSHIP, MICHIGAN

WELL	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - DRINKING WATER USES	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - GROUNDWATER SURFACE INTERFACE	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - INDOOR AIR INHALATION	MW-1D	MW-1S	MW-2	MW-3S	MW-4S	MW-5S
LABORATORY ID				1710057-02A	1710057-01A	1710057-03A	1710061-01A	1710061-02A	1710061-03A
SAMPLE DATE				10/12/2017	10/12/2017	10/12/2017	10/13/2017	10/13/2017	10/13/2017
Parameter (ug/L)									
Diethyl ether	10	NA	61,000,000.00	<50	<50	<50	<50	<50	<50
Ethylbenzene	74	18	110,000.00	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	0.05	5.7	2,400.00	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	15	0.053	1,600.00	<5	<5	<5	<5	<5	<5
Hexachloroethane	7.3	6.7	27,000.00	<5	<5	<5	<5	<5	<5
2-Hexanone	1,000.00	NA	4,200,000.00	<50	<50	<50	<50	<50	<50
Isopropylbenzene	800	28	56,000.00	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone	1,800.00	NA	20,000,000.00	<50	<50	<50	<50	<50	<50
Methyl tert-butyl ether	40	7,100.00	47,000,000.00	<4	<4	<4	<4	<4	<4
Methylene chloride	5	1,500.00	220,000.00	<5	<5	<5	<5	<5	<5
n-Propylbenzene	80	NA	NA	<1	<1	<1	<1	<1	<1
Styrene	100	80	170,000.00	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	77	NA	15,000.00	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	8.5	78	12,000.00	<1	<1	<1	<1	<1	<1
Tetrachloroethene	5	60	25,000.00	<1	<1	<1	<1	<1	<1
Toluene	790	270	530,000.00	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	70	99	300,000.00	<5	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	200	89	660,000.00	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	5	330	17,000.00	<1	<1	<1	<1	<1	<1
Trichloroethene	5	200	2,200.00	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	2,600.00	NA	1,100,000.00	<1	<1	<1	6.5	4.7	<1
1,2,3-Trichloropropane	42	NA	8,300.00	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	63	17	56,000.00	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	72	45	61,000.00	<1	<1	<1	<1	<1	<1
Vinyl chloride	2	13	1,100.00	<1	<1	<1	<1	<1	<1
m,p-Xylene	280	41	190,000.00	<2	<2	<2	<2	<2	<2
cis-1,3-Dichloropropene	NA	NA	NA	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	NA	NA	NA	<1	<1	<1	<1	<1	<1
4-Chlorotoluene	NA	NA	NA	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	NA	NA	NA	<1	<1	<1	<1	<1	<1

TABLE B

SUMMARY OF GROUNDWATER ANALYTICAL DATA - VOCs

FORMER HOUSE STREET DISPOSAL SITE

PLAINFIELD TOWNSHIP, MICHIGAN

WELL	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - DRINKING WATER USES	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - GROUNDWATER SURFACE INTERFACE	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - INDOOR AIR INHALATION	MW-1D	MW-1S	MW-2	MW-3S	MW-4S	MW-5S
LABORATORY ID				1710057-02A	1710057-01A	1710057-03A	1710061-01A	1710061-02A	1710061-03A
SAMPLE DATE				10/12/2017	10/12/2017	10/12/2017	10/13/2017	10/13/2017	10/13/2017
Parameter (ug/L)									
1,3-Dichloropropane	NA	NA	NA	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	NA	NA	NA	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	NA	NA	NA	<1	<1	<1	<1	<1	<1
Iodomethane	NA	NA	NA	<1	<1	<1	<1	<1	<1
Bromochloromethane	NA	NA	NA	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	NA	NA	NA	<5	<5	<5	<5	<5	<5
o-Xylene	NA	NA	NA	<1	<1	<1	<1	<1	<1
4-Isopropyltoluene	NA	NA	NA	<1	<1	<1	<1	<1	<1

TABLE B
SUMMARY OF GROUNDWATER ANALYTICAL DATA - VOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

WELL	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - DRINKING WATER USES	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - GROUNDWATER SURFACE INTERFACE	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - INDOOR AIR INHALATION	MW-6S	MW-7S
LABORATORY ID				1710069-01A	1710069-02A
SAMPLE DATE				10/16/2017	10/16/2017
Parameter (ug/L)					
Acetone	730	1,700.00	1,000,000,000.00	<100	<100
Benzene	5	200	5,600.00	<1	<1
Bromobenzene	18	NA	180,000.00	<1	<1
Bromodichloromethane	80	NA	4,800.00	<1	<1
Bromoform	80	NA	470,000.00	<1	<1
Bromomethane	10	35	4,000.00	<1	<1
2-Butanone	13,000.00	2,200.00	240,000,000.00	<50	<50
n-Butylbenzene	80	NA	NA	<1	<1
sec-Butylbenzene	80	NA	NA	<1	<1
tert-Butylbenzene	80	NA	NA	<1	<1
Carbon disulfide	800	NA	250,000.00	<50	<50
Carbon tetrachloride	5	45	370	<1	<1
Chlorobenzene	100	25	210,000.00	<1	<1
Chloroethane	430	1,100.00	5,700,000.00	<1	<1
Chloroform	80	350	28,000.00	<1	<1
Chloromethane	260	NA	8,600.00	<1	<1
2-Chlorotoluene	150	NA	220,000.00	<1	<1
Dibromochloromethane	80	NA	14,000.00	<1	<1
1,2-Dibromo-3-chloropropane	0.2	NA	220	<1	<1
Dibromomethane	80	NA	NA	<5	<5
1,2-Dichlorobenzene	600	13	160,000.00	<1	<1
1,3-Dichlorobenzene	6.6	28	18,000.00	<1	<1
1,4-Dichlorobenzene	75	17	16,000.00	<1	<1
Dichlorodifluoromethane	1,700.00	NA	220,000.00	<1	<1
1,1-Dichloroethane	880	740	1,000,000.00	<1	<1
1,2-Dichloroethane	5	360	9,600.00	<1	<1
1,1-Dichloroethene	7	130	200	<1	<1
cis-1,2-Dichloroethene	70	620	93,000.00	<1	<1
trans-1,2-Dichloroethene	100	1,500.00	85,000.00	<1	<1
1,2-Dichloropropane	5	230	16,000.00	<1	<1

TABLE B
SUMMARY OF GROUNDWATER ANALYTICAL DATA - VOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

WELL	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - DRINKING WATER USES	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - GROUNDWATER SURFACE INTERFACE	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - INDOOR AIR INHALATION	MW-6S	MW-7S
LABORATORY ID				1710069-01A	1710069-02A
SAMPLE DATE				10/16/2017	10/16/2017
Parameter (ug/L)					
Diethyl ether	10	NA	61,000,000.00	<50	<50
Ethylbenzene	74	18	110,000.00	<1	<1
1,2-Dibromoethane	0.05	5.7	2,400.00	<1	<1
Hexachlorobutadiene	15	0.053	1,600.00	<5	<5
Hexachloroethane	7.3	6.7	27,000.00	<5	<5
2-Hexanone	1,000.00	NA	4,200,000.00	<50	<50
Isopropylbenzene	800	28	56,000.00	<1	<1
4-Methyl-2-pentanone	1,800.00	NA	20,000,000.00	<50	<50
Methyl tert-butyl ether	40	7,100.00	47,000,000.00	<4	<4
Methylene chloride	5	1,500.00	220,000.00	<5	<5
n-Propylbenzene	80	NA	NA	<1	<1
Styrene	100	80	170,000.00	<1	<1
1,1,1,2-Tetrachloroethane	77	NA	15,000.00	<1	<1
1,1,2,2-Tetrachloroethane	8.5	78	12,000.00	<1	<1
Tetrachloroethene	5	60	25,000.00	<1	<1
Toluene	790	270	530,000.00	<1	<1
1,2,4-Trichlorobenzene	70	99	300,000.00	<5	<5
1,1,1-Trichloroethane	200	89	660,000.00	<1	<1
1,1,2-Trichloroethane	5	330	17,000.00	<1	<1
Trichloroethene	5	200	2,200.00	<1	<1
Trichlorofluoromethane	2,600.00	NA	1,100,000.00	<1	<1
1,2,3-Trichloropropane	42	NA	8,300.00	<1	<1
1,2,4-Trimethylbenzene	63	17	56,000.00	<1	<1
1,3,5-Trimethylbenzene	72	45	61,000.00	<1	<1
Vinyl chloride	2	13	1,100.00	<1	<1
m,p-Xylene	280	41	190,000.00	<2	<2
cis-1,3-Dichloropropene	NA	NA	NA	<1	<1
trans-1,3-Dichloropropene	NA	NA	NA	<1	<1
4-Chlorotoluene	NA	NA	NA	<1	<1
trans-1,4-Dichloro-2-butene	NA	NA	NA	<1	<1

TABLE B
SUMMARY OF GROUNDWATER ANALYTICAL DATA - VOCs
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

WELL	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - DRINKING WATER USES	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - GROUNDWATER SURFACE INTERFACE	PART 201 RESIDENTAIL GROUNDWATER CLEANUP CRITERIA - INDOOR AIR INHALATION	MW-6S	MW-7S
LABORATORY ID				1710069-01A	1710069-02A
SAMPLE DATE				10/16/2017	10/16/2017
Parameter (ug/L)					
1,3-Dichloropropane	NA	NA	NA	<1	<1
1,1-Dichloropropene	NA	NA	NA	<1	<1
2,2-Dichloropropane	NA	NA	NA	<1	<1
Iodomethane	NA	NA	NA	<1	<1
Bromochloromethane	NA	NA	NA	<1	<1
1,2,3-Trichlorobenzene	NA	NA	NA	<5	<5
o-Xylene	NA	NA	NA	<1	<1
4-Isopropyltoluene	NA	NA	NA	<1	<1

NOTES:

1. Concentration and criteria units are reported in nano-grams per liter (ng/L) or parts per trillion (ppt) for PFAS, and micro-grams per liter (ug/L) or parts per billion (ppb) for inorganics, and volatile organic compounds; "< 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. Highlighted Italic number with thick line border or italic chemical indicates that compound was detected above one of the listed cleanup criteria or screening levels.

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

4. MDEQ Part 201 Residential Groundwater Cleanup Criteria for inorganics, and VOCs were based on MDEQ's Part 201 Cleanup Crtieria and Screening Levels dated December 2013.

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411004401001	411004401001	411004200051	411004200051	411004200056	411004200035	411004200034	411004200033
GZAParcelNum		3	3	4	4	5	6	7	8
Sample Name		2115 House	2115 House	8025 Herrington	8025 Herrington	2200 Brent	8081 Herrington	2179 Brittany	2145 Brittany
Contact Name		[redacted]							
Address_UC		2115 HOUSE ST NE	2115 HOUSE ST NE	8025 HERRINGTON AVE NE	8025 HERRINGTON AVE NE	2200 BRENT DR NE	8081 HERRINGTON AVE NE	2179 BRITTANY DR NE	2145 BRITTANY DR NE
Laboratory ID		K1703984-006	K1706136-002	K1703984-005	K1706136-001	K1703984-007	K1703984-008	K1703984-001	K1703984-003
Sample Date		04/19/2017	06/12/2017	04/19/2017	06/12/2017	04/19/2017	04/19/2017	04/19/2017	04/19/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.6	<4.3	<4.8	<4 3	<4.8	<4.6	<4.8	<4.5
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.6	<4.3	<4.8	<4 3	<4.8	<4.6	<4.8	<4.5
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.6	<4.3	<4.8	<4 3	<4.8	<4.6	<4.8	<4.5
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.6	<4.3	<4.8	<4 3	<4.8	<4.6	<4.8	<4.5
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.6	<4.3	<4.8	<4.3	<4.8	<4.6	<4.8	<4.5
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.6	<4.3	<4.8	<4.3	<4.8	<4.6	<4.8	<4.5
Perfluorobutane sulfonic acid (PFBS)	NA	<4.6	5.3	<4.8	<4 3	<4.8	<4.6	5.1	9.8
Perfluorobutanoic acid (PFBA)	NA	<9.3	<8.6	<9.6	<8.6	<9.6	<9.3	<9.6	<8.9
Perfluorodecane sulfonic acid (PFDS)	NA	<4.6	<4.3	<4.8	<4.3	<4.8	<4.6	<4.8	<4.5
Perfluorodecanoic acid (PFDA)	NA	<4.6	<4.3	<4.8	<4.3	<4.8	<4.6	<4.8	<4.5
Perfluorododecanoic acid (PFDoDA)	NA	<4.6	<4.3	<4.8	<4.3	<4 8	<4.6	<4.8	<4.5
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.6	<4.3	<4.8	<4.3	<4 8	<4.6	<4.8	<4.5
Perfluoroheptanoic acid (PFHpA)	NA	<4.6	<4.3	<4.8	<4.3	<4 8	<4.6	<4.8	<4.5
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.6	8 8	<4.8	<4.3	<4 8	<4.6	5.8	6.3
Perfluorohexanoic acid (PFHxA)	NA	70	<5	50	<5	<4 8	<4.6	<4.8	<4.5
Perfluorononanoic acid (PFNA)	NA	<4.6	<4.3	<4.8	<4.3	<4 8	<4.6	<4.8	<4.5
Perfluorooctane sulfonamide (FOSA)	NA	<4.6	<4.3	<4.8	<4.3	<4 8	<4.6	<4.8	<4.5
Perfluorooctane sulfonic acid (PFOS)	70	<4.6	5 9	<4.8	<4.3	<4 8	<4.6	<4.8	6.9
Perfluorooctanoic acid (PFOA)	70	<1 9	3 9	2.2	<1.7	<1 9	<1.9	3.1	7.5
Perfluoropentanoic acid (PFPeA)	NA	25	<4.3	20	<4.3	<4 8	<4.6	<4.8	<4.5
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.6	<4.3	<4.8	<4.3	<4 8	<4.6	<4.8	<4.5
Perfluorotridecanoic acid (PFTrDA)	NA	<4.6	<4.3	<4.8	<4.3	<4 8	<4.6	<4.8	<4.5
Perfluoroundecanoic acid (PFUnDA)	NA	<4.6	<4.3	<4.8	<4.3	<4 8	<4.6	<4.8	<4.5

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411004200032	411004200059	411004300010	411004300023	411004300022	411004300063	411004300041	411004300041
GZAParcelNum		9	10	11	12	13	14	15	15
Sample Name		2109 Brittany	2150 Brent	1781 House	1767 House	1711 House	7885 Imperial Pine	7879 Imperial Pine	7879 Imperial Pine
Contact Name		[redacted]							
Address_UC		2109 BRITTANY DR NE	2150 BRENT DR NE	1781 HOUSE ST NE	1767 HOUSE ST NE	1711 HOUSE ST NE	7885 IMPERIAL PINE DR NE	7879 IMPERIAL PINE DR NE	7879 IMPERIAL PINE DR NE
Laboratory ID		K1703984-002	K1703984-004	K1708712-002	K1707746-002	K1707878-001	K1707885-002	K1708712-001	K1710171-018
Sample Date		04/19/2017	04/19/2017	08/16/2017	07/18/2017	07/24/2017	07/24/2017	08/16/2017	09/20/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.8	<4.6	<4.2	<4.4	<5	<5	<4.2	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.8	<4.6	<4.2	<4.4	<5	<5	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.8	<4.6	<4.2	<4.4	<5	<5	<4.2	<4.2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.8	<4.6	<4.2	<4.4	<5	<5	<4.2	<4.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.8	<4.6	<4.2	<4.4	<5	<5	<4.2	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.8	<4.6	<4.2	<4.4	<5	<5	<4.2	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	10	<4.6	78	220	130	92	93	100
Perfluorobutanoic acid (PFBA)	NA	<9.6	<9.3	12	31	20	12	12	11
Perfluorodecane sulfonic acid (PFDS)	NA	<4.8	<4.6	<4.2	<4.4	<5	<5	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.8	<4.6	<4.2	<4.4	<5	<5	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.8	<4.6	<4.2	<4.4	<5	<5	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.8	<4.6	13	33	12	23	<4.2	6.6
Perfluoroheptanoic acid (PFHpA)	NA	<4.8	<4.6	34	78	27	52	38	31
Perfluorohexane sulfonic acid (PFHxS)	NA	4 8	<4.6	140	320	99	300	180	160
Perfluorohexanoic acid (PFHxA)	NA	<4.8	8.5	55	110	74	53	52	47
Perfluorononanoic acid (PFNA)	NA	<4.8	<4.6	<4.2	<4.4	<5	7.9	<4.2	4.5
Perfluorooctane sulfonamide (FOSA)	NA	<4.8	<4.6	<4.2	<4.4	<5	<5	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	8.4	<4.6	***110***	***91***	65	47	5.2	4.5
Perfluorooctanoic acid (PFOA)	70	8	<1.9	54	***110***	52	***180***	***93***	***150***
Perfluoropentanoic acid (PFPeA)	NA	<4.8	<4.6	15	42	30	20	16	14
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.8	<4.6	<4.2	<4.4	<5	<5	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4.8	<4.6	<4.2	<4.4	<5	<5	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4.8	<4.6	<4.2	<4.4	<5	<5	<4.2	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411004300041	411004300042	411004300036	411004300036	411004300036	411004300054	411004300054	411004300054
GZAParcelNum		15	16	17	17	17	18	18	18
Sample Name		7879 Imperial Pine - F	7853 Imperial Pine	1850 House	1850 House-2	1850 House-3	1786 House	1786 House	1786 House
Contact Name		[redacted]							
Address_UC		7879 IMPERIAL PINE DR NE	7853 IMPERIAL PINE DR NE	1850 HOUSE ST NE	1850 HOUSE ST NE	1850 HOUSE ST NE	1786 HOUSE ST NE	1786 HOUSE ST NE	1786 HOUSE ST NE
Laboratory ID		K1710171-017	K1707746-017	K1707746-004	K1708712-007	K1708712-009	K1707746-016	K1708712-006	K1710171-022
Sample Date		09/20/2017	07/20/2017	07/18/2017	08/16/2017	08/17/2017	07/20/2017	08/16/2017	09/20/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.4	<4.2	<4 3	<4.3	<4.4	<4.3	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.4	<4.2	<4 3	<4.3	<4.4	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.4	<4.2	<4 3	<4.3	<4.4	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.4	<4.2	<4 3	<4.3	<4.4	<4.3	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.4	<4.2	<4 3	<4.3	<4.4	<4.3	<4.3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.4	<4.2	<4 3	<4.3	<4.4	<4.3	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	49	1400	1800	<4.3	170	210	290
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.8	280	410	<8.7	88	130	130
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.4	<4.2	<4 3	<4.3	<4.4	<4.3	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.4	<4.2	<4 3	<4.3	<4.4	<4.3	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.4	<4.2	<4 3	<4.3	<4.4	<4.3	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.4	800	1600	<4.3	380	600	500
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	11	1200	1400	<4.3	300	470	480
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	34	3800	4500	<4.3	2900	3800	3100
Perfluorohexanoic acid (PFHxA)	NA	<4.2	16	800	1000	<5	370	470	490
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.4	28	43	<4.3	8.4	12	9.6
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.4	<4.2	<4 3	<4.3	<4.4	<4.3	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.4	***23000***	***32000***	6.1	***230***	***320***	***220***
Perfluorooctanoic acid (PFOA)	70	<1.7	15	***4600***	***5800***	<1.7	***1200***	***1700***	***2000***
Perfluoropentanoic acid (PFPeA)	NA	<4.2	5.1	350	510	<4.3	88	150	200
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.2	<4.4	<4.2	<4 3	<4.3	<4.4	<4.3	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4.2	<4.4	<4.2	<4 3	<4.3	<4.4	<4.3	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4.2	<4.4	<4.2	<4.3	<4.3	<4.4	<4.3	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411004300057	411004300052	411004300051	411004300050	411004300050	411004300049	411004300060	411004300045
GZAParcelNum		19	20	21	22	22	23	24	25
Sample Name		1778 House	1698 House	1682 House	1667 House	1676 House	1664 House	1654 House	1640 House
Contact Name		[redacted]							
Address_UC		1778 HOUSE ST NE	1698 HOUSE ST NE	1682 HOUSE ST NE	1676 HOUSE ST NE	1676 HOUSE ST NE	1664 HOUSE ST NE	1654 HOUSE ST NE	1640 HOUSE ST NE
Laboratory ID		K1707746-003	K1707746-014	K1707746-015	K1708712-004	K1710171-016	K1708712-003	K1707746-006	K1707746-008
Sample Date		07/18/2017	07/20/2017	07/20/2017	08/16/2017	09/20/2017	08/16/2017	07/19/2017	07/19/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.4	<4.2	<4.4	<4.2	<4.3	<4.4	<4.4
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.4	<4.2	<4.4	<4.2	<4.3	<4.4	<4.4
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.4	<4.2	<4.4	<4.2	<4.3	<4.4	<4.4
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.4	<4.2	<4.4	<4.2	<4.3	<4.4	<4.4
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.4	<4.2	<4.4	<4.2	<4.3	<4.4	<4.4
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.4	<4.2	<4.4	<4.2	<4.3	<4.4	<4.4
Perfluorobutane sulfonic acid (PFBS)	NA	83	230	15	6.1	6	<4.3	<4.4	4.8
Perfluorobutanoic acid (PFBA)	NA	12	32	<8.5	<8 8	<8.3	<8.7	<8.8	<8.8
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.4	<4.2	<4.4	<4.2	<4.3	<4.4	<4.4
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.4	<4.2	<4.4	<4.2	<4.3	<4.4	<4.4
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.4	<4.2	<4.4	<4.2	<4.3	<4.4	<4.4
Perfluoroheptane sulfonic acid (PFHpS)	NA	31	22	<4.2	<4.4	<4.2	<4.3	<4.4	<4.4
Perfluoroheptanoic acid (PFHpA)	NA	37	75	<4.2	10	9.2	<4.3	<4.4	<4.4
Perfluorohexane sulfonic acid (PFHxS)	NA	210	290	11	24	22	<4.3	<4.4	<4.4
Perfluorohexanoic acid (PFHxA)	NA	51	120	<5	8.4	7	<5	<5	<5
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.4	<4.2	<4.4	<4.2	<4.3	<4.4	<4.4
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.4	<4.2	<4.4	<4 2	<4.3	<4.4	<4.4
Perfluorooctane sulfonic acid (PFOS)	70	69	35	<4.2	<4.4	<4 2	<4.3	<4.4	<4.4
Perfluorooctanoic acid (PFOA)	70	***110***	***95***	12	46	57	3.1	2.4	<1.8
Perfluoropentanoic acid (PFPeA)	NA	23	45	<4.2	<4.4	<4 2	<4.3	<4.4	<4.4
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.2	<4.4	<4.2	<4.4	<4 2	<4.3	<4.4	<4.4
Perfluorotridecanoic acid (PFTrDA)	NA	<4.2	<4.4	<4.2	<4.4	<4 2	<4.3	<4.4	<4.4
Perfluoroundecanoic acid (PFUnDA)	NA	<4.2	<4.4	<4.2	<4.4	<4 2	<4.3	<4.4	<4.4

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411005400011	411005400031	411005400008	411005400025	411009100043	411009100041	411009100042	411009200037
GZAParcelNum		26	27	28	29	30	31	32	33
Sample Name		1655 House	1625 House	1601 House	1597 House	1600 House	1580 House	1584 House	7557 Chandler
Contact Name		[redacted]							
Address_UC		1655 HOUSE ST NE	1625 HOUSE ST NE	1601 HOUSE ST NE	1597 HOUSE ST NE	1600 HOUSE ST NE	1580 HOUSE ST NE	1584 HOUSE ST NE	7557 CHANDLER DR NE
Laboratory ID		K1709007-001	K1707885-001	K1708712-005	K1707746-005	K1707746-007	K1707746-013	K1707746-001	K1707746-009
Sample Date		08/23/2017	07/24/2017	08/16/2017	07/18/2017	07/19/2017	07/20/2017	07/18/2017	07/19/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<5	<4.4	<4 2	<4.4	<4.4	<4.4	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<5	<4.4	<4 2	<4.4	<4.4	<4.4	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<5	<4.4	<4 2	<4.4	<4.4	<4.4	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<5	<4.4	<4 2	<4.4	<4.4	<4.4	<4 2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<5	<4.4	<4 2	<4.4	<4.4	<4.4	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<5	<4.4	<4 2	<4.4	<4.4	<4.4	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.3	<5	<4.4	<4 2	60	92	<4.4	<4.2
Perfluorobutanoic acid (PFBA)	NA	<8.6	<10	<8.8	<8 5	<8.8	22	<8.8	<8.5
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<5	<4.4	<4 2	<4.4	<4.4	<4.4	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.3	<5	<4.4	<4 2	<4.4	<4.4	<4.4	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<5	<4.4	<4.2	<4.4	<4.4	<4.4	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<5	<4.4	<4.2	<4.4	<4.4	<4.4	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<5	<4.4	<4.2	<4.4	<4.4	<4.4	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	<5	<4.4	<4.2	<4.4	<4.4	<4.4	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<5	<5	<5	<5	<5	41	<5	<5
Perfluorononanoic acid (PFNA)	NA	<4.3	<5	<4.4	<4.2	<4.4	<4.4	<4.4	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.3	<5	<4.4	<4.2	<4.4	<4.4	<4.4	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.3	<5	<4.4	8.6	<4.4	<4.4	<4.4	<4.2
Perfluorooctanoic acid (PFOA)	70	<1.7	<2	<1.8	2.5	<1 8	<1.8	<1.8	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.3	<5	<4.4	<4.2	<4.4	27	<4.4	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.3	<5	<4.4	<4.2	<4.4	<4.4	<4.4	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4.3	<5	<4.4	<4.2	<4.4	<4.4	<4.4	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 3	<5	<4.4	<4.2	<4.4	<4.4	<4.4	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411009200023	411009200040	411009251029	411005400030	411005400045	411004200058	411009100011	411009100015
GZAParcelNum		34	35	36	37	38	39	41	42
Sample Name		7565 Chandler	7415 Herrington	7373 Harrington	1617 House	1447 House	2100 Brent	7401 CHANLER	7415 Chandler
Contact Name		[redacted]							
Address_UC		7565 CHANDLER DR NE	7415 HERRINGTON AVE NE	7373 HERRINGTON AVE NE	1617 HOUSE ST NE	1447 HOUSE ST NE	2100 BRENT DR NE	7401 CHANDLER DR NE	7415 CHANDLER DR NE
Laboratory ID		K1709007-003	K1707885-006	K1707746-010	K1707885-003	K1707885-005	K1709007-002	K1709967-005	K1711115-008
Sample Date		08/23/2017	07/25/2017	07/19/2017	07/24/2017	07/25/2017	08/23/2017	09/15/2017	10/12/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<5	<4.2	<5	<5	<4.2	<4.2	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<5	<4.2	<5	<5	<4.2	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<5	<4.2	<5	<5	<4.2	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<5	<4.2	<5	<5	<4.2	<4.2	<4 2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<5	<4.2	<5	<5	<4.2	<4.2	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<5	<4.2	<5	<5	<4.2	<4.2	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	<5	<4.2	<5	<5	6.5	5.6	<4.2
Perfluorobutanoic acid (PFBA)	NA	<8.3	<10	<8.5	<10	<10	<8.3	<8.3	<8.5
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<5	<4.2	<5	<5	<4.2	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.2	<5	<4.2	<5	<5	<4.2	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<5	<4.2	<5	<5	<4.2	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<5	<4.2	<5	<5	<4.2	<4.2	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<5	<4.2	<5	<5	<4.2	<4.2	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	7.2	6.6	<4.2	<5	<5	<4.2	5.2	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<5	<5	<5	<5	<5	<5	<4.2	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.2	<5	<4.2	<5	<5	<4.2	<4.2	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<5	<4.2	<5	<5	<4.2	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<5	<4.2	<5	<5	5 3	<4.2	<4.2
Perfluorooctanoic acid (PFOA)	70	6.1	3.4	3.5	<2	<2	8 2	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.2	<5	<4.2	<5	<5	<4.2	<4.2	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<5	<4.2	<5	<5	<4.2	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<5	<4.2	<5	<5	<4.2	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<5	<4.2	<5	<5	<4.2	<4.2	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411009100026	411009100027	411009100013	411009200025	411009200022	411009200039	411009200019	411009200018
GZAParcelNum		43	44	45	46	47	48	49	50
Sample Name		7419 CHANDLER	7425 CHANDLER	7471/7485 CHANDLER	7501 CHANDLER	7555 CHANDLER	7435 HERRINGTON	7445 HERRINGTON	7509 Herrington
Contact Name		[redacted]							
Address_UC		7419 CHANDLER DR NE	7425 CHANDLER DR NE	7485 CHANDLER DR NE	7501 CHANDLER DR NE	7555 CHANDLER DR NE	7435 HERRINGTON AVE NE	7445 HERRINGTON AVE NE	7509 HERRINGTON AVE NE
Laboratory ID		K1709831-005	K1709831-003	K1709831-006	K1709831-011	K1711414-007	K1711115-009	K1711115-010	K1710171-008
Sample Date		09/14/2017	09/14/2017	09/14/2017	09/13/2017	10/19/2017	10/12/2017	10/12/2017	09/19/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.2	<4.4	<4 2	<4.1	<4.2	<4.3	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.2	<4.4	<4 2	<4.1	<4.2	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.2	<4.4	<4 2	<4.1	<4.2	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.4	<4 2	<4.1	<4.2	<4.3	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.2	<4.4	<4 2	<4.1	<4.2	<4.3	<4 3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.4	<4 2	<4.1	<4.2	<4.3	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	320	140	45	58	<4.1	<4.2	<4.3	<4.3
Perfluorobutanoic acid (PFBA)	NA	70	30	<8.8	14	<8.1	<8.5	<8.6	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.2	<4.4	<4 2	<4.1	<4.2	<4.3	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.2	<4.4	<4 2	<4.1	<4.2	<4.3	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.2	<4.4	<4 2	<4.1	<4.2	<4.3	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	230	330	4.7	9.8	<4.1	<4.2	<4.3	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	330	140	48	43	4.2	<4.2	<4.3	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	1700	450	120	120	18	<4.2	<4.3	<4.3
Perfluorohexanoic acid (PFHxA)	NA	330	95	45	43	<4.1	<4.2	<4.3	<4.3
Perfluorononanoic acid (PFNA)	NA	31	<4.2	<4.4	<4.2	<4.1	<4.2	<4.3	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.3	<4.2	<4.4	<4.2	<4.1	<4.2	<4.3	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	***260***	***9700***	<4.4	7.9	<4.1	<4.2	<4.3	<4.3
Perfluorooctanoic acid (PFOA)	70	***1700***	***610***	***120***	***140***	28	<1.7	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	94	36	8.5	16	<4.1	<4.2	<4.3	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.3	<4.2	<4.4	<4.2	<4.1	<4.2	<4.3	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4.3	<4.2	<4.4	<4.2	<4.1	<4.2	<4.3	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4.3	<4.2	<4.4	<4.2	<4.1	<4.2	<4.3	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411009200014	411009200002	411009200024	411004451008	411004451007	411004451006	411004451005	411004451004
GZAParcelNum		51	52	53	54	55	56	57	58
Sample Name		7531 HERRINGTON	7585 HERRINGTON	7601 HERRINGTON	7641 Herrington	7651 HERRINGTON	7649 Herrington	7661 Herrington	7667 Herrington
Contact Name		[redacted]							
Address_UC		7531 HERRINGTON AVE NE	7585 HERRINGTON AVE NE	7601 HERRINGTON AVE NE	7641 HERRINGTON AVE NE	7651 HERRINGTON AVE NE	7649 HERRINGTON AVE NE	7661 HERRINGTON AVE NE	7667 HERRINGTON AVE NE
Laboratory ID		K1709967-013	K1710771-020	K1709831-010	K1710171-007	K1709831-021	K1710171-006	K1710171-005	K1710171-004
Sample Date		09/15/2017	10/04/2017	09/14/2017	09/19/2017	09/14/2017	09/19/2017	09/19/2017	09/19/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.2	<4.2	<4 3	<4.3	5.3	<4.4	12
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.2	<4.2	<4 3	<4.3	<4.2	<4.4	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.2	<4.2	<4 3	<4.3	<4.2	<4.4	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.2	<4 3	<4.3	<4.2	<4.4	<4.3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.2	<4.2	<4 3	<4.3	<4.2	<4.4	<4.3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.2	<4 3	<4.3	<4.2	<4.4	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	<4.3	<4.2	<4.2	12	<4.3	<4.2	<4.4	4.8
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.5	<8.3	<8.6	<8.6	<8.3	<8.8	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.2	<4.2	<4.3	<4.3	<4.2	<4.4	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.2	<4.2	<4.3	<4.3	<4.2	<4.4	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.2	<4.2	<4.3	<4.3	<4.2	<4.4	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.2	<4.2	<4.3	<4.3	4 3	<4.4	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<4.2	<4.2	<4.3	<4 3	<4.2	<4.4	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	<4.2	<4.2	<4.3	<4 3	8 3	<4.4	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<4.3	<4.2	<4.2	<4.3	<4 3	<4.2	<4.4	4.5
Perfluorononanoic acid (PFNA)	NA	<4.3	<4.2	<4.2	<4.3	<4 3	<4.2	<4.4	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.3	<4.2	<4.2	<4.3	<4 3	<4.2	<4.4	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4.3	<4.2	4.3	<4.3	14	9 5	<4.4	<4.3
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.7	3.8	5.9	11	18	<1.8	4.3
Perfluoropentanoic acid (PFPeA)	NA	<4 3	<4.2	<4.2	<4.3	<4 3	<4.2	<4.4	5.1
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 3	<4.2	<4.2	<4.3	<4 3	<4.2	<4.4	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4 3	<4.2	<4.2	<4.3	<4 3	<4.2	<4.4	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4 3	<4.2	<4.2	<4.3	<4 3	<4.2	<4.4	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411004451003	411004451010	411004451012	411004451011	411004451001	411004426002	411004426003	411004427023
GZAParcelNum		59	60	61	62	63	64	65	66
Sample Name		7737 Herrington	7747 Herrington	7777 HERRINGTON	7757 HERRINGTON	7863 Herrington	7864 HERRINGTON	7830 Herrington	2263 STRAWBERRY FARMS
Contact Name		[redacted]							
Address_UC		7737 HERRINGTON AVE NE	7747 HERRINGTON AVE NE	7777 HERRINGTON AVE NE	7757 HERRINGTON AVE NE	7863 HERRINGTON AVE NE	7864 HERRINGTON AVE NE	7830 HERRINGTON AVE NE	2263 STRAWBERRY FARMS ST NE
Laboratory ID		K1710171-013	K1710171-003	K1709967-008	K1709967-007	K1710171-019	K1709831-023	K1710171-002	K1709967-011
Sample Date		09/19/2017	09/19/2017	09/15/2017	09/15/2017	09/20/2017	09/14/2017	09/19/2017	09/15/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.2	<4.2	<4 3	<4.2	<4.3	26	<4.1
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.2	<4.2	<4 3	<4.2	<4.3	<4.2	<4.1
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.2	<4.2	<4 3	<4.2	<4.3	<4.2	<4.1
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.2	<4 3	<4.2	<4.3	<4.2	<4.1
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.2	<4.2	<4 3	<4.2	<4.3	<4.2	<4.1
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.2	<4 3	<4.2	<4.3	<4.2	<4.1
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	15	<4.2	12	67	<4.3	<4.2	<4.1
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.3	<8.3	<8.6	<8.3	<8.6	<8.3	<8.1
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.2	<4.2	<4 3	<4.2	<4.3	<4.2	<4.1
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.2	<4.2	<4 3	<4.2	<4.3	<4.2	<4.1
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.2	<4.2	<4.3	<4.2	<4.3	<4.2	<4.1
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.2	<4.2	<4.3	<4.2	<4.3	<4.2	<4.1
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.2	<4.2	<4.3	<4.2	<4.3	<4.2	<4.1
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.2	<4.2	<4.3	<4.2	<4.3	<4.2	<4.1
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.2	<4.2	<4.3	<4 2	<4.3	<4.2	<4.1
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.2	<4.2	<4.3	<4 2	<4.3	<4.2	<4.1
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.2	<4.2	<4.3	<4 2	<4.3	<4.2	<4.1
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.2	<4.2	<4.3	<4 2	<4.3	<4.2	<4.1
Perfluorooctanoic acid (PFOA)	70	<1.7	3 2	<1.7	<1.7	3.3	<1.7	<1.7	<1.6
Perfluoropentanoic acid (PFPeA)	NA	<4 2	<4.2	<4.2	<4.3	<4 2	<4.3	<4.2	<4.1
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.2	<4.2	<4.3	<4 2	<4.3	<4.2	<4.1
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.2	<4.2	<4.3	<4 2	<4.3	<4.2	<4.1
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.2	<4.2	<4.3	<4 2	<4.3	<4.2	<4.1

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411004427022	411004427021	411004427019	411004427020	411004427017	411004427018	411004427016	411004427015
GZAParcelNum		67	68	69	70	71	72	73	74
Sample Name		2323 STRAWBERRY FARMS	7777 STRAWBERRY LANE	7817 STRAWBERRY LANE	7803 STRAWBERRY LANE	7857 Strawberry Lane	7835 STRAWBERY LANE	7909 STRAWBERRY LANE	7917 STRAWBERRY LANE
Contact Name		[redacted]							
Address_UC		2323 STRAWBERRY FARMS ST NE	7777 STRAWBERRY LN NE	7817 STRAWBERRY LN NE	7803 STRAWBERRY LN NE	7857 STRAWBERRY LN NE	7835 STRAWBERRY LN NE	7909 STRAWBERRY LN NE	7917 STRAWBERRY LN NE
Laboratory ID		K1709967-019	K1709831-025	K1709967-010	K1709967-012	K1710171-023	K1709967-009	K1709967-018	K1709967-017
Sample Date		09/18/2017	09/14/2017	09/15/2017	09/15/2017	09/20/2017	09/15/2017	09/18/2017	09/18/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.1	<4.4	<4.2	<4 3	<4.2	<4.2	<4.1	<4.1
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.1	<4.4	<4.2	<4 3	<4.2	<4.2	<4.1	<4.1
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.1	<4.4	<4.2	<4 3	<4.2	<4.2	<4.1	<4.1
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.1	<4.4	<4.2	<4 3	<4.2	<4.2	<4.1	<4.1
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.1	<4.4	<4.2	<4 3	<4.2	<4.2	<4.1	<4.1
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.1	<4.4	<4.2	<4 3	<4.2	<4.2	<4.1	<4.1
Perfluorobutane sulfonic acid (PFBS)	NA	<4.1	<4.4	<4.2	<4 3	<4.2	<4.2	<4.1	<4.1
Perfluorobutanoic acid (PFBA)	NA	<8.1	<8.8	<8.3	<8.6	<8.3	<8.3	<8.1	<8.1
Perfluorodecane sulfonic acid (PFDS)	NA	<4.1	<4.4	<4.2	<4 3	<4.2	<4.2	<4.1	<4.1
Perfluorodecanoic acid (PFDA)	NA	<4.1	<4.4	<4.2	<4 3	<4.2	<4.2	<4.1	<4.1
Perfluorododecanoic acid (PFDoDA)	NA	<4.1	<4.4	<4.2	<4 3	<4.2	<4.2	<4.1	<4.1
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.1	<4.4	<4.2	<4 3	<4.2	<4.2	<4.1	<4.1
Perfluoroheptanoic acid (PFHpA)	NA	<4.1	<4.4	<4.2	<4 3	<4.2	<4.2	<4.1	<4.1
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.1	<4.4	<4.2	<4 3	<4.2	<4.2	<4.1	<4.1
Perfluorohexanoic acid (PFHxA)	NA	<4.1	<4.4	<4.2	<4 3	<4.2	<4.2	<4.1	<4.1
Perfluorononanoic acid (PFNA)	NA	<4.1	<4.4	<4.2	<4 3	<4.2	<4.2	<4.1	<4.1
Perfluorooctane sulfonamide (FOSA)	NA	<4.1	<4.4	<4.2	<4.3	<4.2	<4.2	<4.1	<4.1
Perfluorooctane sulfonic acid (PFOS)	70	<4.1	<4.4	<4.2	<4.3	<4.2	<4.2	<4.1	<4.1
Perfluorooctanoic acid (PFOA)	70	<1.6	1.9	<1.7	<1.7	<1.7	<1.7	<1.6	<1.6
Perfluoropentanoic acid (PFPeA)	NA	<4.1	<4.4	<4.2	<4.3	<4.2	<4.2	<4.1	<4.1
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.1	<4.4	<4.2	<4.3	<4 2	<4.2	<4.1	<4.1
Perfluorotridecanoic acid (PFTrDA)	NA	<4.1	<4.4	<4.2	<4.3	<4 2	<4.2	<4.1	<4.1
Perfluoroundecanoic acid (PFUnDA)	NA	<4.1	<4.4	<4.2	<4.3	<4 2	<4.2	<4.1	<4.1

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411004427014	411004427013	411004427024	411004427025	411009100047	411005400024	411005400037	411008200049
GZAParcelNum		75	76	77	78	79	80	81	82
Sample Name		7925 STRAWBERRY LANE	7933 STRAWBERRY LANE	7969 Strawberry Lane	7985 STRAWBERRY LANE	1572 HOUSE	1499 HOUSE	1339 HOUSE	1430 HOUSE
Contact Name		[redacted]							
Address_UC		7925 STRAWBERRY LN NE	7933 STRAWBERRY LN NE	7969 STRAWBERRY LN NE	7985 STRAWBERRY LN NE	1572 HOUSE ST NE	1499 HOUSE ST NE	1339 HOUSE ST NE	1430 HOUSE ST NE
Laboratory ID		K1709967-016	K1709967-015	K1710171-001	K1709967-014	K1709967-020	K1709831-018	K1709831-012	K1709967-001
Sample Date		09/18/2017	09/18/2017	09/19/2017	09/18/2017	09/18/2017	09/13/2017	09/13/2017	09/15/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.1	<4.1	<4.2	<4.1	<4.3	<4.2	<4.4	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.1	<4.1	<4.2	<4.1	<4.3	<4.2	<4.4	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.1	<4.1	<4.2	<4.1	<4.3	<4.2	<4.4	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.1	<4.1	<4.2	<4.1	<4.3	<4.2	<4.4	<4 2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.1	<4.1	<4.2	<4.1	<4.3	<4.2	<4.4	<4 2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.1	<4.1	<4.2	<4.1	<4.3	<4.2	<4.4	<4 2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.1	<4.1	<4.2	<4.1	<4.3	<4.2	<4.4	<4 2
Perfluorobutanoic acid (PFBA)	NA	<8.1	<8.1	<8.3	<8.1	<8.6	<8.3	<8.8	<8.3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.1	<4.1	<4.2	<4.1	<4.3	<4.2	<4.4	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.1	<4.1	<4.2	<4.1	<4.3	<4.2	<4.4	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.1	<4.1	<4.2	<4.1	<4.3	<4.2	<4.4	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.1	<4.1	<4.2	<4.1	<4.3	<4.2	<4.4	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.1	<4.1	<4.2	<4.1	<4.3	<4.2	<4.4	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.1	<4.1	<4.2	<4.1	<4.3	<4.2	<4.4	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.1	<4.1	<4.2	<4.1	<4.3	<4.2	<4.4	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.1	<4.1	<4.2	<4.1	<4.3	<4.2	<4.4	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.1	<4.1	<4.2	<4.1	<4 3	<4.2	<4.4	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.1	<4.1	<4.2	<4.1	<4 3	<4.2	<4.4	<4.2
Perfluorooctanoic acid (PFOA)	70	<1.6	<1.6	4.3	3.9	<1.7	<1.7	<1.8	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.1	<4.1	<4.2	<4.1	<4 3	<4.2	<4.4	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.1	<4.1	<4.2	<4.1	<4 3	<4.2	<4.4	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4.1	<4.1	<4.2	<4.1	<4 3	<4.2	<4.4	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4.1	<4.1	<4.2	<4.1	<4 3	<4.2	<4.4	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411008200019	411005400018	411008200012	411005400019	411008200015	411004127007	411004127008	411004127006
GZAParcelNum		83	84	85	86	87	88	89	90
Sample Name		1440 HOUSE	1475 HOUSE	1480 HOUSE	1495 HOUSE	1500 HOUSE	8215 SQUIREWOOD	8200 SQUIREWOOD	8239 SQUIREWOOD
Contact Name		[redacted]							
Address_UC		1440 HOUSE ST NE	1475 HOUSE ST NE	1480 HOUSE ST NE	1495 HOUSE ST NE	1500 HOUSE ST NE	8215 SQUIREWOOD DR NE	8200 SQUIREWOOD DR NE	8239 SQUIREWOOD DR NE
Laboratory ID		K1709831-013	K1709831-016	K1709831-014	K1709831-017	K1709831-015	K1709831-004	K1709967-021	K1709831-002
Sample Date		09/13/2017	09/13/2017	09/13/2017	09/13/2017	09/13/2017	09/14/2017	09/18/2017	09/14/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.3	<4.2	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.3	<4.2	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.3	<4.2	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.3	<4.2	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.3	<4.2	<4.3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.3	<4.2	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.3	<4.2	<4.3
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.6	<8.6	<8.6	<8.6	<8.6	<8.3	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.3	<4.2	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.3	<4.3	<4.3	<4.3	<4.3	<4.2	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.3	<4.3	<4.3	<4.3	<4.3	<4.2	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.3	<4.3	<4.3	<4.3	<4.3	<4.2	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.3	<4.3	<4.3	<4.3	<4.3	<4.2	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.3	<4.3	<4.3	<4 3	<4.3	<4.2	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.3	<4.3	<4.3	<4 3	<4.3	<4.2	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.3	<4.3	<4.3	<4 3	<4.3	<4.2	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.3	<4.3	<4.3	<4 3	<4.3	<4.2	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.3	<4.3	<4.3	<4 3	<4.3	<4.2	<4.3
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	2
Perfluoropentanoic acid (PFPeA)	NA	<4 2	<4.3	<4.3	<4.3	<4 3	<4.3	<4.2	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.3	<4.3	<4.3	<4 3	<4.3	<4.2	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.3	<4.3	<4.3	<4 3	<4.3	<4.2	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.3	<4.3	<4.3	<4 3	<4.3	<4.2	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411004127009	411005200026	411005200029	411004200049	411004200030	411004200045	411004200046	411004200021
GZAParcelNum		91	92	93	94	95	96	97	98
Sample Name		8250 SQUIREWOOD	1546 10 MILE	1460 10 MILE	8151 HERRINGTON	8183 HERRINGTON	8100 HERRINGTON	8092 HERRINGTON	8138 HERRINGTON
Contact Name		[redacted]							
Address_UC		8250 SQUIREWOOD DR NE	1546 10 MILE RD NE	1460 10 MILE RD NE	8151 HERRINGTON AVE NE	8183 HERRINGTON AVE NE	8100 HERRINGTON AVE NE	8092 HERRINGTON AVE NE	8138 HERRINGTON AVE NE
Laboratory ID		K1709967-022	K1709831-019	K1709831-001	K1709967-024	K1709967-023	K1709967-002	K1709967-003	K1709967-026
Sample Date		09/18/2017	09/13/2017	09/14/2017	09/18/2017	09/18/2017	09/15/2017	09/15/2017	09/18/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.1	<4.3	<4.2	<4.1	<4.2	<4.3	<4.2	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.1	<4.3	<4.2	<4.1	<4.2	<4.3	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.1	<4.3	<4.2	<4.1	<4.2	<4.3	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.1	<4.3	<4.2	<4.1	<4.2	<4.3	<4.2	<4 2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.1	<4.3	<4.2	<4.1	<4.2	<4.3	<4.2	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.1	<4.3	<4.2	<4.1	<4.2	<4.3	<4.2	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.1	50	32	8.8	4.6	7.1	<4.2	4.5
Perfluorobutanoic acid (PFBA)	NA	<8.1	9.3	9.5	<8.1	<8.3	<8.6	<8.3	<8.3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.1	<4.3	<4.2	<4.1	<4.2	<4.3	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.1	<4.3	<4.2	<4.1	<4.2	<4.3	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.1	<4.3	<4.2	<4.1	<4.2	<4.3	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.1	<4.3	<4.2	<4.1	<4.2	<4.3	<4.2	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.1	13	9.6	<4.1	<4 2	<4.3	<4.2	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.1	<4.3	<4.2	<4.1	4.7	<4.3	4.5	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.1	53	44	<4.1	<4 2	<4.3	<4.2	6.4
Perfluorononanoic acid (PFNA)	NA	<4.1	<4.3	<4.2	<4.1	<4 2	<4.3	<4.2	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.1	<4.3	<4.2	<4.1	<4 2	<4.3	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.1	<4.3	<4.2	7	8.3	<4.3	<4.2	<4.2
Perfluorooctanoic acid (PFOA)	70	<1.6	4 2	20	7.2	4	9.7	6.4	8.5
Perfluoropentanoic acid (PFPeA)	NA	<4.1	13	16	<4.1	<4 2	<4.3	<4.2	4.8
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.1	<4.3	<4.2	<4.1	<4 2	<4.3	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4.1	<4.3	<4.2	<4.1	<4 2	<4.3	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4.1	<4.3	<4.2	<4.1	<4 2	<4.3	<4.2	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411004200044	411004200048	411009251003	411009251004	411009251005	411009251027	411009200007	411009200029
GZAParcelNum		99	100	101	102	103	104	105	106
Sample Name		8180 HERRINGTON	8004 HERRINGTON	2141 Meek	2147 Meek	2153 Meek	2154 MEEK	7320 Herrington	7426 HERRINGTON (SA)
Contact Name		[redacted]							
Address_UC		8180 HERRINGTON AVE NE	8004 HERRINGTON AVE NE	2141 MEEK DR NE	2147 MEEK DR NE	2153 MEEK DR NE	2154 MEEK DR NE	7320 HERRINGTON AVE NE	7426 HERRINGTON AVE NE
Laboratory ID		K1709967-004	K1709967-027	K1710171-011	K1710171-012	K1710171-010	K1709831-008	K1710171-009	K1710771-011
Sample Date		09/15/2017	09/18/2017	09/19/2017	09/19/2017	09/19/2017	09/14/2017	09/19/2017	10/04/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.1	<4.2	<4.4	<4.3	<4.3	11	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.1	<4.2	<4.4	<4.3	<4.3	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.1	<4.2	<4.4	<4.3	<4.3	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.1	<4.2	<4.4	<4.3	<4.3	<4.3	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.1	<4.2	<4.4	<4.3	<4.3	<4.3	<4.3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.1	<4.2	<4.4	<4.3	<4.3	<4.3	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	11	<4.1	170	130	28	110	<4.3	<4.3
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.1	30	20	<8.6	21	<8.6	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.1	<4.2	<4.4	<4.3	<4.3	<4.3	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.1	<4.2	<4.4	<4.3	<4.3	<4.3	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.1	<4.2	<4.4	<4.3	<4.3	<4.3	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.1	57	30	<4.3	<4.3	<4.3	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.1	96	71	15	80	<4.3	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	4.7	<4.1	360	220	17	110	5	6
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.1	78	61	18	76	<4.3	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.1	<4.2	<4.4	<4.3	<4.3	<4.3	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.1	<4.2	<4.4	<4.3	<4.3	<4.3	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	4.9	<4.1	***110***	38	<4.3	<4.3	<4.3	7.2
Perfluorooctanoic acid (PFOA)	70	14	<1.6	***380***	***360***	43	***200***	2	8.4
Perfluoropentanoic acid (PFPeA)	NA	<4.2	<4.1	34	23	7.6	25	<4.3	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.2	<4.1	<4.2	<4.4	<4.3	<4.3	<4.3	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4.2	<4.1	<4.2	<4.4	<4.3	<4.3	<4.3	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4.2	<4.1	<4.2	<4.4	<4.3	<4.3	<4.3	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411009200043	411010301028	411004476002	411003352001	411005200041	411005200001	411005200002	411005200027
GZAParcelNum		107	108	109	110	200	201	202	203
Sample Name		7608 HERRINGTON	7019 HERRINGTON	7720 HERRRINGTON	2405 STRAWBERRY FARMS	1310 10 MILE	1332 10 MILE	1344 10 MILE	1380 10 MILE
Contact Name		[redacted]							
Address_UC		7608 HERRINGTON AVE NE	7019 HERRINGTON AVE NE	7720 HERRINGTON AVE NE	2405 STRAWBERRY FARMS ST NE	1310 10 MILE RD NE	1332 10 MILE RD NE	1344 10 MILE RD NE	1380 10 MILE RD NE
Laboratory ID		K1709831-009	K1709831-007	K1709831-022	K1709831-024	K1710695-022	K1710611-005	K1710940-001	K1710611-007
Sample Date		09/14/2017	09/14/2017	09/14/2017	09/14/2017	10/03/2017	09/29/2017	10/05/2017	09/29/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.2	<4.2	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.2	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.2	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.2	<4.2	<4 2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.2	<4.2	<4 2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.2	<4.2	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	70	<4.3	<4 3	<4.3	<4.2	<4.2	<4.2
Perfluorobutanoic acid (PFBA)	NA	<8.3	22	<8.6	<8.6	<8.6	<8.5	<8.5	<8.5
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.2	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.2	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.3	<4.3	<4.3	<4.3	<4.2	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.3	<4.3	<4.3	<4.3	<4.2	<4.2	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	35	<4.3	<4.3	<4.3	<4.2	<4.2	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	22	<4.3	<4.3	<4.3	<4.2	<4.2	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.2	69	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.3	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.3	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.3	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2
Perfluorooctanoic acid (PFOA)	70	<1.7	35	2	<1.7	<1.7	<1.7	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4 2	25	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.3	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.3	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.3	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411005200028	411005200024	411005200025	411005200032	411005200042	411004101002	411004101003	411004105002
GZAParcelNum		204	205	206	208	209	210	211	212
Sample Name		1456 10 MILE	1538 10 MILE	1542 10 MILE	1602 10 MILE	1622 10 MILE	1672 10 MILE	1700 10 MILE	1740 10 MILE
Contact Name		[redacted]							
Address_UC		1456 10 MILE RD NE	1538 10 MILE RD NE	1542 10 MILE RD NE	1602 10 MILE RD NE	1622 10 MILE RD NE	1672 10 MILE RD NE	1700 10 MILE RD NE	1740 10 MILE RD NE
Laboratory ID		K1710611-006	K1711115-006	K1710611-008	K1710940-019	K1710771-014	K1710611-010	K1710611-011	K1710693-003
Sample Date		09/29/2017	10/10/2017	09/29/2017	10/06/2017	10/04/2017	09/29/2017	09/29/2017	10/02/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.3	<4.2	<4 3	<4.3	<4.2	<4.2	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.3	<4.2	<4 3	<4.3	<4.2	<4.2	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.3	<4.2	<4 3	<4.3	<4.2	<4.2	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.2	<4 3	<4.3	<4.2	<4.2	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.3	<4.2	<4 3	<4.3	<4.2	<4.2	<4 3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.2	<4 3	<4.3	<4.2	<4.2	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	45	<4.3	6.4	<4 3	4.9	<4.2	<4.2	<4.3
Perfluorobutanoic acid (PFBA)	NA	8.6	<8.7	<8.5	<8.6	<8.6	<8.3	<8.5	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.3	<4.2	<4 3	<4.3	<4.2	<4.2	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.3	<4.2	<4 3	<4.3	<4.2	<4.2	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.3	<4.2	<4.3	<4.3	<4.2	<4.2	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.3	<4.2	<4.3	<4.3	<4.2	<4.2	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	11	<4.3	<4.2	<4.3	<4.3	<4.2	<4.2	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.3	<4.2	<4.3	<4.3	<4.2	<4.2	<4.3
Perfluorohexanoic acid (PFHxA)	NA	39	<4.3	<4.2	<4.3	<4 3	<4.2	<4.2	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.3	<4.2	<4.3	<4 3	<4.2	<4.2	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.3	<4.2	<4.3	<4 3	<4.2	<4.2	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.3	<4.2	<4.3	<4 3	<4.2	<4.2	<4.3
Perfluorooctanoic acid (PFOA)	70	2.1	<1.7	<1.7	<1.7	4	2 2	<1.7	2
Perfluoropentanoic acid (PFPeA)	NA	19	<4.3	<4.2	<4.3	<4 3	<4.2	<4.2	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.3	<4.2	<4.3	<4 3	<4.2	<4.2	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.3	<4.2	<4.3	<4 3	<4.2	<4.2	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.3	<4.2	<4.3	<4 3	<4.2	<4.2	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411004102001	411004126005	411004126002	411004126003	411004128001	411004200031	411005200034	411005200038
GZAParcelNum		213	215	216	217	218	220	221	222
Sample Name		1744 10 Mile Rd NE	1866 10 MILE	1918 10 MILE	1940 10 MILE	2034 10 MILE	2080 10 MILE	1530 10 MILE	1550 10 MILE
Contact Name		[redacted]							
Address_UC		1744 10 MILE RD NE	1866 10 MILE RD NE	1918 10 MILE RD NE	1940 10 MILE RD NE	2034 10 MILE RD NE	2080 10 MILE RD NE	1530 10 MILE RD NE	1550 10 MILE RD NE
Laboratory ID		K1711956-001	K1710693-006	K1710611-012	K1710693-007	K1710771-012	K1710693-008	K1711414-001	K1710693-001
Sample Date		11/01/2017	10/02/2017	09/29/2017	10/02/2017	10/04/2017	10/02/2017	10/19/2017	10/02/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.2	<4.3	<4 2	<4.2	<4.3	<4.2	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.2	<4.3	<4 2	<4.2	<4.3	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.2	<4.3	<4 2	<4.2	<4.3	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.3	<4 2	<4.2	<4.3	<4.2	<4 2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.2	<4.3	<4 2	<4.2	<4.3	<4.2	<4 2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.3	<4 2	<4.2	<4.3	<4.2	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	12	4.6	<4 2	<4.2	<4.3	<4.2	5
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.5	<8.6	<8 5	<8.5	<8.6	<8.3	<8.5
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.2	<4.3	<4 2	<4.2	<4.3	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.2	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.2	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.2	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.2	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	4.2	<4.3	<4.2	<4 2	<4.3	<4.2	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.2	<4.3	<4.2	<4 2	<4.3	<4.2	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.2	<4.3	<4.2	<4 2	<4.3	<4.2	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.2	<4.3	<4.2	<4 2	<4.3	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.2	<4.3	<4.2	<4 2	<4.3	<4.2	<4.2
Perfluorooctanoic acid (PFOA)	70	3	2 9	3	<1.7	<1.7	<1.7	<1.7	2.2
Perfluoropentanoic acid (PFPeA)	NA	<4 2	<4.2	<4.3	<4.2	<4 2	<4.3	<4.2	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.2	<4.3	<4.2	<4 2	<4.3	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.2	<4.3	<4.2	<4 2	<4.3	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.2	<4.3	<4.2	<4 2	<4.3	<4.2	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411005200043	411004104002	411004103002	411004126007	411004200015	411004127010	411004127013	411004127012
GZAParcelNum		223	224	225	226	227	228	229	230
Sample Name		1656 10 MILE	1736 10 MILE	1820 10 MILE	1884 10 MILE	2186 10 MILE	2020 Squirewood	2021 Squirewood	2045 Squirewood
Contact Name		[redacted]							
Address_UC		1656 10 MILE RD NE	1736 10 MILE RD NE	1820 10 MILE RD NE	1884 10 MILE RD NE	2186 10 MILE RD NE	SQUIREWOOD CT NE	SQUIREWOOD CT NE	SQUIREWOOD CT NE
Laboratory ID		K1710771-013	K1710693-002	K1710693-004	K1710693-005	K1710693-009	K1710423-039	K1710423-040	K1710423-038
Sample Date		10/04/2017	10/02/2017	10/02/2017	10/02/2017	10/02/2017	09/27/2017	09/27/2017	09/27/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.3	<4.3	<4 3	<4.2	<4.1	<4.2	<4.2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.3	<4.3	<4 3	<4.2	<4.1	<4.2	<4.2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.3	<4.3	<4 3	<4.2	<4.1	<4.2	<4.2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.3	<4.3	<4 3	<4.2	<4.1	<4.2	<4.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.3	<4.3	<4 3	<4.2	<4.1	<4.2	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.3	<4.3	<4 3	<4.2	<4.1	<4.2	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.3	<4.3	11	<4.3	<4.2	<4.1	<4.2	<4.2
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.6	<8.6	<8.6	<8.5	<8.1	<8.3	<8.3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.3	<4.3	<4.3	<4.2	<4.1	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.3	<4.3	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.3	<4.3	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.3	<4.3	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<4.3	<4.3	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	<4.3	<4.3	4.6	<4 2	<4.1	<4.2	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.3	<4.3	4.4	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluorononanoic acid (PFNA)	NA	<4 3	<4.3	<4.3	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4 3	<4.3	<4.3	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4 3	<4.3	<4.3	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.7	<1.7	5.7	<1.7	<1.6	4.5	2.3
Perfluoropentanoic acid (PFPeA)	NA	<4 3	<4.3	<4.3	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 3	<4.3	<4.3	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4 3	<4.3	<4.3	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 3	<4.3	<4.3	<4.3	<4 2	<4.1	<4.2	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411004127011	411004127005	411004127004	411004127003	411004127002	411004127001	411004200029	411004200025
GZAParcelNum		231	232	233	234	235	236	237	238
Sample Name		2050 SQUIREWOOD	8255 Squirewood	8281 Squirewood	8303 Squirewood	8359 Squirewood	8375 Squirewood	8265 Herrington	8273 Herrington
Contact Name		[redacted]							
Address_UC		2050 SQUIREWOOD CT NE	8255 SQUIREWOOD DR NE	8281 SQUIREWOOD DR NE	8303 SQUIREWOOD DR NE	8359 SQUIREWOOD DR NE	8375 SQUIREWOOD DR NE	8265 HERRINGTON AVE NE	8273 HERRINGTON AVE NE
Laboratory ID		K1710693-010	K1710423-041	K1710423-042	K1710423-043	K1710423-044	K1710423-046	K1711956-003	K1710423-036
Sample Date		10/02/2017	09/27/2017	09/27/2017	09/27/2017	09/27/2017	09/27/2017	11/01/2017	09/27/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.3	<4.2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.3	<4.2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.3	<4.2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.3	<4.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.3	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.3	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.3	<4.2
Perfluorobutanoic acid (PFBA)	NA	<8.5	<8.3	<8.3	<8.3	<8.3	<8.3	<8.6	<8.3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.3	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.3	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.3	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.3	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.3	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.3	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.3	<4.2
Perfluorononanoic acid (PFNA)	NA	<4 2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.3	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4 2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.3	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4 2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.3	<4.2
Perfluorooctanoic acid (PFOA)	70	1.8	1 8	1.8	<1.7	<1.7	<1.7	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4 2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.3	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.3	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.3	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.3	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411004200028	411004200040	411004200053	411004200052	411004200020	411004200017	411004200019	411005300031
GZAParcelNum		239	240	241	242	243	244	245	247
Sample Name		8281 Herrington	8301 Herrington	8315 HERRINGTON	8327 HERRINGTON	8333 Herrington	8377 HERRINGTON	8431 Herrington	7754 PINE ISLAND
Contact Name		[redacted]							
Address_UC		8281 HERRINGTON AVE NE	8301 HERRINGTON AVE NE	8315 HERRINGTON AVE NE	8327 HERRINGTON AVE NE	8333 HERRINGTON AVE NE	8377 HERRINGTON AVE NE	8431 HERRINGTON AVE NE	7754 PINE ISLAND CT NE
Laboratory ID		K1710423-050	K1710423-049	K1710693-025	K1710940-002	K1710423-037	K1710693-026	K1710423-048	K1710695-011
Sample Date		09/27/2017	09/27/2017	10/03/2017	10/05/2017	09/27/2017	10/03/2017	09/27/2017	10/02/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2	<4 2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	5 2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2	<4.2
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.3	<8.5	<8 5	<8.3	<8.5	<8.3	<8.5
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.2	<4.2	<4.2	4.7	<4.2	<4.2	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4 2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2
Perfluorooctanoic acid (PFOA)	70	6.1	20	3.8	3.9	3.7	<1.7	9.2	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4 2	4 3	<4.2	<4.2	6.2	<4.2	<4.2	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411005126062	411005300043	411005126006	411004200037	411003152004	411003301001	411003301002	411003301003
GZAParcelNum		248	249	250	300	301	302	303	304
Sample Name		1172 10 Mile	7800 Pine Island Ct.	1038 10 MILE	8386 Herrington	8139 BELMONT	7965 Belmont	7923 Belmont	7877 BELMONT
Contact Name		[redacted]							
Address_UC		1172 10 MILE RD NE	7800 PINE ISLAND CT NE	1038 10 MILE RD NE	8386 HERRINGTON AVE NE	8139 BELMONT AVE NE	7965 BELMONT AVE NE	7923 BELMONT AVE NE	7877 BELMONT AVE NE
Laboratory ID		K1711232-002	K1711232-003	K1711414-006	K1710423-047	K1710940-003	K1710610-009	K1710610-008	K1710940-004
Sample Date		10/13/2017	10/13/2017	10/19/2017	09/27/2017	10/05/2017	09/29/2017	09/29/2017	10/05/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.3	<4.2	<4 3	<4.3	<4.2	<4.3	<4.2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.3	<4.2	<4 3	<4.3	<4.2	<4.3	<4.2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.3	<4.2	<4 3	<4.3	<4.2	<4.3	<4.2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.2	<4 3	<4.3	<4.2	<4.3	<4.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.3	<4.2	<4 3	<4.3	<4.2	<4.3	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.2	<4 3	<4.3	<4.2	<4.3	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	<4.3	<4.2	4.7	6.4	<4.2	<4.3	<4.2
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.6	<8.3	<8.6	<8.6	<8.3	<8.6	<8.5
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.3	<4.2	<4.3	<4.3	<4.2	<4.3	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.3	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.3	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.3	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.3	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.3	<4.2	<4.3	4.5	<4.2	<4.3	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.3	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2
Perfluorononanoic acid (PFNA)	NA	<4 2	<4.3	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4 2	<4.3	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4 2	<4.3	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.7	<1.7	7.3	4.5	<1.7	<1.7	2.1
Perfluoropentanoic acid (PFPeA)	NA	<4 2	<4.3	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.3	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.3	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.3	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411004427026	411004427027	411004427028	411004427012	411004427011	411004427010	411004427009	411003151009
GZAParcelNum		305	306	307	308	309	310	311	312
Sample Name		8000 STRAWBERRY LANE	7988 STRAWBERRY LANE	7970 STRAWBERRY LANE	7936 Strawberry Lane	7900 STRAWBERRY LANE	7876 Strawberry Lane	7834 Strawberry Lane	8057 GRAPHIC
Contact Name		[redacted]							
Address_UC		8000 STRAWBERRY LN NE	7988 STRAWBERRY LN NE	7970 STRAWBERRY LN NE	7936 STRAWBERRY LN NE	7900 STRAWBERRY LN NE	7876 STRAWBERRY LN NE	7834 STRAWBERRY LN NE	8057 GRAPHIC DR NE
Laboratory ID		K1710771-008	K1710771-007	K1710771-006	K1710423-016	K1710940-023	K1710423-018	K1710423-015	K1710940-033
Sample Date		10/04/2017	10/04/2017	10/04/2017	09/26/2017	10/06/2017	09/26/2017	09/26/2017	10/06/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4 3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4 3
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4 3
Perfluorobutanoic acid (PFBA)	NA	<8.5	<8.6	<8.7	<8.1	<8.8	<8.1	<8.1	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4 3
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4 3
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4.3
Perfluorooctanoic acid (PFOA)	70	2.9	<1.7	1.8	4.8	<1.8	<1.6	<1.6	1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4.2	<4.3	<4.3	<4.1	<4.4	<4.1	<4.1	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411003102007	411003102010	411003102010	411003152002	411003152001	411003151008	411003151007	411003151002
GZAParcelNum		313	314	314	315	316	317	318	319
Sample Name		8195 GRAPHIC	8221 GRAPHIC-FIRE PUMP	8221 GRAPHIC-OFFICE	8200 GRAPHIC	8166 GRAPHIC	8110 GRAPHIC	8090/8080 GRAPHIC	8060 GRAPHIC
Contact Name		[redacted]							
Address_UC		8195 GRAPHIC DR NE	8221 GRAPHIC DR NE	8221 GRAPHIC DR NE	8200 GRAPHIC DR NE	8166 GRAPHIC DR NE	8110 GRAPHIC DR NE	8080 GRAPHIC DR NE	8060 GRAPHIC DR NE
Laboratory ID		K1710940-028	K1710940-026	K1710940-025	K1710940-027	K1710940-029	K1710940-030	K1710940-031	K1710940-032
Sample Date		10/06/2017	10/06/2017	10/06/2017	10/06/2017	10/06/2017	10/06/2017	10/06/2017	10/06/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.4	<4.3	<4 3	<4.2	<4.4	<4.3	<4.4
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.4	<4.3	<4 3	<4.2	<4.4	<4.3	<4.4
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.4	<4.3	<4 3	<4.2	<4.4	<4.3	<4.4
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.4	<4.3	<4 3	<4.2	<4.4	<4.3	<4.4
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.4	<4.3	<4 3	<4.2	<4.4	<4.3	<4.4
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.4	<4.3	<4 3	<4.2	<4.4	<4.3	<4.4
Perfluorobutane sulfonic acid (PFBS)	NA	<4.3	<4.4	<4.3	5	<4.2	<4.4	<4.3	<4.4
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.8	<8.6	<8.6	<8.3	<8.8	<8.6	<8.8
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.4	<4.3	<4.3	<4.2	<4.4	<4.3	<4.4
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.4	<4.3	<4.3	<4.2	<4.4	<4.3	<4.4
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.4	<4.3	<4.3	<4 2	<4.4	<4.3	<4.4
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.4	<4.3	<4.3	<4 2	<4.4	<4.3	<4.4
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<4.4	<4.3	<4.3	<4 2	<4.4	<4.3	<4.4
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	<4.4	<4.3	<4.3	<4 2	<4.4	<4.3	<4.4
Perfluorohexanoic acid (PFHxA)	NA	<4.3	<4.4	<4.3	<4.3	<4 2	<4.4	<4.3	<4.4
Perfluorononanoic acid (PFNA)	NA	<4 3	<4.4	<4.3	<4.3	<4 2	<4.4	<4.3	<4.4
Perfluorooctane sulfonamide (FOSA)	NA	<4 3	<4.4	<4.3	<4.3	<4 2	<4.4	<4.3	<4.4
Perfluorooctane sulfonic acid (PFOS)	70	<4 3	<4.4	<4.3	<4.3	<4 2	<4.4	<4.3	<4.4
Perfluorooctanoic acid (PFOA)	70	<1.7	2.1	<1.7	<1.7	<1.7	<1.8	<1.7	<1.8
Perfluoropentanoic acid (PFPeA)	NA	<4 3	<4.4	<4.3	<4.3	<4 2	<4.4	<4.3	<4.4
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 3	<4.4	<4.3	<4.3	<4 2	<4.4	<4.3	<4.4
Perfluorotridecanoic acid (PFTrDA)	NA	<4 3	<4.4	<4.3	<4.3	<4 2	<4.4	<4.3	<4.4
Perfluoroundecanoic acid (PFUnDA)	NA	<4 3	<4.4	<4.3	<4.3	<4 2	<4.4	<4.3	<4.4

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411003151001	411005400043	411005400042	411005400042	411008200040	411008200045	411008200036	411005400034
GZAParcelNum		320	400	401	401	402	403	404	405
Sample Name		8069 BELMONT	1265 HOUSE	1267 HOUSE	1271 HOUSE	1300 HOUSE	1310 HOUSE	1360 HOUSE	1379 HOUSE
Contact Name		[redacted]							
Address_UC		8069 BELMONT AVE NE	1265 HOUSE ST NE	1271 HOUSE ST NE	1271 HOUSE ST NE	1300 HOUSE ST NE	1310 HOUSE ST NE	1360 HOUSE ST NE	1379 HOUSE ST NE
Laboratory ID		K1710940-034	K1710695-005	K1710695-006	K1710695-007	K1710695-001	K1710695-002	K1710695-003	K1710611-004
Sample Date		10/06/2017	10/02/2017	10/02/2017	10/02/2017	10/03/2017	10/03/2017	10/03/2017	09/29/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2	<4 3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	4 8	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2	<4.3
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.5	<8.5	<8 5	<8.5	<8.5	<8.5	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.2	<4.2	<4 2	<4.2	<4.2	<4.2	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<4.3	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.3	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.3	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4.3	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.3
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.7	2.1	2.5	<1.7	<1.7	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4 3	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 3	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4 3	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4 3	<4.2	<4.2	<4.2	<4 2	<4.2	<4.2	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411008200047	411008200011	411009100038	411009100039	411009100005	411009301001	411009301003	411009301002
GZAParcelNum		406	407	408	409	410	411	412	413
Sample Name		7546 PINE ISLAND	1460 HOUSE	7367 Chandler	7325 Chandler	7249 CHANDLER	7169 Chandler	7129 Chandler	7081 Chandler
Contact Name		[redacted]							
Address_UC		7546 PINE ISLAND DR NE	1460 HOUSE ST NE	7367 CHANDLER DR NE	7325 CHANDLER DR NE	7249 CHANDLER DR NE	7169 CHANDLER DR NE	7129 CHANDLER DR NE	7081 CHANDLER DR NE
Laboratory ID		K1710695-010	K1710695-031	K1710423-029	K1710423-028	K1710771-015	K1710423-025	K1710423-024	K1710423-021
Sample Date		10/02/2017	10/03/2017	09/27/2017	09/27/2017	10/04/2017	09/27/2017	09/27/2017	09/27/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.3	<4.1	<4.1	<4.3	<4.1	<4.2	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.3	<4.1	<4.1	<4.3	<4.1	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.3	<4.1	<4.1	<4.3	<4.1	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.1	<4.1	<4.3	<4.1	<4.2	<4.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.3	<4.1	<4.1	<4.3	<4.1	<4.2	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.1	<4.1	<4.3	<4.1	<4.2	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	<4.3	<4.1	<4.1	<4.3	<4.1	<4.2	7.6
Perfluorobutanoic acid (PFBA)	NA	<8.5	<8.6	<8.1	<8.1	<8.6	<8.1	<8.3	<8.3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.3	<4.1	<4.1	<4.3	<4.1	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.3	<4.1	<4.1	<4.3	<4.1	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.3	<4.1	<4.1	<4.3	<4.1	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.3	<4.1	<4.1	<4.3	<4.1	<4.2	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.3	<4.1	<4.1	<4 3	<4.1	<4.2	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.3	<4.1	<4.1	<4 3	<4.1	<4.2	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.3	<4.1	<4.1	<4 3	<4.1	<4.2	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.3	<4.1	<4.1	<4 3	<4.1	<4.2	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.3	<4.1	<4.1	<4 3	<4.1	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4 2	<4.3	<4.1	5.7	<4 3	<4.1	<4.2	<4.2
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.7	<1.6	4.3	<1.7	<1.6	<1.7	2.2
Perfluoropentanoic acid (PFPeA)	NA	<4 2	<4.3	<4.1	<4.1	<4 3	<4.1	<4.2	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.3	<4.1	<4.1	<4 3	<4.1	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.3	<4.1	<4.1	<4 3	<4.1	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.3	<4.1	<4.1	<4 3	<4.1	<4.2	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411009301013	411009301008	411009340001	411009326010	411009326009	411009100010	411009100035	411009100044
GZAParcelNum		414	415	416	417	418	419	420	421
Sample Name		7077 Chandler	7071 CHANDLER	7042 Chandler	7100 Chandler	7184 Chandler	7200 Chandler	7300 Chandler	7370 Chandler
Contact Name		[redacted]							
Address_UC		7077 CHANDLER DR NE	7071 CHANDLER DR NE	7042 CHANDLER DR NE	7100 CHANDLER DR NE	7184 CHANDLER DR NE	7200 CHANDLER DR NE	7300 CHANDLER DR NE	7370 CHANDLER DR NE
Laboratory ID		K1710423-033	K1710940-005	K1710423-023	K1710423-022	K1710423-001	K1710423-026	K1710423-027	K1710423-034
Sample Date		09/27/2017	10/05/2017	09/27/2017	09/27/2017	09/27/2017	09/27/2017	09/27/2017	09/27/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.2	<4.2	<4 3	<4.3	<4.2	<4.1	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.2	<4.2	<4 3	<4.3	<4.2	<4.1	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.2	<4.2	<4 3	<4.3	<4.2	<4.1	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.2	<4 3	<4.3	<4.2	<4.1	<4 2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.2	<4.2	<4 3	<4.3	<4.2	<4.1	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.2	<4 3	<4.3	<4.2	<4.1	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	5 3	7	<4.2	<4 3	<4.3	<4.2	<4.1	<4.2
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.5	<8.3	<8.6	<8.6	<8.3	<8.1	<8.3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.2	<4.2	<4.3	<4.3	<4.2	<4.1	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.2	<4.2	<4.3	<4.3	<4.2	<4.1	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.2	<4.2	<4.3	<4.3	<4.2	<4.1	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.2	<4.2	<4.3	<4.3	<4.2	<4.1	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<4.2	<4.2	<4.3	<4 3	<4.2	<4.1	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	<4.2	<4.2	<4.3	<4 3	<4.2	<4.1	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.3	<4.2	<4.2	<4.3	<4 3	<4.2	<4.1	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.3	<4.2	<4.2	<4.3	<4 3	<4.2	<4.1	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.3	<4.2	<4.2	<4.3	<4 3	<4.2	<4.1	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4 3	<4.2	<4.2	<4.3	4.7	<4.2	4.2	<4.2
Perfluorooctanoic acid (PFOA)	70	2.5	2 5	1.7	<1.7	3.6	<1.7	2.3	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4 3	<4.2	<4.2	<4.3	<4 3	<4.2	<4.1	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 3	<4.2	<4.2	<4.3	<4 3	<4.2	<4.1	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4 3	<4.2	<4.2	<4.3	<4 3	<4.2	<4.1	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 3	<4.2	<4.2	<4.3	<4 3	<4.2	<4.1	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411009100045	411009100046	411009100030	411009100036	411009100036	411009251010	411009251011	411009251012
GZAParcelNum		422	423	424	425	425	426	427	428
Sample Name		7410 Chandler	7422 Chandler	7428 Chandler	7480 Chandler	7480 Chandler-IN-11/14	7371 Terrie Lynn	7355 Terrie Lynn	7347 Terrie Lynn
Contact Name		[redacted]							
Address_UC		7410 CHANDLER DR NE	7422 CHANDLER DR NE	7428 CHANDLER DR NE	7480 CHANDLER DR NE	7480 CHANDLER DR NE	7371 TERRIE LYNN DR NE	7355 TERRIE LYNN DR NE	7347 TERRIE LYNN DR NE
Laboratory ID		K1710423-030	K1710423-035	K1710423-031	K1710423-032	K1712443-001	K1710498-004	K1710498-003	K1710423-053
Sample Date		09/27/2017	09/27/2017	09/27/2017	09/27/2017	11/14/2017	09/28/2017	09/28/2017	09/27/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.1	<4.2	<4.3	<4 2	<4.3	<4.3	<4.3	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.1	<4.2	<4.3	<4 2	<4.3	<4.3	<4.3	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.1	<4.2	<4.3	<4 2	<4.3	<4.3	<4.3	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.1	<4.2	<4.3	<4 2	<4.3	<4.3	<4.3	<4 2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.1	<4.2	<4.3	<4 2	<4.3	<4.3	<4.3	<4 2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.1	<4.2	<4.3	<4 2	<4.3	<4.3	<4.3	<4 2
Perfluorobutane sulfonic acid (PFBS)	NA	230	220	<4.3	46	38	260	40	49
Perfluorobutanoic acid (PFBA)	NA	74	53	<8.6	10	<8.6	54	<8.6	9.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.1	<4.2	<4.3	<4 2	<4.3	<4.3	<4.3	<4 2
Perfluorodecanoic acid (PFDA)	NA	<4.1	<4.2	<4.3	<4 2	<4.3	<4.3	<4.3	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.1	<4.2	<4.3	<4 2	<4.3	<4.3	<4.3	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.1	<4.2	<4.3	6.6	7	34	5.3	25
Perfluoroheptanoic acid (PFHpA)	NA	17	34	<4.3	30	22	190	26	45
Perfluorohexane sulfonic acid (PFHxS)	NA	7 5	32	<4.3	130	110	340	52	160
Perfluorohexanoic acid (PFHxA)	NA	210	170	<4.3	31	33	130	16	35
Perfluorononanoic acid (PFNA)	NA	<4.1	<4.2	<4.3	<4 2	<4.3	<4.3	<4.3	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.1	<4.2	<4.3	<4 2	<4.3	<4.3	<4.3	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.1	<4.2	<4.3	5.3	4.9	***200***	*11*	***120***
Perfluorooctanoic acid (PFOA)	70	2 5	6	<1.7	***81***	62	***470***	*67*	***180***
Perfluoropentanoic acid (PFPeA)	NA	150	110	<4.3	13	8.1	85	11	15
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.1	<4.2	<4.3	<4.2	<4.3	<4.3	<4.3	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4.1	<4.2	<4.3	<4.2	<4.3	<4.3	<4.3	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4.1	<4.2	<4.3	<4.2	<4.3	<4.3	<4.3	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411009251013	411009251014	411009251015	411009251008	411009251008	411009251007	411009251006	411009251025
GZAParcelNum		429	430	431	432	432	433	434	435
Sample Name		7339 Terrie Lynn	7325 Terrie Lynn	7299 Terrie Lynn	7354 Terrie Lynn	7354 Terrie Lynn-IN-11/14	7336 Terrie Lynn	7318 Terrie Lynn	2100 Meek
Contact Name		[redacted]							
Address_UC		7339 TERRIE LYNN DR NE	7325 TERRIE LYNN DR NE	7299 TERRIE LYNN DR NE	7354 TERRIE LYNN DR NE	7354 TERRIE LYNN DR NE	7336 TERRIE LYNN DR NE	7318 TERRIE LYNN DR NE	2100 MEEK DR NE
Laboratory ID		K1710423-052	K1710423-003	K1710423-051	K1710498-001	K1712443-002	K1710498-002	K1710423-002	K1710498-005
Sample Date		09/27/2017	09/27/2017	09/27/2017	09/28/2017	11/14/2017	09/28/2017	09/27/2017	09/28/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	17	9.5	170	130	<4.3	65	4.6
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.3	<8.3	26	21	<8.7	15	<8 3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.2	<4.2	140	120	4.9	9.6	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	4.7	<4.2	150	94	5	60	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.2	5.2	470	340	18	110	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.2	11	<4.2	91	82	<4.3	41	<4 2
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.2	<4.2	***1400***	***1200***	15	19	<4.2
Perfluorooctanoic acid (PFOA)	70	<1.7	2	7.4	***680***	***460***	45	***150***	3.4
Perfluoropentanoic acid (PFPeA)	NA	<4.2	14	<4.2	47	27	<4.3	24	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411009251024	411009251023	411009251022	411009401018	411009401014	411009401010	411009401007	411009401006
GZAParcelNum		436	437	438	439	440	441	442	443
Sample Name		2086 Meek	2072 Meek	2066 MEEK	2060 Meek	2036 Meek	2024 MEEK	2001 Meek	2023 Meek
Contact Name		[redacted]							
Address_UC		2086 MEEK DR NE	2072 MEEK DR NE	2066 MEEK DR NE	2060 MEEK DR NE	2036 MEEK DR NE	2024 MEEK DR NE	2001 MEEK DR NE	2023 MEEK DR NE
Laboratory ID		K1710498-006	K1710498-007	K1710695-019	K1710498-009	K1710498-010	K1711414-002	K1710498-012	K1710498-011
Sample Date		09/28/2017	09/28/2017	10/02/2017	09/28/2017	09/28/2017	10/19/2017	09/28/2017	09/28/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.2	<4.3	<4 2	<4.3	<4.3	<4.3	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.2	<4.3	<4 2	<4.3	<4.3	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.2	<4.3	<4 2	<4.3	<4.3	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.3	<4 2	<4.3	<4.3	<4.3	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.2	<4.3	<4 2	<4.3	<4.3	<4.3	<4.3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.3	<4 2	<4.3	<4.3	<4.3	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	9.1	190	120	18	12	<4.3	<4.3	<4.3
Perfluorobutanoic acid (PFBA)	NA	<8.6	61	32	<8 3	<8.6	<8.6	<8.6	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.2	<4.3	<4 2	<4.3	<4.3	<4.3	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.2	<4.3	<4 2	<4.3	<4.3	<4.3	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.2	<4.3	<4 2	<4.3	<4.3	<4.3	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.2	<4.3	<4.2	<4.3	<4.3	<4.3	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	9.2	<4.3	<4.2	<4.3	<4.3	<4.3	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	7.9	<4.3	7.1	<4.3	<4.3	<4.3	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<4.3	100	69	<4.2	<4.3	<4.3	<4.3	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.3	<4.2	<4.3	<4.2	<4.3	<4.3	<4.3	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.3	<4.2	<4.3	<4.2	<4 3	<4.3	<4.3	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4.3	<4.2	<4.3	<4.2	<4 3	<4.3	<4.3	<4.3
Perfluorooctanoic acid (PFOA)	70	2.1	2.6	<1.7	4.1	<1.7	<1.7	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.3	110	61	<4.2	<4 3	<4.3	<4.3	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.3	<4.2	<4.3	<4.2	<4 3	<4.3	<4.3	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4 3	<4.2	<4.3	<4.2	<4 3	<4.3	<4.3	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4 3	<4.2	<4.3	<4.2	<4 3	<4.3	<4.3	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411009401005	411009401001	411009251021	411009251020	411009251019	411009251018	411009251017	411009251016
GZAParcelNum		444	445	446	447	448	449	450	451
Sample Name		2039 MEEK	2051 Meek	2075 KORBEN WOODS	2042 KORBEN WOODS	2020 KORBEN WOODS	2039 KORBEN WOODS	2055 KORBEN WOODS	2077 KORBEN WOODS
Contact Name		[redacted]							
Address_UC		2039 MEEK DR NE	2051 MEEK DR NE	2075 KORBEN WOODS CT NE	2042 KORBEN WOODS CT NE	2020 KORBEN WOODS CT NE	2039 KORBEN WOODS CT NE	2055 KORBEN WOODS CT NE	2077 KORBEN WOODS CT NE
Laboratory ID		K1710695-018	K1710498-008	K1710695-016	K1710695-013	K1710695-014	K1710695-012	K1710695-015	K1710695-017
Sample Date		10/02/2017	09/28/2017	10/02/2017	10/02/2017	10/02/2017	10/02/2017	10/02/2017	10/02/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.2	<4.3	<4 2	<4.3	<4.2	<4.2	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.2	<4.3	<4 2	<4.3	<4.2	<4.2	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.2	<4.3	<4 2	<4.3	<4.2	<4.2	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.3	<4 2	<4.3	<4.2	<4.2	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.2	<4.3	<4 2	<4.3	<4.2	<4.2	<4 3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.3	<4 2	<4.3	<4.2	<4.2	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	<4.2	93	24	13	31	160	6.3
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.3	38	10	<8.6	9.5	45	<8.7
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.2	<4.3	<4 2	<4.3	<4.2	<4.2	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.2	<4.3	<4 2	<4.3	<4.2	<4.2	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.2	<4.3	<4 2	<4.3	<4.2	<4.2	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.2	<4.3	<4 2	<4.3	<4.2	<4.2	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.2	7.6	6.6	<4.3	<4.2	9.7	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.2	9.3	6.4	<4.3	<4.2	9.6	5.7
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.2	57	12	4.6	<4.2	110	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.2	<4.3	<4.2	<4.3	<4.2	<4.2	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.2	<4.3	<4.2	<4.3	<4.2	<4.2	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.2	<4.3	<4.2	<4 3	<4.2	<4.2	<4.3
Perfluorooctanoic acid (PFOA)	70	4.4	<1.7	2.4	6.2	<1.7	<1.7	<1.7	3.1
Perfluoropentanoic acid (PFPeA)	NA	<4.2	<4.2	61	11	5.4	10	93	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.2	<4.2	<4.3	<4.2	<4 3	<4.2	<4.2	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4.2	<4.2	<4.3	<4.2	<4 3	<4.2	<4.2	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4.2	<4.2	<4.3	<4.2	<4 3	<4.2	<4.2	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411005400038	411009401016	411008200029	411005300041	411003301004	411004427008	411004427007	411003352002
GZAParcelNum		452	453	454	455	500	501	502	503
Sample Name		1359 HOUSE	1996 Meek	7450 PINE ISLAND	7758 PINE ISLAND CT.	7815 BELMONT	7800 Strawberry Lane	7778 Strawberry Lane	2469 Strawberry Farm
Contact Name		[redacted]							
Address_UC		1359 HOUSE ST NE	1996 MEEK DR NE	7450 PINE ISLAND DR NE	7758 PINE ISLAND CT NE	7815 BELMONT AVE NE	7800 STRAWBERRY LN NE	7778 STRAWBERRY LN NE	2469 STRAWBERRY FARMS ST NE
Laboratory ID		K1710695-008	K1710498-013	K1710695-009	K1711115-013	K1710940-006	K1710423-014	K1710423-013	K1710423-009
Sample Date		10/02/2017	09/28/2017	10/02/2017	10/12/2017	10/05/2017	09/26/2017	09/26/2017	09/26/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.3	<4.2	<4 3	<4.2	<4.1	<4.2	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.3	<4.2	<4 3	<4.2	<4.1	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.3	<4.2	<4 3	<4.2	<4.1	<4.2	<4.2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.2	<4 3	<4.2	<4.1	<4.2	<4.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.3	<4.2	<4 3	<4.2	<4.1	<4.2	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.2	<4 3	<4.2	<4.1	<4.2	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	<4.3	<4.2	<4 3	<4.2	<4.1	<4.2	<4.2
Perfluorobutanoic acid (PFBA)	NA	<8.5	<8.6	<8.5	<8.7	<8.5	<8.1	<8.3	<8.3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.3	<4.2	<4.3	<4.2	<4.1	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.3	<4.2	<4.3	<4.2	<4.1	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.3	<4.2	<4.3	<4.2	<4.1	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.3	<4.2	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.3	<4.2	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.3	<4.2	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.3	<4.2	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.3	<4.2	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.3	<4.2	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4 2	<4.3	<4.2	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.7	<1.7	<1.7	<1.7	<1.6	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4 2	<4.3	<4.2	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.3	<4.2	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.3	<4.2	<4.3	<4 2	<4.1	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.3	<4.2	<4.3	<4 2	<4.1	<4.2	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411003352003	411003352004	411003353001	411003353002	411003352011	411003352009	411003352010	411003352008
GZAParcelNum		504	505	506	507	508	509	510	511
Sample Name		2495 Strawberry Farm	2555 STRAWBERRY FARM	7781 Belmont	7757 BELMONT	2560 Strawberry Farm	2500 STRAWBERRY FARM	2530 Strawberry Farm	2470 Strawberry Farm
Contact Name		[redacted]							
Address_UC		2495 STRAWBERRY FARMS ST NE	2555 STRAWBERRY FARMS ST NE	7781 BELMONT AVE NE	7757 BELMONT AVE NE	2560 STRAWBERRY FARMS ST NE	2500 STRAWBERRY FARMS ST NE	2530 STRAWBERRY FARMS ST NE	2470 STRAWBERRY FARMS ST NE
Laboratory ID		K1710423-010	K1710771-005	K1710610-007	K1710940-007	K1710423-012	K1710771-004	K1710423-011	K1710423-019
Sample Date		09/26/2017	10/04/2017	09/29/2017	10/05/2017	09/26/2017	10/04/2017	09/26/2017	09/26/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.3	<4.3	<4 3	<4.1	<4.2	<4.2	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.3	<4.3	<4 3	<4.1	<4.2	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.3	<4.3	<4 3	<4.1	<4.2	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.3	<4 3	<4.1	<4.2	<4.2	<4 2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.3	<4.3	<4 3	<4.1	<4.2	<4.2	<4 2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.3	<4 3	<4.1	<4.2	<4.2	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	<4.3	<4.3	<4 3	<4.1	<4.2	<4.2	<4.2
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.6	<8.7	<8.6	<8.1	<8.5	<8.3	<8.3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.3	<4.3	<4 3	<4.1	<4.2	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.3	<4.3	<4 3	<4.1	<4.2	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.3	<4.3	<4.3	<4.1	<4.2	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.3	<4.3	<4.3	<4.1	<4.2	<4.2	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.3	<4.3	<4.3	<4.1	<4.2	<4.2	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.3	<4.3	<4.3	<4.1	<4.2	<4.2	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.3	<4.3	<4.3	<4.1	<4.2	<4.2	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.3	<4.3	<4.3	<4.1	<4.2	<4.2	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.3	<4.3	<4.3	<4.1	<4.2	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.3	<4.3	<4.3	<4.1	<4.2	<4.2	<4.2
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.7	<1.7	<1.7	<1.6	<1.7	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4 2	<4.3	<4.3	<4.3	<4.1	<4.2	<4.2	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.3	<4.3	<4.3	<4.1	<4.2	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.3	<4.3	<4.3	<4.1	<4.2	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.3	<4.3	<4.3	<4.1	<4.2	<4.2	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411003352007	411003352005	411003352006	411004427006	411004427005	411004427004	411004427003	411004427002
GZAParcelNum		512	513	514	515	516	517	518	519
Sample Name		2450 STRAWBERRY FARM	2400 Strawberry Farm	2430 Strawberry Farm	2390 STRAWBERRY FARM	2360 STRAWBERRY FARM	2330 Strawberry Farm	2300 Strawberry Farm	2270 STRAWBERRY FARM
Contact Name		[redacted]							
Address_UC		2450 STRAWBERRY FARMS ST NE	2400 STRAWBERRY FARMS ST NE	2430 STRAWBERRY FARMS ST NE	2390 STRAWBERRY FARMS ST NE	2360 STRAWBERRY FARMS ST NE	2330 STRAWBERRY FARMS ST NE	2300 STRAWBERRY FARMS ST NE	2270 STRAWBERRY FARMS ST NE
Laboratory ID		K1710771-003	K1710423-020	K1710423-008	K1710771-002	K1710771-001	K1710423-007	K1710423-017	K1710695-027
Sample Date		10/04/2017	09/26/2017	09/26/2017	10/04/2017	10/04/2017	09/26/2017	09/26/2017	10/03/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.2	<4.1	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.2	<4.1	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.2	<4.1	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.2	<4.1	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.2	<4.1	<4 3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.2	<4.1	<4 3
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.2	<4.1	<4 3
Perfluorobutanoic acid (PFBA)	NA	<8.5	<8.3	<8.3	<8 3	<8.7	<8.3	<8.1	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.2	<4.1	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.2	<4.1	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.2	<4.1	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.2	<4.2	<4 2	<4.3	<4.2	<4.1	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.2	<4.2	<4.2	<4.3	<4.2	<4.1	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.2	<4.2	<4.2	<4.3	<4.2	<4.1	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.2	<4.2	<4.2	<4.3	<4.2	<4.1	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.2	<4.2	<4.2	<4.3	<4.2	<4.1	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.2	<4.2	<4.2	<4 3	<4.2	<4.1	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.2	<4.2	<4.2	<4 3	<4.2	<4.1	<4.3
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.6	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.2	<4.2	<4.2	<4.2	<4 3	<4.2	<4.1	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.2	<4.2	<4.2	<4.2	<4 3	<4.2	<4.1	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.2	<4.2	<4.2	<4 3	<4.2	<4.1	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.2	<4.2	<4.2	<4 3	<4.2	<4.1	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411004427001	411004476003	411004476004	411010101001	411010101002	411010101003	411010101004	411010101005
GZAParcelNum		520	521	522	523	524	525	526	527
Sample Name		2242 Strawberry Farm	7712 HERRINGTON	7680 HERRINGTON	2255 Rolling Meadow	2285 ROLLING MEADOW	2313 Rolling Meadow	2355 Rolling Meadow	2435 Rolling Meadow
Contact Name		[redacted]							
Address_UC		2242 STRAWBERRY FARMS ST NE	7712 HERRINGTON AVE NE	7680 HERRINGTON AVE NE	2255 ROLLING MEADOW DR NE	2285 ROLLING MEADOW DR NE	2313 ROLLING MEADOW DR NE	2355 ROLLING MEADOW DR NE	2435 ROLLING MEADOW DR NE
Laboratory ID		K1710423-006	K1710693-024	K1710693-023	K1710498-020	K1710940-008	K1710498-021	K1710498-023	K1710498-024
Sample Date		09/26/2017	10/03/2017	10/03/2017	09/28/2017	10/05/2017	09/28/2017	09/28/2017	09/28/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.1	<4.2	<4.2	<4 3	<4.2	<4.2	<4.2	<4.2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.1	<4.2	<4.2	<4 3	<4.2	<4.2	<4.2	<4.2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.1	<4.2	<4.2	<4 3	<4.2	<4.2	<4.2	<4.2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.1	<4.2	<4.2	<4.3	<4.2	<4.2	<4.2	<4.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.1	<4.2	<4.2	<4.3	<4.2	<4.2	<4.2	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.1	<4.2	<4.2	<4.3	<4.2	<4.2	<4.2	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	8.6	<4.2	<4.2	<4.3	<4 2	5	5	<4.2
Perfluorobutanoic acid (PFBA)	NA	<8.1	<8.5	<8.5	<8.6	<8 5	<8.3	<8.3	<8.3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.1	<4.2	<4.2	<4.3	<4 2	<4.2	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.1	<4.2	<4.2	<4.3	<4 2	<4.2	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.1	<4.2	<4.2	<4.3	<4 2	<4.2	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.1	<4.2	<4.2	<4.3	<4 2	<4.2	<4.2	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.1	<4.2	<4.2	<4.3	<4 2	<4.2	<4.2	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.1	<4.2	<4.2	<4.3	<4 2	<4.2	<4.2	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.1	<4.2	<4.2	<4.3	<4 2	<4.2	<4.2	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.1	<4.2	<4.2	<4.3	<4 2	<4.2	<4.2	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.1	<4.2	<4.2	<4.3	<4 2	<4.2	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.1	<4.2	<4.2	<4.3	<4 2	<4.2	<4.2	<4.2
Perfluorooctanoic acid (PFOA)	70	10	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.1	<4.2	<4.2	<4.3	<4 2	<4.2	<4.2	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.1	<4.2	<4.2	<4.3	<4 2	<4.2	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4.1	<4.2	<4.2	<4.3	<4 2	<4.2	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4.1	<4.2	<4.2	<4.3	<4 2	<4.2	<4.2	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010101006	411010101007	411010101008	411003351005	411003351006	411003351004	411010101009	411010101010
GZAParcelNum		528	529	530	531	532	533	534	535
Sample Name		2465 ROLLING MEADOW	2495 Rolling Meadow	2525 Rolling Meadow	7685 Belmont	7675 BELMONT	7619 BELMONT	7550 STEEPLEBUSH	7520 STEEPLEBUSH
Contact Name		[redacted]							
Address_UC		2465 ROLLING MEADOW DR NE	2495 ROLLING MEADOW DR NE	2525 ROLLING MEADOW DR NE	7685 BELMONT AVE NE	7675 BELMONT AVE NE	7619 BELMONT AVE NE	7550 STEEPLEBUSH LN NE	7520 STEEPLEBUSH LN NE
Laboratory ID		K1710771-009	K1710498-025	K1710498-026	K1710610-006	K1710940-009	K1710940-010	K1710695-026	K1710695-025
Sample Date		10/04/2017	09/28/2017	09/28/2017	09/29/2017	10/05/2017	10/05/2017	10/03/2017	10/03/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.2	<4.2	<4 3	<4.3	<4.3	<4.3	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.2	<4.2	<4 3	<4.3	<4.3	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.2	<4.2	<4 3	<4.3	<4.3	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.2	<4 3	<4.3	<4.3	<4.3	<4.3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.2	<4.2	<4 3	<4.3	<4.3	<4.3	<4.3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.2	<4 3	<4.3	<4.3	<4.3	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	<4.3	<4.2	<4.2	<4 3	<4.3	<4.3	6.7	<4.3
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.3	<8.3	<8.6	<8.6	<8.6	<8.6	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.2	<4.2	<4.3	<4.3	<4.3	<4.3	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.2	<4.2	<4.3	<4.3	<4.3	<4.3	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.2	<4.2	<4.3	<4.3	<4.3	<4.3	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.2	<4.2	<4.3	<4.3	<4.3	<4.3	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<4.2	<4.2	<4.3	<4 3	<4.3	<4.3	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	<4.2	<4.2	<4.3	<4 3	<4.3	<4.3	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<4.3	<4.2	<4.2	<4.3	<4 3	<4.3	<4.3	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.3	<4.2	<4.2	<4.3	<4 3	<4.3	<4.3	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.3	<4.2	<4.2	<4.3	<4 3	<4.3	<4.3	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4 3	<4.2	<4.2	<4.3	<4 3	<4.3	<4.3	<4.3
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4 3	<4.2	<4.2	<4.3	<4 3	<4.3	<4.3	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 3	<4.2	<4.2	<4.3	<4 3	<4.3	<4.3	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4 3	<4.2	<4.2	<4.3	<4 3	<4.3	<4.3	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4 3	<4.2	<4.2	<4.3	<4 3	<4.3	<4.3	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010101011	411010101012	411010101020	411010101019	411010101017	411010101013	411010101014	411010101015
GZAParcelNum		536	537	538	539	541	542	543	544
Sample Name		7490 Steeplebush	7460 Steeplebush	7465 Steeplebush	7495 Steeplebush	7545 STEEPLEBUSH	2480 ROLLING MEADOW	7530 CLOUDBERRY	7500 CLOUDBERRY
Contact Name		[redacted]							
Address_UC		7490 STEEPLEBUSH LN NE	7460 STEEPLEBUSH LN NE	7465 STEEPLEBUSH LN NE	7495 STEEPLEBUSH LN NE	7545 STEEPLEBUSH LN NE	2480 ROLLING MEADOW DR NE	7530 CLOUDBERRY LN NE	7500 CLOUDBERRY LN NE
Laboratory ID		K1710498-028	K1711232-001	K1710498-027	K1710498-029	K1711115-001	K1710771-023	K1710695-029	K1710695-024
Sample Date		09/28/2017	10/13/2017	09/28/2017	09/28/2017	10/10/2017	10/04/2017	10/03/2017	10/03/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<5.1	<4.3	<4.2	<4 2	<4.3	<4.5	<4.3	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<5.1	<4.3	<4.2	<4 2	<4.3	<4.5	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<5.1	<4.3	<4.2	<4 2	<4.3	<4.5	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<5.1	<4.3	<4.2	<4 2	<4.3	<4.5	<4.3	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<5.1	<4.3	<4.2	<4 2	<4.3	<4.5	<4.3	<4 3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<5.1	<4.3	<4.2	<4 2	<4.3	<4.5	<4.3	<4 3
Perfluorobutane sulfonic acid (PFBS)	NA	<5.1	<4.3	<4.2	<4 2	<4.3	<4.5	<4.3	<4 3
Perfluorobutanoic acid (PFBA)	NA	<10	<8.6	<8.3	<8 3	<8.6	<9	<8.6	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<5.1	<4.3	<4.2	<4 2	<4.3	<4.5	<4.3	<4.3
Perfluorodecanoic acid (PFDA)	NA	<5.1	<4.3	<4.2	<4 2	<4.3	<4.5	<4.3	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<5.1	<4.3	<4.2	<4 2	<4.3	<4.5	<4.3	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<5.1	<4.3	<4.2	<4 2	<4.3	<4.5	<4.3	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<5.1	<4.3	<4.2	<4 2	<4.3	<4.5	<4.3	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<5.1	<4.3	<4.2	<4.2	<4.3	<4.5	<4.3	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<5.1	<4.3	<4.2	<4.2	<4.3	<4.5	4.9	<4.3
Perfluorononanoic acid (PFNA)	NA	<5.1	<4.3	<4.2	<4.2	<4.3	<4.5	<4.3	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<5.1	<4.3	<4.2	<4.2	<4.3	<4.5	<4.3	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<5.1	<4.3	<4.2	<4.2	<4 3	<4.5	<4.3	<4.3
Perfluorooctanoic acid (PFOA)	70	2.4	<1.7	2.4	<1.7	<1.7	<1.8	6.1	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<5.1	<4.3	<4.2	<4.2	<4 3	<4.5	<4.3	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<5.1	<4.3	<4.2	<4.2	<4 3	<4.5	<4.3	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<5.1	<4.3	<4.2	<4.2	<4 3	<4.5	<4.3	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<5.1	<4.3	<4.2	<4.2	<4 3	<4.5	<4.3	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010101016	411010101021	411010101022	411010101023	411010101024	411010101025	411010101026	411010101027
GZAParcelNum		545	546	547	548	549	550	551	552
Sample Name		2455 PERSIMMON	2570 PERSIMMON	2530 PERSIMMON	2490 PERSIMMON	2460 Persimmon	2430 PERSIMMON	7447 CLOUDBERRY	7485 CLOUDBERRY
Contact Name		[redacted]							
Address_UC		2455 PERSIMMON PL NE	2570 PERSIMMON PL NE	2530 PERSIMMON PL NE	2490 PERSIMMON PL NE	2460 PERSIMMON PL NE	2430 PERSIMMON PL NE	7447 CLOUDBERRY LN NE	7485 CLOUDBERRY LN NE
Laboratory ID		K1710693-027	K1710940-011	K1710940-020	K1710940-012	K1710498-014	K1710771-021	K1710695-023	K1710695-030
Sample Date		10/03/2017	10/05/2017	10/06/2017	10/05/2017	09/28/2017	10/04/2017	10/03/2017	10/03/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.4	<4.3	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.4	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.4	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.4	<4.3	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.4	<4.3	<4 3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.4	<4.3	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.4	<4.3	<4.3
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.6	<8.6	<8.7	<8.7	<8.8	<8.6	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.4	<4.3	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.3	<4.3	<4 3	<4.3	<4.4	<4.3	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.3	<4.3	<4.3	<4.3	<4.4	<4.3	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.3	<4.3	<4.3	<4.3	<4.4	<4.3	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.3	<4.3	<4.3	<4.3	<4.4	<4.3	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.3	<4.3	<4.3	<4.3	<4.4	<4.3	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.3	<4.3	<4.3	<4 3	<4.4	<4.3	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.3	<4.3	<4.3	<4 3	<4.4	<4.3	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.3	<4.3	<4.3	<4 3	<4.4	<4.3	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.3	<4.3	<4.3	<4 3	4 5	<4.3	<4.3
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.7	<1.7	<1.7	<1.7	<1.8	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4 2	<4.3	<4.3	<4.3	<4 3	<4.4	<4.3	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.3	<4.3	<4.3	<4 3	<4.4	<4.3	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.3	<4.3	<4.3	<4 3	<4.4	<4.3	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.3	<4.3	<4.3	<4 3	<4.4	<4.3	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010101028	411010101029	411010101030	411010101031	411010101032	411004477002	411009200044	411009200045
GZAParcelNum		553	554	555	556	557	558	559	560
Sample Name		7525 CLOUDBERRY	7555 CLOUDBERRY	2320 Rolling Meadow	2280 ROLLING MEADOW	2250 Rolling Meadow	7630 HERRINGTON	7600 HERRINGTON	7580 HERRINGTON
Contact Name		[redacted]							
Address_UC		7525 CLOUDBERRY LN NE	7555 CLOUDBERRY LN NE	2320 ROLLING MEADOW DR NE	2280 ROLLING MEADOW DR NE	2250 ROLLING MEADOW DR NE	7630 HERRINGTON AVE NE	7600 HERRINGTON AVE NE	7580 HERRINGTON AVE NE
Laboratory ID		K1710771-022	K1710695-028	K1710498-022	K1710771-024	K1710498-019	K1710940-013	K1710693-022	K1710693-021
Sample Date		10/04/2017	10/03/2017	09/28/2017	10/04/2017	09/28/2017	10/05/2017	10/03/2017	10/03/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.4	<4.3	<4.2	<4.4	<4.3	<4.7	<4.2	<4.2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.4	<4.3	<4.2	<4.4	<4.3	<4.7	<4.2	<4.2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.4	<4.3	<4.2	<4.4	<4.3	<4.7	<4.2	<4.2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.4	<4.3	<4.2	<4.4	<4.3	<4.7	<4.2	<4.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.4	<4.3	<4.2	<4.4	<4.3	<4.7	<4.2	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.4	<4.3	<4.2	<4.4	<4.3	<4.7	<4.2	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	6.6	<4.3	<4.2	4.7	<4.3	11	<4.2	5
Perfluorobutanoic acid (PFBA)	NA	<8.8	<8.6	<8.3	<8.8	<8.6	<9.4	<8.5	<8.5
Perfluorodecane sulfonic acid (PFDS)	NA	<4.4	<4.3	<4.2	<4.4	<4 3	<4.7	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.4	<4.3	<4.2	<4.4	<4 3	<4.7	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.4	<4.3	<4.2	<4.4	<4 3	<4.7	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.4	<4.3	<4.2	<4.4	<4 3	<4.7	<4.2	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.4	<4.3	<4.2	<4.4	<4 3	<4.7	<4.2	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.4	<4.3	<4.2	<4.4	<4 3	<4.7	<4.2	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.4	<4.3	<4.2	<4.4	<4 3	11	<4.2	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.4	<4.3	<4.2	<4.4	<4 3	<4.7	<4.2	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.4	<4.3	<4.2	<4.4	<4 3	<4.7	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.4	<4.3	<4.2	<4.4	<4 3	<4.7	<4.2	<4.2
Perfluorooctanoic acid (PFOA)	70	5.1	<1.7	<1.7	<1.8	<1.7	<1.9	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.4	<4.3	<4.2	<4.4	<4 3	17	<4.2	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.4	<4.3	<4.2	<4.4	<4 3	<4.7	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4.4	<4.3	<4.2	<4.4	<4 3	<4.7	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4.4	<4.3	<4.2	<4.4	<4 3	<4.7	<4.2	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411009200027	411009200032	411009200041	411009200042	411009200036	411010151003	411010151011	411010151012
GZAParcelNum		561	562	563	564	565	566	567	568
Sample Name		7550 HERRINGTON	7500 HERRINGTON	7460 HERRINGTON	7444 HERRINGTON	7400 HERRINGTON	7385 Belmont	7363 Belmont	7335 Belmont
Contact Name		[redacted]							
Address_UC		7550 HERRINGTON AVE NE	7500 HERRINGTON AVE NE	7460 HERRINGTON AVE NE	7444 HERRINGTON AVE NE	7400 HERRINGTON AVE NE	7385 BELMONT AVE NE	7363 BELMONT AVE NE	7335 BELMONT AVE NE
Laboratory ID		K1710693-020	K1710693-019	K1710771-019	K1710693-018	K1711115-011	K1710610-005	K1710610-004	K1710610-003
Sample Date		10/03/2017	10/03/2017	10/04/2017	10/03/2017	10/12/2017	09/29/2017	09/29/2017	09/29/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.2	<4.2	<4 3	<4.7	<4.3	<4.3	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.2	<4.2	<4 3	<4.7	<4.3	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.2	<4.2	<4 3	<4.7	<4.3	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.2	<4 3	<4.7	<4.3	<4.3	<4.3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.2	<4.2	<4 3	<4.7	<4.3	<4.3	<4.3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.2	<4 3	<4.7	<4.3	<4.3	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	6.7	8.4	14	7.6	<4.7	<4.3	<4.3	<4.3
Perfluorobutanoic acid (PFBA)	NA	<8.5	<8.5	<8.5	<8.6	<9.4	<8.6	<8.7	<8.7
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.2	<4.2	<4.3	<4.7	<4.3	<4.3	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.2	<4.2	<4.3	<4.7	<4.3	<4.3	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.2	<4.2	<4.3	<4.7	<4.3	<4.3	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.2	<4.2	<4.3	<4.7	<4.3	<4.3	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.2	<4.2	<4.3	<4.7	<4.3	<4.3	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.2	4.8	<4.3	<4.7	<4.3	<4.3	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<4.2	6.1	12	5.8	<4.7	<4.3	<4.3	5.5
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.2	<4.2	<4.3	<4.7	<4.3	<4.3	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4 2	<4.2	<4.2	<4.3	<4.7	<4.3	<4.3	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4 2	<4.2	<4.2	<4.3	<4.7	<4.3	<4.3	<4.3
Perfluorooctanoic acid (PFOA)	70	4.2	4 9	5.1	5	<1 9	<1.7	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	4.7	7.4	4.3	6.4	<4.7	<4.3	<4.3	6.9
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.2	<4.2	<4.3	<4.7	<4.3	<4.3	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.2	<4.2	<4.3	<4.7	<4.3	<4.3	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.2	<4.2	<4.3	<4.7	<4.3	<4.3	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010151007	411010151018	411010151017	411010151024	411010151023	411010151004	411010151006	411010151022
GZAParcelNum		569	570	571	572	573	574	575	576
Sample Name		7319 BELMONT	7296 HICKORY TRAIL	7304 HICKORY TRAIL	7311 HICKORY TRAIL	7309 HICKORY TRAIL	7307 HICKORY LANE	7305 HICKORY TRAIL	7303 HICKORY TRAIL
Contact Name		[redacted]							
Address_UC		7319 BELMONT AVE NE	7296 HICKORY TRL NE	7304 HICKORY TRL NE	7311 HICKORY TRL NE	7309 HICKORY TRL NE	7307 HICKORY TRL NE	7305 HICKORY TRL NE	7303 HICKORY TRL NE
Laboratory ID		K1711414-003	K1710940-014	K1710940-015	K1711115-005	K1711115-012	K1711115-004	K1710940-016	K1710940-017
Sample Date		10/19/2017	10/05/2017	10/05/2017	10/10/2017	10/12/2017	10/10/2017	10/05/2017	10/05/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.3	<4.3	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.3	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.3	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.3	<4.3	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.3	<4.3	<4 3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.3	<4.3	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	<4.2	<4.3	6	5	5.2	7	4.7
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.5	<8.6	<8.6	<8.6	<8.6	<8.7	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.3	<4.3	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.3	<4.3	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.3	<4.3	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.2	<4.3	<4.3	<4.3	<4.3	<4.3	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.2	<4.3	<4.3	<4.3	<4.3	<4.3	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.2	<4.3	<4.3	<4.3	<4.3	<4.3	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.2	<4.3	<4.3	<4.3	<4.3	<4.3	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.2	<4.3	<4.3	<4 3	<4.3	<4.3	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.2	<4.3	<4.3	<4 3	<4.3	<4.3	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.2	<4.3	<4.3	<4 3	<4.3	<4.3	<4.3
Perfluorooctanoic acid (PFOA)	70	<1.7	2 2	<1.7	<1.7	2.1	3 2	3.2	5.9
Perfluoropentanoic acid (PFPeA)	NA	<4.2	<4.2	<4.3	<4.3	<4 3	<4.3	<4.3	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.2	<4.3	<4.3	<4 3	<4.3	<4.3	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.2	<4.3	<4.3	<4 3	<4.3	<4.3	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.2	<4.3	<4.3	<4 3	<4.3	<4.3	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010151022	411010151021	411010151020	411010302001	411010302002	411010302009	411010302010	411010302012
GZAParcelNum		576	578	579	580	581	582	583	584
Sample Name		7303 HICKORY TRAIL-2	7235 PINE HILL	7211 PINE HILL	7220 PINE HILL	7144 PINE HILL	7143 Belmont	7126 Pine Hill	7060 PINE HILL
Contact Name		[redacted]							
Address_UC		7303 HICKORY TRL NE	7235 PINE HILL DR NE	7211 PINE HILL DR NE	7220 PINE HILL DR NE	7144 PINE HILL DR NE	7143 BELMONT AVE NE	7126 PINE HILL DR NE	7060 PINE HILL DR NE
Laboratory ID		K1711414-004	K1710771-017	K1710771-016	K1711115-003	K1711115-002	K1710610-010	K1710498-017	K1710940-021
Sample Date		10/19/2017	10/04/2017	10/04/2017	10/10/2017	10/10/2017	09/29/2017	09/28/2017	10/06/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.2	<4.3	<4.4
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.2	<4.3	<4.4
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.2	<4.3	<4.4
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.2	<4.3	<4.4
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.2	<4.3	<4.4
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.2	<4.3	<4.4
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	<4.2	<4.3	<4 3	<4.3	5	86	<4.4
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.5	<8.7	<8.6	<8.6	<8.3	19	<8.8
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.2	<4.3	<4.4
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.2	<4.3	<4.3	<4.3	<4.2	<4.3	<4.4
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.2	<4.3	<4.3	<4.3	<4.2	<4.3	<4.4
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.2	<4.3	<4.3	<4.3	<4.2	<4.3	<4.4
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.2	<4.3	<4.3	<4.3	<4.2	43	<4.4
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.2	4.9	<4.3	9	<4.2	18	<4.4
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.2	<4.3	<4.3	<4 3	<4.2	42	<4.4
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.2	<4.3	<4.3	<4 3	<4.2	<4.3	<4.4
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.2	<4.3	<4.3	<4 3	<4.2	<4.3	<4.4
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.2	<4.3	<4.3	<4 3	<4.2	<4.3	<4.4
Perfluorooctanoic acid (PFOA)	70	3.7	<1.7	2.5	<1.7	<1.7	<1.7	32	<1.8
Perfluoropentanoic acid (PFPeA)	NA	<4 2	<4.2	<4.3	<4.3	<4 3	<4.2	30	<4.4
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.2	<4.3	<4.3	<4 3	<4.2	<4.3	<4.4
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.2	<4.3	<4.3	<4 3	<4.2	<4.3	<4.4
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.2	<4.3	<4.3	<4 3	<4.2	<4.3	<4.4

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010301017	411010301015	411010301014	411010301012	411010301011	411010301027	411010301026	411009200047
GZAParcelNum		585	586	587	588	589	590	591	592
Sample Name		6990 HERRINGTON	7045 PINE HILL	7061 PINE HILL	7105 PINE HILL	7125 Pine Hill	7143 Pine Hill	7034 HERRINGTON	7210 HERRINGTON
Contact Name		[redacted]							
Address_UC		6990 HERRINGTON AVE NE	7045 PINE HILL DR NE	7061 PINE HILL DR NE	7105 PINE HILL DR NE	7125 PINE HILL DR NE	7143 PINE HILL DR NE	7034 HERRINGTON AVE NE	7210 HERRINGTON AVE NE
Laboratory ID		K1711414-005	K1710611-003	K1710611-002	K1710611-001	K1710498-018	K1710498-016	K1710940-022	K1710693-014
Sample Date		10/19/2017	09/29/2017	09/29/2017	09/29/2017	09/28/2017	09/28/2017	10/06/2017	10/03/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.3	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.3	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.3	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.3	<4.2	<4 2	<4.3	<4.3	<4.3	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.2	<4 2	<4.3	<4.3	<4.3	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	53	50	17	81	34	15	<4.2
Perfluorobutanoic acid (PFBA)	NA	<8.3	13	14	<8 5	20	<8.6	<8.6	<8.5
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.3	<4.2	<4 2	<4.3	<4.3	<4.3	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.3	<4.2	<4 2	<4.3	<4.3	<4.3	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.3	<4.2	<4 2	<4.3	<4.3	<4.3	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.3	<4.2	<4 2	<4.3	<4.3	<4.3	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	34	30	13	48	19	8.5	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	21	8.6	4.9	29	11	5.5	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.2	31	30	11	44	17	10	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.3	<4.2	<4 2	<4.3	<4.3	<4.3	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.3	<4.2	<4.2	<4.3	<4.3	<4.3	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.3	<4.2	<4.2	<4.3	<4.3	<4.3	<4.2
Perfluorooctanoic acid (PFOA)	70	<1.7	34	20	11	64	21	11	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.2	20	21	8.8	30	13	4.7	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.2	<4.3	<4.2	<4.2	<4.3	<4.3	<4.3	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4.2	<4.3	<4.2	<4.2	<4.3	<4.3	<4.3	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4.2	<4.3	<4.2	<4.2	<4.3	<4.3	<4.3	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411009200046	411009200013	411009426001	411009429002	411009429003	411009429006	411010301022	411009429001
GZAParcelNum		593	594	595	596	597	598	599	600
Sample Name		7220 HERRINGTON	7211 HERRINGTON	7193 HERRINGTON	7079 SPRUCEWOOD	7049 Herrington SW	7029 Sprucewood/Herrington	6997 HERRINGTON	7157 HERRINGTON
Contact Name		[redacted]							
Address_UC		7220 HERRINGTON AVE NE	7211 HERRINGTON AVE NE	7193 HERRINGTON AVE NE	7079 SPRUCEWOOD DR NE	7049 HERRINGTON AVE NE	7029 HERRINGTON AVE NE	6997 HERRINGTON AVE NE	7157 HERRINGTON AVE NE
Laboratory ID		K1710693-016	K1710693-015	K1710693-012	K1710771-018	K1711956-002	K1710610-002	K1710693-011	K1710693-013
Sample Date		10/03/2017	10/03/2017	10/03/2017	10/04/2017	11/01/2017	09/29/2017	10/03/2017	10/03/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2	<4 3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2	<4 3
Perfluorobutane sulfonic acid (PFBS)	NA	24	<4.3	59	5.2	<4.2	<4.2	14	11
Perfluorobutanoic acid (PFBA)	NA	<8.5	<8.6	25	<8.6	<8.3	<8.3	<8.5	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2	<4 3
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2	<4 3
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2	<4 3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2	<4 3
Perfluoroheptanoic acid (PFHpA)	NA	18	<4.3	<4.3	<4 3	<4.2	<4.2	6.7	<4 3
Perfluorohexane sulfonic acid (PFHxS)	NA	16	<4.3	<4.3	<4 3	<4.2	<4.2	5.2	5.4
Perfluorohexanoic acid (PFHxA)	NA	15	<4.3	12	5.1	<4.2	<4.2	11	<4 3
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2	<4 3
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2	<4 3
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2	<4 3
Perfluorooctanoic acid (PFOA)	70	24	3.2	<1.7	3.7	<1.7	<1.7	5.7	4.3
Perfluoropentanoic acid (PFPeA)	NA	11	<4.3	23	<4 3	<4.2	<4.2	5.7	<4 3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.2	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2	<4 3
Perfluorotridecanoic acid (PFTrDA)	NA	<4.2	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2	<4 3
Perfluoroundecanoic acid (PFUnDA)	NA	<4.2	<4.3	<4.3	<4 3	<4.2	<4.2	<4.2	<4 3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411009428003	411009428002	411009428004	411009428001	411010176001	411010176002	411010176012	411010176010
GZAParcelNum		601	602	603	604	700	701	702	703
Sample Name		2260 Sprucewood	2250 Sprucewood	2265 Sprucewood	2241 Sprucewood	7350 Belmont Ave NE	7475 Packer Drive NE	7461 Packer Drive NE	7455 Packer Dr. NE
Contact Name		[redacted]							
Address_UC		2260 SPRUCEWOOD CT NE	2250 SPRUCEWOOD CT NE	2265 SPRUCEWOOD CT NE	2241 SPRUCEWOOD CT NE	7350 BELMONT AVE NE	7475 PACKER DR NE	7461 PACKER DR NE	7455 PACKER DR NE
Laboratory ID		K1710498-032	K1710498-031	K1710610-001	K1710498-030	K1711719-020	K1711614-001	K1711614-002	K1711964-006
Sample Date		09/28/2017	09/28/2017	09/29/2017	09/28/2017	10/26/2017	10/24/2017	10/24/2017	11/01/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.2	<4.3	<4 2	<4.3	<4.1	<4.1	<4.1
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.2	<4.3	<4 2	<4.3	<4.1	<4.1	<4.1
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.2	<4.3	<4 2	<4.3	<4.1	<4.1	<4.1
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.3	<4 2	<4.3	<4.1	<4.1	<4.1
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.2	<4.3	<4 2	<4.3	<4.1	<4.1	<4.1
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.3	<4 2	<4.3	<4.1	<4.1	<4.1
Perfluorobutane sulfonic acid (PFBS)	NA	12	12	7.9	12	<4.3	<4.1	<4.1	<4.1
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.3	<8.6	<8 5	<8.6	<8.1	<8.1	<8.2
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.2	<4.3	<4 2	<4.3	<4.1	<4.1	<4.1
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.2	<4.3	<4 2	<4.3	<4.1	<4.1	<4.1
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.2	<4.3	<4 2	<4.3	<4.1	<4.1	<4.1
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.2	<4.3	<4.2	<4.3	<4.1	<4.1	<4.1
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.2	<4.3	<4.2	<4.3	<4.1	<4.1	<4.1
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.2	<4.3	4.3	<4.3	<4.1	<4.1	<4.1
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.2	<4.3	<4.2	<4.3	<4.1	<4.1	<4.1
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.2	<4.3	<4.2	<4 3	<4.1	<4.1	<4.1
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.2	<4.3	<4.2	<4 3	<4.1	<4.1	<4.1
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.2	<4.3	<4.2	<4 3	<4.1	<4.1	<4.1
Perfluorooctanoic acid (PFOA)	70	5.6	3.6	3.5	4.2	<1.7	<1.6	<1.6	<1.6
Perfluoropentanoic acid (PFPeA)	NA	<4 2	<4.2	<4.3	<4.2	<4 3	<4.1	<4.1	<4.1
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.2	<4.3	<4.2	<4 3	<4.1	<4.1	<4.1
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.2	<4.3	<4.2	<4 3	<4.1	<4.1	<4.1
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.2	<4.3	<4.2	<4 3	<4.1	<4.1	<4.1

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010176011	411010200003	411010200019	411010200007	411010176015	411010176016	411010176006	411010200028
GZAParcelNum		704	705	706	707	708	709	710	711
Sample Name		7429 Packer Dr NE	7390 Packer Dr NE	7450 Roguewood Dr NE	7300 Packer Dr NE	7349 Packer Drive NE	7315 Packer Dr NE	7301 Packer Dr NE	7280 Packer Dr NE
Contact Name		[redacted]							
Address_UC		7429 PACKER DR NE	7390 PACKER DR NE	7450 ROGUEWOOD DR NE	7300 PACKER DR NE	7349 PACKER DR NE	7315 PACKER DR NE	7301 PACKER DR NE	7280 PACKER DR NE
Laboratory ID		K1711719-013	K1711658-013	K1711723-006	K1711658-012	K1711614-003	K1711719-014	K1711719-001	K1711658-009
Sample Date		10/26/2017	10/25/2017	10/26/2017	10/25/2017	10/24/2017	10/26/2017	10/26/2017	10/25/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<5.4	<4.2	<4 2	<4.2	<4.3	<4.4	<5.4
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<5.4	<4.2	<4 2	<4.2	<4.3	<4.4	<5.4
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<5.4	<4.2	<4 2	<4.2	<4.3	<4.4	<5.4
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<5.4	<4.2	<4 2	<4.2	<4.3	<4.4	<5.4
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<5.4	<4.2	<4 2	<4.2	<4.3	<4.4	<5.4
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<5.4	<4.2	<4 2	<4.2	<4.3	<4.4	<5.4
Perfluorobutane sulfonic acid (PFBS)	NA	<4.3	<5.4	<4.2	<4 2	<4.2	<4.3	<4.4	<5.4
Perfluorobutanoic acid (PFBA)	NA	<8.6	<11	<8.3	<8 3	<8.3	<8.6	<8.8	<11
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<5.4	<4.2	<4 2	<4.2	<4.3	<4.4	<5.4
Perfluorodecanoic acid (PFDA)	NA	<4.3	<5.4	<4.2	<4 2	<4.2	<4.3	<4.4	<5.4
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<5.4	<4.2	<4 2	<4.2	<4.3	<4.4	<5.4
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<5.4	<4.2	<4 2	<4.2	<4.3	<4.4	<5.4
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<5.4	<4.2	<4 2	<4.2	<4.3	<4.4	<5.4
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	<5.4	<4.2	<4 2	4.3	<4.3	<4.4	<5.4
Perfluorohexanoic acid (PFHxA)	NA	<4.3	<5.4	<4.2	<4 2	<4.2	<4.3	<4.4	<5.4
Perfluorononanoic acid (PFNA)	NA	<4.3	<5.4	<4.2	<4 2	<4.2	<4.3	<4.4	<5.4
Perfluorooctane sulfonamide (FOSA)	NA	<4.3	<5.4	<4.2	<4 2	<4.2	<4.3	<4.4	<5.4
Perfluorooctane sulfonic acid (PFOS)	70	<4.3	<5.4	<4.2	<4.2	<4.2	<4.3	<4.4	<5.4
Perfluorooctanoic acid (PFOA)	70	<1.7	<2.1	<1.7	<1.7	<1.7	<1.7	<1.8	<2.1
Perfluoropentanoic acid (PFPeA)	NA	<4.3	<5.4	<4.2	<4.2	<4.2	<4.3	<4.4	<5.4
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.3	<5.4	<4.2	<4.2	<4.2	<4.3	<4.4	<5.4
Perfluorotridecanoic acid (PFTrDA)	NA	<4.3	<5.4	<4.2	<4.2	<4 2	<4.3	<4.4	<5.4
Perfluoroundecanoic acid (PFUnDA)	NA	<4.3	<5.4	<4.2	<4.2	<4 2	<4.3	<4.4	<5.4

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010200010	411010200022	411010200027	411010200024	411010200035	411010200034	411010176019	411010176018
GZAParcelNum		712	713	714	715	716	717	718	719
Sample Name		7250 Packer Dr NE	7220 Roguewood Dr NE	7200 Roguewood Dr NE	7244 Packer Dr NE	7256 Packer Dr NE	7262 Packer Dr. NE	7275 Packer Dr NE	7265 Packer Dr NE
Contact Name		[redacted]							
Address_UC		7250 PACKER DR NE	7220 ROGUEWOOD DR NE	7200 ROGUEWOOD DR NE	7244 PACKER DR NE	7256 PACKER DR NE	7262 PACKER DR NE	7295 PACKER DR NE	7265 PACKER DR NE
Laboratory ID		K1711658-005	K1711723-007	K1711719-010	K1711723-005	K1711658-004	K1711964-001	K1711957-001	K1711719-015
Sample Date		10/25/2017	10/26/2017	10/26/2017	10/26/2017	10/25/2017	11/01/2017	11/02/2017	10/26/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2	<4.4
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2	<4.4
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2	<4.4
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2	<4.4
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2	<4.4
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2	<4.4
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2	<4.4
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.3	<8.6	<8.6	<8.3	<8.6	<8.5	<8 8
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2	<4.4
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2	<4.4
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2	<4.4
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2	<4.4
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2	<4.4
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2	<4.4
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2	<4.4
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.2	<4.3	<4 3	<4.2	<4.3	<4.2	<4.4
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.2	<4.3	<4.3	<4.2	<4.3	<4.2	<4.4
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.2	<4.3	<4.3	<4.2	<4.3	<4.2	<4.4
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.8
Perfluoropentanoic acid (PFPeA)	NA	<4.2	<4.2	<4.3	<4.3	<4.2	<4.3	<4.2	<4.4
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.2	<4.2	<4.3	<4.3	<4 2	<4.3	<4.2	<4.4
Perfluorotridecanoic acid (PFTrDA)	NA	<4.2	<4.2	<4.3	<4.3	<4 2	<4.3	<4.2	<4.4
Perfluoroundecanoic acid (PFUnDA)	NA	<4.2	<4.2	<4.3	<4.3	<4 2	<4.3	<4.2	<4.4

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010176008	411010176021	411010326027	411010326016	411010326018	411010326024	411010401004	411010401005
GZAParcelNum		720	722	724	725	726	727	728	729
Sample Name		7280 Belmont Ave NE	7220 Belmont Ave NE	7190 Belmont Ave NE	7170 Belmont Ave NE	2775 Van Dam Dr NE	2755 Van Dam Drive NE	7259 Packer Dr NE	7245 Packer Dr NE
Contact Name		[redacted]							
Address_UC		7280 BELMONT AVE NE	7220 BELMONT AVE NE	7190 BELMONT AVE NE	7170 BELMONT AVE NE	2775 VAN DAM DR NE	2755 VAN DAM DR NE	7259 PACKER DR NE	7245 PACKER DR NE
Laboratory ID		K1711613-001	K1711613-002	K1711613-003	K1711613-004	K1711719-016	K1711614-004	K1711661-021	K1711661-020
Sample Date		10/24/2017	10/24/2017	10/24/2017	10/24/2017	10/26/2017	10/24/2017	10/25/2017	10/25/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.1	<4.2	<4 3	<4.2	<4.2	<4.2	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.1	<4.2	<4 3	<4.2	<4.2	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.1	<4.2	<4 3	<4.2	<4.2	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.1	<4.2	<4 3	<4.2	<4.2	<4.2	<4 2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.1	<4.2	<4 3	<4.2	<4.2	<4.2	<4 2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.1	<4.2	<4 3	<4.2	<4.2	<4.2	<4 2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.3	4.1	<4.2	<4 3	<4.2	7.5	<4.2	<4 2
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.1	<8.3	<8.6	<8.3	<8.3	<8.3	<8.3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.1	<4.2	<4 3	<4.2	<4.2	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.1	<4.2	<4 3	<4.2	<4.2	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.1	<4.2	<4 3	<4.2	<4.2	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.1	<4.2	<4 3	<4.2	<4.2	<4.2	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<4.1	<4.2	<4.3	<4.2	<4.2	<4.2	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	<4.1	<4.2	<4.3	<4.2	<4.2	<4.2	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.3	<4.1	<4.2	<4.3	<4.2	<4.2	<4.2	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.3	<4.1	<4.2	<4.3	<4.2	<4.2	<4.2	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.3	<4.1	<4.2	<4.3	<4 2	<4.2	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.3	<4.1	<4.2	<4.3	<4 2	<4.2	<4.2	<4.2
Perfluorooctanoic acid (PFOA)	70	<1.7	1 9	2.7	<1.7	<1.7	1 9	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.3	<4.1	<4.2	<4.3	<4 2	<4.2	<4.2	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.3	<4.1	<4.2	<4.3	<4 2	<4.2	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4 3	<4.1	<4.2	<4.3	<4 2	<4.2	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 3	<4.1	<4.2	<4.3	<4 2	<4.2	<4.2	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010401006	411010451023	411010451028	411010451025	411010451027	411010426013	411010426017	411010426002
GZAParcelNum		730	731	732	733	734	735	736	737
Sample Name		2760 Van Dam Dr NE	7229 Packer Dr NE	7223 Packer Dr NE	7147 Packer Dr NE	7225 Packer Dr NE	7228 Packer Dr NE	7150 Roquewood	7212 Packer Dr NE
Contact Name		[redacted]							
Address_UC		2760 VAN DAM DR NE	7229 PACKER DR NE	7223 PACKER DR NE	7147 PACKER DR NE	7225 PACKER DR NE	7228 PACKER DR NE	7150 ROGUEWOOD DR NE	7212 PACKER DR NE
Laboratory ID		K1711661-010	K1711716-026	K1711716-027	K1711716-028	K1711716-029	K1711658-006	K1711844-010	K1711719-023
Sample Date		10/25/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017	10/25/2017	10/31/2017	10/26/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	<4.4	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	<4.4	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	<4.4	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	<4.4	<4 2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	<4.4	<4 2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	<4.4	<4 2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	6.6	<4 2
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.1	<8.1	<8.1	<8.1	<8.6	<8.8	<8 3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	<4.4	<4 2
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	<4.4	<4 2
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	<4.4	<4 2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	<4.4	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	<4.4	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	<4.4	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	<4.4	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	<4.4	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	<4.4	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	<4.4	<4.2
Perfluorooctanoic acid (PFOA)	70	<1.7	5	<1.6	<1.6	<1.6	<1.7	<1.8	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	<4.4	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	<4.4	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	<4.4	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4.2	<4.1	<4.1	<4.1	<4.1	<4.3	<4.4	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010426010	411010426011	411010426012	411010426019	411010426018	411010426005	411010426020	411010426021
GZAParcelNum		738	739	740	741	742	743	744	745
Sample Name		7210 Packer Dr NE	7208 Packer Dr NE	7000 Packer Dr NE	7035 Packer Dr NE	7145 Packer Dr NE	7215 Packer Dr NE	7205 Packer Dr. NE	7209 Packer Dr NE
Contact Name		[redacted]							
Address_UC		7210 PACKER DR NE	7208 PACKER DR NE	7000 PACKER DR NE	7035 PACKER DR NE	7145 PACKER DR NE	7215 PACKER DR NE	7205 PACKER DR NE	7209 PACKER DR NE
Laboratory ID		K1711658-014	K1711658-007	K1711658-010	K1711719-021	K1711719-022	K1711716-030	K1711964-002	K1711716-031
Sample Date		10/25/2017	10/25/2017	10/25/2017	10/26/2017	10/26/2017	10/26/2017	11/01/2017	10/26/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<5.4	<4.3	<4.2	<4 2	<4.1	<4.1	<4.2	<4.1
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<5.4	<4.3	<4.2	<4 2	<4.1	<4.1	<4.2	<4.1
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<5.4	<4.3	<4.2	<4 2	<4.1	<4.1	<4.2	<4.1
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<5.4	<4.3	<4.2	<4 2	<4.1	<4.1	<4.2	<4.1
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<5.4	<4.3	<4.2	<4 2	<4.1	<4.1	<4.2	<4.1
N-Methyl perfluorooctane sulfonamidoethanol	NA	<5.4	<4.3	<4.2	<4 2	<4.1	<4.1	<4.2	<4.1
Perfluorobutane sulfonic acid (PFBS)	NA	<5.4	<4.3	11	5.6	<4.1	<4.1	<4.2	<4.1
Perfluorobutanoic acid (PFBA)	NA	<11	<8.6	<8.3	<8 3	<8.1	<8.1	<8.5	<8.1
Perfluorodecane sulfonic acid (PFDS)	NA	<5.4	<4.3	<4.2	<4 2	<4.1	<4.1	<4.2	<4.1
Perfluorodecanoic acid (PFDA)	NA	<5.4	<4.3	<4.2	<4 2	<4.1	<4.1	<4.2	<4.1
Perfluorododecanoic acid (PFDoDA)	NA	<5.4	<4.3	<4.2	<4 2	<4.1	<4.1	<4.2	<4.1
Perfluoroheptane sulfonic acid (PFHpS)	NA	<5.4	<4.3	<4.2	<4 2	<4.1	<4.1	<4.2	<4.1
Perfluoroheptanoic acid (PFHpA)	NA	<5.4	<4.3	<4.2	<4 2	<4.1	<4.1	<4.2	<4.1
Perfluorohexane sulfonic acid (PFHxS)	NA	<5.4	<4.3	8.2	<4 2	<4.1	<4.1	<4.2	<4.1
Perfluorohexanoic acid (PFHxA)	NA	<5.4	<4.3	14	<4 2	<4.1	<4.1	<4.2	<4.1
Perfluorononanoic acid (PFNA)	NA	<5.4	<4.3	<4.2	<4 2	<4.1	<4.1	<4.2	<4.1
Perfluorooctane sulfonamide (FOSA)	NA	<5.4	<4.3	<4.2	<4 2	<4.1	<4.1	<4.2	<4.1
Perfluorooctane sulfonic acid (PFOS)	70	<5.4	<4.3	8.8	<4.2	<4.1	<4.1	<4.2	<4.1
Perfluorooctanoic acid (PFOA)	70	<2.1	<1.7	8.5	2.3	<1.6	<1.6	<1.7	<1.6
Perfluoropentanoic acid (PFPeA)	NA	<5.4	<4.3	11	<4.2	<4.1	<4.1	<4.2	<4.1
Perfluorotetradecanoic acid (PFTeDA)	NA	<5.4	<4.3	<4.2	<4.2	<4.1	<4.1	<4.2	<4.1
Perfluorotridecanoic acid (PFTrDA)	NA	<5.4	<4.3	<4.2	<4.2	<4.1	<4.1	<4.2	<4.1
Perfluoroundecanoic acid (PFUnDA)	NA	<5.4	<4.3	<4.2	<4.2	<4.1	<4.1	<4.2	<4.1

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010451011	411010451010	411010326034	411010326021	411010326031	411010303008	411010303003	411010303006
GZAParcelNum		746	747	748	749	750	751	752	753
Sample Name		7149 Packer Dr NE	7181 Packer Drive NE	2741 Van dam Dr Ave NE	2655 Van Dam Dr	7144 Belmont Ave NE	7124 Belmont Ave NE	7064 Belmont Ave NE	7050 Belmont Ave NE
Contact Name		[redacted]							
Address_UC		7149 PACKER DR NE	7181 PACKER DR NE	2741 VAN DAM DR NE	2655 VAN DAM DR NE	7144 BELMONT AVE NE	7124 BELMONT AVE NE	7064 BELMONT AVE NE	7050 BELMONT AVE NE
Laboratory ID		K1711788-005	K1713716-001	K1711660-015	K1712064-007	K1711723-009	K1711660-001	K1711613-005	K1711719-019
Sample Date		10/27/2017	12/19/2017	10/25/2017	11/03/2017	10/26/2017	10/25/2017	10/24/2017	10/26/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.1	<4.2	<4.1	<4.4	<4.2	<4.2	<4.3	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.1	<4.2	<4.1	<4.4	<4.2	<4.2	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.1	<4.2	<4.1	<4.4	<4.2	<4.2	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.1	<4.2	<4.1	<4.4	<4.2	<4.2	<4.3	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.1	<4.2	<4.1	<4.4	<4.2	<4.2	<4.3	<4.3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.1	<4.2	<4.1	<4.4	<4.2	<4.2	<4.3	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	<4.1	<4.2	<4.1	<4.4	<4.2	<4.2	<4.3	<4.3
Perfluorobutanoic acid (PFBA)	NA	<8.1	<8.5	<8.1	<8 8	<8.3	14	<8.6	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.1	<4.2	<4.1	<4.4	<4.2	<4.2	<4.3	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.1	<4.2	<4.1	<4.4	<4.2	<4.2	<4.3	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.1	<4.2	<4.1	<4.4	<4.2	<4.2	<4.3	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.1	<4.2	<4.1	<4.4	<4.2	<4.2	<4.3	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.1	<4.2	<4.1	<4.4	<4.2	<4.2	<4.3	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.1	<4.2	<4.1	<4.4	<4 2	<4.2	<4.3	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<4.1	<4.2	<4.1	<4.4	<4 2	<4.2	<4.3	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.1	<4.2	<4.1	<4.4	<4 2	<4.2	<4.3	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.1	<4.2	<4.1	<4.4	<4 2	<4.2	<4.3	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4.1	<4.2	<4.1	<4.4	<4 2	<4.2	<4.3	<4.3
Perfluorooctanoic acid (PFOA)	70	<1.6	<1.7	<1.6	<1.8	<1.7	3.6	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.1	<4.2	<4.1	<4.4	<4 2	<4.2	<4.3	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.1	<4.2	<4.1	<4.4	<4 2	<4.2	<4.3	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4.1	<4.2	<4.1	<4.4	<4 2	<4.2	<4.3	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4.1	<4.2	<4.1	<4.4	<4 2	<4.2	<4.3	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010303007	411010303002	411010326002	411010326038	411010326003	411010326014	411010326015	411010326035
GZAParcelNum		754	755	756	757	758	759	760	761
Sample Name		2555 Van Dam Dr NE	2559 Van Dam Dr NE	2613 Van dam Dr Ave NE	7077 Emerald Forest Dr NE	2635 Van dam Dr Ave NE	2661 Van dam Dr Ave NE	2671 Van Dam Dr NE	2727 Van dam Dr Ave NE
Contact Name		[redacted]							
Address_UC		2555 VAN DAM DR NE	2559 VAN DAM DR NE	2615 VAN DAM DR NE	7077 EMERALD FOREST DR NE	2635 VAN DAM DR NE	2661 VAN DAM DR NE	2671 VAN DAM DR NE	2727 VAN DAM DR NE
Laboratory ID		K1711787-001	K1711787-003	K1711660-011	K1711719-018	K1711660-012	K1711660-013	K1711719-017	K1711660-014
Sample Date		10/27/2017	10/27/2017	10/25/2017	10/26/2017	10/25/2017	10/25/2017	10/26/2017	10/25/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.2	<4.2	<4 3	<4.2	<4.2	<5.3	<4.1
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.2	<4.2	<4 3	<4.2	<4.2	<5.3	<4.1
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.2	<4.2	<4 3	<4.2	<4.2	<5.3	<4.1
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.2	<4 3	<4.2	<4.2	<5.3	<4.1
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.2	<4.2	<4 3	<4.2	<4.2	<5.3	<4.1
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.2	<4 3	<4.2	<4.2	<5.3	<4.1
Perfluorobutane sulfonic acid (PFBS)	NA	7 8	<4.2	4.9	<4 3	8.6	<4.2	<5.3	<4.1
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.3	<8.3	<8.6	<8.3	<8.3	<11	<8.1
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2	<5.3	<4.1
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2	<5.3	<4.1
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2	<5.3	<4.1
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.2	<4.2	<4.3	<4.2	<4.2	<5.3	<4.1
Perfluoroheptanoic acid (PFHpA)	NA	5.1	<4.2	<4.2	<4.3	5.5	<4.2	<5.3	<4.1
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	<4.2	5.2	7.6	5.2	<4.2	<5.3	<4.1
Perfluorohexanoic acid (PFHxA)	NA	6.5	<4.2	<4.2	<4.3	4.4	<4.2	<5.3	<4.1
Perfluorononanoic acid (PFNA)	NA	<4.3	<4.2	<4.2	<4.3	<4 2	<4.2	<5.3	<4.1
Perfluorooctane sulfonamide (FOSA)	NA	<4 3	<4.2	<4.2	<4.3	<4 2	<4.2	<5.3	<4.1
Perfluorooctane sulfonic acid (PFOS)	70	<4 3	<4.2	<4.2	<4.3	<4 2	<4.2	<5.3	<4.1
Perfluorooctanoic acid (PFOA)	70	3.3	<1.7	3.9	2.6	5.7	<1.7	<2.1	<1.6
Perfluoropentanoic acid (PFPeA)	NA	<4 3	<4.2	<4.2	<4.3	<4 2	<4.2	<5.3	<4.1
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 3	<4.2	<4.2	<4.3	<4 2	<4.2	<5.3	<4.1
Perfluorotridecanoic acid (PFTrDA)	NA	<4 3	<4.2	<4.2	<4.3	<4 2	<4.2	<5.3	<4.1
Perfluoroundecanoic acid (PFUnDA)	NA	<4 3	<4.2	<4.2	<4.3	<4 2	<4.2	<5.3	<4.1

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010327001	411010451017	411010451013	411010476028	411010476002	411010476022	411010476004	411010476005
GZAParcelNum		763	764	765	766	767	768	769	770
Sample Name		2920 Van Dam Dr NE	7173 Packer Dr NE	7153 Packer	3047 Rogue Hollow Ct NE	3071 Rogue Hollow Ct NE	6907 Packer Dr NE	6891 Packer Dr NE	6875 Packer Dr NE
Contact Name		[redacted]							
Address_UC		2920 VAN DAM DR NE	7173 PACKER DR NE	7153 PACKER DR NE	3047 ROGUE HOLLOW CT NE	3071 ROGUE HOLLOW CT NE	6907 PACKER DR NE	6891 PACKER DR NE	6875 PACKER DR NE
Laboratory ID		K1711787-005	K1711723-002	K1712267-002	K1711719-009	K1711719-002	K1711661-016	K1711723-026	K1711723-027
Sample Date		10/27/2017	10/26/2017	11/09/2017	10/26/2017	10/26/2017	10/25/2017	10/26/2017	10/26/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.4	<4.1	<4 3	<4.3	<4.1	<4.3	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.4	<4.1	<4 3	<4.3	<4.1	<4.3	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.4	<4.1	<4 3	<4.3	<4.1	<4.3	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.4	<4.1	<4 3	<4.3	<4.1	<4.3	<4 2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.4	<4.1	<4 3	<4.3	<4.1	<4.3	<4 2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.4	<4.1	<4 3	<4.3	<4.1	<4.3	<4 2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.3	<4.4	<4.1	<4 3	<4.3	<4.1	<4.3	<4 2
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.8	<8.1	<8.6	<8.6	<8.1	<8.6	<8 3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.4	<4.1	<4 3	<4.3	<4.1	<4.3	<4 2
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.4	<4.1	<4 3	<4.3	<4.1	<4.3	<4 2
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.4	<4.1	<4 3	<4.3	<4.1	<4.3	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.4	<4.1	<4 3	<4.3	<4.1	<4.3	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<4.4	<4.1	<4 3	<4.3	<4.1	<4.3	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	<4.4	<4.1	<4 3	<4.3	<4.1	<4.3	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.3	<4.4	<4.1	<4 3	<4.3	<4.1	<4.3	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.3	<4.4	<4.1	<4.3	<4.3	<4.1	<4.3	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.3	<4.4	<4.1	<4.3	<4.3	<4.1	<4.3	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.3	<4.4	<4.1	<4.3	<4.3	<4.1	<4.3	<4.2
Perfluorooctanoic acid (PFOA)	70	2.6	2	<1.6	<1.7	<1.7	<1.6	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.3	<4.4	<4.1	<4.3	<4 3	<4.1	<4.3	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.3	<4.4	<4.1	<4.3	<4 3	<4.1	<4.3	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4.3	<4.4	<4.1	<4.3	<4 3	<4.1	<4.3	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4.3	<4.4	<4.1	<4.3	<4 3	<4.1	<4.3	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010476013	411010476012	411010476027	411010476026	411010476009	411010476025	411010476007	411010476006
GZAParcelNum		771	772	773	774	775	776	777	778
Sample Name		3086 Rogue Hill Ct NE	3066 Rogue Hill Ct NE	3046 Rogue Hill	3030 Rogue Hill Ct NE	3027 Rogue Hill Ct NE	3043 Rogue Hill Ct NE	3057 Rogue Hill Ct NE	3073 Rogue Hill Ct NE
Contact Name		[redacted]							
Address_UC		3086 ROGUE HILL CT NE	3066 ROGUE HILL CT NE	3046 ROGUE HILL CT NE	3030 ROGUE HILL CT NE	3027 ROGUE HILL CT NE	3043 ROGUE HILL CT NE	3057 ROGUE HILL CT NE	3073 ROGUE HILL CT NE
Laboratory ID		K1711723-013	K1711961-003	K1711844-009	K1711723-014	K1711723-015	K1711723-016	K1711723-017	K1711723-018
Sample Date		10/26/2017	11/01/2017	10/31/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.3	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.3	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.3	<4.2	<4 2	<4.3	<4.3	<4.3	<4.2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.3	<4.2	<4 2	<4.3	<4.3	<4.3	<4.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.3	<4.2	<4 2	<4.3	<4.3	<4.3	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.3	<4.2	<4 2	<4.3	<4.3	<4.3	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.3	<4.3	<4.2	<4 2	<4.3	<4.3	<4.3	<4.2
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.7	<8.3	<8.3	<8.6	<8.6	<8.6	<8.3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.3	<4.2	<4.2	<4.3	<4.3	<4.3	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.3	<4.2	<4.2	<4.3	<4.3	<4.3	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.3	<4.2	<4.2	<4.3	<4.3	<4.3	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.3	<4.2	<4.2	<4 3	<4.3	<4.3	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<4.3	<4.2	<4.2	<4 3	<4.3	<4.3	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	<4.3	<4.2	<4.2	<4 3	<4.3	<4.3	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.3	<4.3	<4.2	<4.2	<4 3	<4.3	<4.3	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.3	<4.3	<4.2	<4.2	<4 3	<4.3	<4.3	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4 3	<4.3	<4.2	<4.2	<4 3	<4.3	<4.3	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4 3	<4.3	<4.2	<4.2	<4 3	<4.3	<4.3	<4.2
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4 3	<4.3	<4.2	<4.2	<4 3	<4.3	<4.3	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 3	<4.3	<4.2	<4.2	<4 3	<4.3	<4.3	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4 3	<4.3	<4.2	<4.2	<4 3	<4.3	<4.3	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 3	<4.3	<4.2	<4.2	<4 3	<4.3	<4.3	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010476020	411010451014	411010451015	411010451016	411010451029	411010376015	411010376023	411010376019
GZAParcelNum		779	780	781	782	783	784	785	786
Sample Name		3036 Rogue Hollow Ct NE	7157 Packer Dr NE	7161 Packer Dr NE	7165 Packer Dr NE	7177 Packer Dr NE	2800 Van Dam Dr NE	7171 Packer Dr NE	6800 Wildwood Creek
Contact Name		[redacted]							
Address_UC		3036 ROGUE HOLLOW CT NE	7157 PACKER WOODS DR NE	7161 PACKER DR NE	7165 PACKER DR NE	7177 PACKER DR NE	2800 VAN DAM DR NE	7171 PACKER WOODS DR NE	6800 WILDWOOD CREEK DR NE
Laboratory ID		K1711719-003	K1711788-006	K1711788-015	K1711788-007	K1711723-004	K1711787-004	K1711723-003	K1711661-014
Sample Date		10/26/2017	10/27/2017	10/27/2017	10/27/2017	10/26/2017	10/27/2017	10/26/2017	10/25/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4.1
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4.1
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4.1
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4.1
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4.1
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4.1
Perfluorobutane sulfonic acid (PFBS)	NA	<4.3	<4.2	<4.2	6.4	<4.3	5.5	27	110
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.3	<8.3	<8 3	<8.6	<8.6	9	34
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4.1
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4.1
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4.1
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.2	<4.2	<4 2	<4.3	<4.3	<4.3	<4.1
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<4.2	<4.2	<4 2	<4.3	<4.3	12	68
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	<4.2	11	<4.2	<4.3	<4.3	4.4	28
Perfluorohexanoic acid (PFHxA)	NA	<4.3	<4.2	<4.2	4.9	<4.3	4.6	17	74
Perfluorononanoic acid (PFNA)	NA	<4.3	<4.2	<4.2	<4.2	<4.3	<4.3	<4.3	<4.1
Perfluorooctane sulfonamide (FOSA)	NA	<4.3	<4.2	<4.2	<4.2	<4.3	<4.3	<4.3	<4.1
Perfluorooctane sulfonic acid (PFOS)	70	<4.3	<4.2	<4.2	<4.2	<4.3	<4.3	<4.3	<4.1
Perfluorooctanoic acid (PFOA)	70	<1.7	1.8	<1.7	3	<1.7	<1.7	13	60
Perfluoropentanoic acid (PFPeA)	NA	<4.3	<4.2	<4.2	<4.2	<4 3	<4.3	8.7	36
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.3	<4.2	<4.2	<4.2	<4 3	<4.3	<4.3	<4.1
Perfluorotridecanoic acid (PFTrDA)	NA	<4.3	<4.2	<4.2	<4.2	<4 3	<4.3	<4.3	<4.1
Perfluoroundecanoic acid (PFUnDA)	NA	<4.3	<4.2	<4.2	<4.2	<4 3	<4.3	<4.3	<4.1

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010376024	411010376022	411010377004	411010377003	411010377002	411010377001	411010376009	411010376011
GZAParcelNum		787	788	789	790	791	792	793	794
Sample Name		6814 Wildwood Creek	6826 Wildwood Creek	6840 Wildwood Creek	6868 Wildwood Creek	6884 Wildwood Creek	6900 Wildwood Creek	2700 Van Dam NE	2720 Van Dam NE
Contact Name		[redacted]							
Address_UC		6814 WILDWOOD CREEK DR NE	6826 WILDWOOD CREEK DR NE	6840 WILDWOOD CREEK DR NE	6868 WILDWOOD CREEK DR NE	6884 WILDWOOD CREEK DR NE	6900 WILDWOOD CREEK DR NE	2700 VAN DAM DR NE	2720 VAN DAM DR NE
Laboratory ID		K1711661-013	K1711661-011	K1711661-009	K1711661-008	K1711661-007	K1711661-006	K1711661-002	K1711661-003
Sample Date		10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017	10/25/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.2	<4.2	<4.1	<4.2	<4.1	<4.2	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.2	<4.2	<4.1	<4.2	<4.1	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.2	<4.2	<4.1	<4.2	<4.1	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.2	<4.1	<4.2	<4.1	<4.2	<4 2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.2	<4.2	<4.1	<4.2	<4.1	<4.2	<4 2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.2	<4.1	<4.2	<4.1	<4.2	<4 2
Perfluorobutane sulfonic acid (PFBS)	NA	120	48	33	24	30	69	9.2	7.2
Perfluorobutanoic acid (PFBA)	NA	40	11	<8.3	<8.1	<8.3	16	<8.3	<8.3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.2	<4.2	<4.1	<4.2	<4.1	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.2	<4.2	<4.1	<4.2	<4.1	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.2	<4.2	<4.1	<4.2	<4.1	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	7	7.7	<4.1	4.7	<4.1	<4.2	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	69	39	24	16	27	56	4.8	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	22	66	47	24	48	56	<4.2	5.8
Perfluorohexanoic acid (PFHxA)	NA	70	27	19	16	21	41	8	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.3	<4.2	<4.2	<4.1	<4.2	<4.1	<4.2	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.3	<4.2	<4.2	<4.1	<4.2	<4.1	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.3	9.8	11	6.5	8.1	4.9	<4.2	<4.2
Perfluorooctanoic acid (PFOA)	70	58	***79***	47	29	56	***100***	5.4	3.5
Perfluoropentanoic acid (PFPeA)	NA	42	13	7.7	5.9	8.3	18	<4.2	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.3	<4.2	<4.2	<4.1	<4.2	<4.1	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4.3	<4.2	<4.2	<4.1	<4.2	<4.1	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4.3	<4.2	<4.2	<4.1	<4.2	<4.1	<4.2	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010376012	411010376025	411010376003	411010353002	411010353019	411010353020	411010353003	411010353004
GZAParcelNum		795	796	797	798	799	800	801	802
Sample Name		2730 Van Dam	2750 Van Dam NE	2630 Van Dam NE	2566 Van Dam Dr NE	6990 Pixley Ave NE	6950 Pixley Ave NE	6932 Pixley Ave NE	6918 Pixley Ave NE
Contact Name		[redacted]							
Address_UC		2730 VAN DAM DR NE	2750 VAN DAM DR NE	2630 VAN DAM DR NE	2566 VAN DAM DR NE	6990 PIXLEY AVE NE	6950 PIXLEY AVE NE	6932 PIXLEY AVE NE	6918 PIXLEY AVE NE
Laboratory ID		K1711844-012	K1711661-005	K1711661-001	K1711787-002	K1711719-008	K1711719-005	K1711613-011	K1711719-006
Sample Date		10/31/2017	10/25/2017	10/25/2017	10/27/2017	10/26/2017	10/26/2017	10/24/2017	10/26/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.2	<4.3	<4 3	<4.3	<4.3	<4.2	<4.1
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.2	<4.3	<4 3	<4.3	<4.3	<4.2	<4.1
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.2	<4.3	<4 3	<4.3	<4.3	<4.2	<4.1
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.3	<4 3	<4.3	<4.3	<4.2	<4.1
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.2	<4.3	<4 3	<4.3	<4.3	<4.2	<4.1
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.3	<4 3	<4.3	<4.3	<4.2	<4.1
Perfluorobutane sulfonic acid (PFBS)	NA	<4.3	<4.2	26	38	20	17	15	23
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.3	<8.6	13	<8.6	<8.6	<8.3	<8.1
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.2	<4.3	<4 3	<4.3	<4.3	<4.2	<4.1
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.2	<4.3	<4 3	<4.3	<4.3	<4.2	<4.1
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.2	<4.3	<4 3	<4.3	<4.3	<4.2	<4.1
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.2	<4.3	<4 3	<4.3	<4.3	<4.2	<4.1
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<4.2	17	26	15	9.8	<4.2	9
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	<4.2	16	6.3	20	28	6.1	5.4
Perfluorohexanoic acid (PFHxA)	NA	<4.3	<4.2	16	30	15	12	7.3	16
Perfluorononanoic acid (PFNA)	NA	<4.3	<4.2	<4.3	<4 3	<4.3	<4.3	<4.2	<4.1
Perfluorooctane sulfonamide (FOSA)	NA	<4.3	<4.2	<4.3	<4.3	<4.3	<4.3	<4.2	<4.1
Perfluorooctane sulfonic acid (PFOS)	70	<4.3	<4.2	<4.3	<4.3	<4.3	5 8	<4.2	<4.1
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.7	27	19	36	35	4.6	8.5
Perfluoropentanoic acid (PFPeA)	NA	<4.3	<4.2	7	15	6	<4.3	<4.2	6.5
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.3	<4.2	<4.3	<4.3	<4.3	<4.3	<4.2	<4.1
Perfluorotridecanoic acid (PFTrDA)	NA	<4.3	<4.2	<4.3	<4.3	<4.3	<4.3	<4.2	<4.1
Perfluoroundecanoic acid (PFUnDA)	NA	<4.3	<4.2	<4.3	<4.3	<4 3	<4.3	<4.2	<4.1

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010353015	411010353016	411010353017	411010353018	411010353014	411010377006	411010377005	411010376021
GZAParcelNum		803	804	805	806	807	808	809	810
Sample Name		6890 Pixley Ave NE	6872 Pixley Ave NE	6858 Pixley Ave NE	6848 Pixley Ave NE	6818 Pixley Ave	6859 Wildwood Creek Dr NE	6833 Wildwood Creek Dr NE	6815 Wildwood Creek
Contact Name		[redacted]							
Address_UC		6890 PIXLEY AVE NE	6872 PIXLEY AVE NE	6858 PIXLEY AVE NE	6848 PIXLEY AVE NE	6818 PIXLEY AVE NE	6859 WILDWOOD CREEK DR NE	6833 WILDWOOD CREEK DR NE	6815 WILDWOOD CREEK DR NE
Laboratory ID		K1711660-005	K1711964-010	K1711660-002	K1711660-004	K1711964-008	K1711716-024	K1711716-025	K1711661-012
Sample Date		10/25/2017	11/01/2017	10/25/2017	10/25/2017	11/01/2017	10/26/2017	10/26/2017	10/25/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.2	<4.1	<4 2	<4.2	<4.1	<4.1	<4.1
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.2	<4.1	<4 2	<4.2	<4.1	<4.1	<4.1
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.2	<4.1	<4 2	<4.2	<4.1	<4.1	<4.1
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.1	<4 2	<4.2	<4.1	<4.1	<4.1
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.2	<4.1	<4 2	<4.2	<4.1	<4.1	<4.1
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.1	<4 2	<4.2	<4.1	<4.1	<4.1
Perfluorobutane sulfonic acid (PFBS)	NA	8 2	9.3	88	4.7	<4.2	10	6.3	11
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.5	32	<8 3	<8.5	<8.1	<8.1	<8.1
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.2	<4.1	<4 2	<4.2	<4.1	<4.1	<4.1
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.2	<4.1	<4 2	<4.2	<4.1	<4.1	<4.1
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.2	<4.1	<4 2	<4.2	<4.1	<4.1	<4.1
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.2	<4.1	<4 2	<4.2	<4.1	<4.1	<4.1
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	5.3	48	<4.2	<4.2	<4.1	<4.1	8.5
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	6.6	49	<4.2	<4.2	4.7	<4.1	16
Perfluorohexanoic acid (PFHxA)	NA	<4.2	6.7	69	<4.2	<4.2	5 9	<4.1	9.2
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.2	<4.1	<4.2	<4.2	<4.1	<4.1	<4.1
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.2	<4.1	<4.2	<4 2	<4.1	<4.1	<4.1
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.2	<4.1	<4.2	<4 2	<4.1	<4.1	<4.1
Perfluorooctanoic acid (PFOA)	70	2.5	7.7	52	<1.7	<1.7	3 8	2.2	15
Perfluoropentanoic acid (PFPeA)	NA	<4.2	<4.2	28	<4.2	<4 2	<4.1	<4.1	<4.1
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.2	<4.2	<4.1	<4.2	<4 2	<4.1	<4.1	<4.1
Perfluorotridecanoic acid (PFTrDA)	NA	<4.2	<4.2	<4.1	<4.2	<4 2	<4.1	<4.1	<4.1
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.2	<4.1	<4.2	<4 2	<4.1	<4.1	<4.1

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010352014	411010352006	411010352007	411010352012	411010352009	411010352013	411010352010	411015102003
GZAParcelNum		811	813	814	815	816	817	818	819
Sample Name		6881 Pixley Ave NE	6858 Belmont Ave NE	6830 Belmont Ave NE	6824 Belmont Ave NE	6821 Pixley Ave NE	6818 Belmont Ave NE	6817 Pixley Ave NE	6790 Belmont Ave NE
Contact Name		[redacted]							
Address_UC		6881 PIXLEY AVE NE	6858 BELMONT AVE NE	6830 BELMONT AVE NE	6824 BELMONT AVE NE	6821 PIXLEY AVE NE	6818 BELMONT AVE NE	6817 PIXLEY AVE NE	6790 BELMONT AVE NE
Laboratory ID		K1711719-007	K1711613-006	K1711613-009	K1711613-010	K1711788-016	K1711723-012	K1711660-003	K1712064-003
Sample Date		10/26/2017	10/24/2017	10/24/2017	10/24/2017	10/27/2017	10/26/2017	10/25/2017	11/03/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<5.5	<4.4	<4.1	<4 2	<4.2	<4.3	<4.2	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<5.5	<4.4	<4.1	<4 2	<4.2	<4.3	<4.2	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<5.5	<4.4	<4.1	<4 2	<4.2	<4.3	<4.2	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<5.5	<4.4	<4.1	<4 2	<4.2	<4.3	<4.2	<4.3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<5.5	<4.4	<4.1	<4 2	<4.2	<4.3	<4.2	<4.3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<5.5	<4.4	<4.1	<4 2	<4.2	<4.3	<4.2	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	150	12	300	14	150	<4.3	150	<4.3
Perfluorobutanoic acid (PFBA)	NA	37	<8.8	110	<8 3	63	<8.6	65	<8.7
Perfluorodecane sulfonic acid (PFDS)	NA	<5.5	<4.4	<4.1	<4 2	<4.2	<4.3	<4.2	<4.3
Perfluorodecanoic acid (PFDA)	NA	<5.5	<4.4	<4.1	<4 2	<4.2	<4.3	<4.2	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<5.5	<4.4	<4.1	<4.2	<4.2	<4.3	<4.2	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	7	<4.4	<4.1	<4.2	<4.2	<4.3	<4.2	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	85	<4.4	160	8.4	91	<4.3	95	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	97	<4.4	73	<4.2	39	<4.3	36	<4.3
Perfluorohexanoic acid (PFHxA)	NA	130	13	220	14	150	<4.3	120	<4.3
Perfluorononanoic acid (PFNA)	NA	<5.5	<4.4	<4.1	<4.2	<4.2	<4.3	<4.2	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<5.5	<4.4	<4.1	<4.2	<4.2	<4.3	<4.2	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	11	<4.4	<4.1	<4.2	<4.2	<4.3	<4.2	<4.3
Perfluorooctanoic acid (PFOA)	70	***100***	<1.8	***180***	3.5	***74***	<1.7	***71***	1.8
Perfluoropentanoic acid (PFPeA)	NA	46	6.6	120	6.4	70	<4.3	65	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<5.5	<4.4	<4.1	<4.2	<4 2	<4.3	<4.2	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<5.5	<4.4	<4.1	<4.2	<4 2	<4.3	<4.2	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<5.5	<4.4	<4.1	<4.2	<4 2	<4.3	<4.2	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411015102004	411015126006	411015120002	411015151019	411015201024	411015201023	411015201017	411015201004
GZAParcelNum		820	821	823	824	825	826	827	829
Sample Name		6751 Pixley Ave NE	6780 Pixley Ave NE	6612 Belmont Ave NE	6594 Belmont Ave NE	6688 Wildwood Creek	6724 Wildwood Creek	6790 Wildwood Creek	6841 Packer Dr NE
Contact Name		[redacted]							
Address_UC		6751 PIXLEY AVE NE	6780 PIXLEY AVE NE	6612 BELMONT AVE NE	6594 BELMONT AVE NE	6688 WILDWOOD CREEK DR NE	6724 WILDWOOD CREEK DR NE	6790 WILDWOOD CREEK DR NE	6841 PACKER DR NE
Laboratory ID		K1711846-009	K1711723-019	K1711660-006	K1711660-008	K1711612-004	K1711612-003	K1711661-015	K1711723-024
Sample Date		10/30/2017	10/26/2017	10/25/2017	10/25/2017	10/24/2017	10/24/2017	10/25/2017	10/26/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.3	<4.1	<4 2	<4.4	<4.3	<4.2	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.3	<4.1	<4 2	<4.4	<4.3	<4.2	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.3	<4.1	<4 2	<4.4	<4.3	<4.2	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.3	<4.1	<4 2	<4.4	<4.3	<4.2	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.3	<4.1	<4 2	<4.4	<4.3	<4.2	<4 3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.3	<4.1	<4 2	<4.4	<4.3	<4.2	<4 3
Perfluorobutane sulfonic acid (PFBS)	NA	<4.3	<4.3	<4.1	<4 2	79	94	90	5
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.6	<8.1	<8 3	19	29	30	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.3	<4.1	<4 2	<4.4	<4.3	<4.2	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.3	<4.1	<4 2	<4.4	<4.3	<4.2	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.3	<4.1	<4 2	<4.4	<4.3	<4.2	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.3	<4.1	<4 2	<4.4	<4.3	<4.2	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<4.3	<4.1	<4 2	51	58	49	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	<4.3	<4.1	<4 2	69	27	14	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<4.3	<4.3	<4.1	<4 2	51	66	60	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.3	<4.3	<4.1	<4 2	<4.4	<4.3	<4.2	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.3	<4.3	<4.1	<4.2	<4.4	<4.3	<4.2	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4.3	<4.3	<4.1	<4.2	5.8	<4.3	<4.2	<4.3
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.7	<1.6	<1.7	***97***	***71***	38	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.3	<4.3	<4.1	<4.2	22	32	30	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.3	<4.3	<4.1	<4.2	<4.4	<4.3	<4.2	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4.3	<4.3	<4.1	<4.2	<4.4	<4.3	<4.2	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4.3	<4.3	<4.1	<4.2	<4.4	<4.3	<4.2	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411015201005	411015201006	411015201019	411015201020	411015201014	411015201008	411010476014	411015201009
GZAParcelNum		830	831	832	833	834	835	836	837
Sample Name		6843 Packer Dr NE	6845 Packer Dr NE	6847 Packer Dr. NE	6849 Packer Dr NE	6769 Packer Dr NE	6839 Packer Dr NE	6803 Packer Dr. NE	6781 Packer Dr NE
Contact Name		[redacted]							
Address_UC		6843 PACKER DR NE	6845 PACKER DR NE	6847 PACKER DR NE	6849 PACKER DR NE	6769 PACKER DR NE	6839 PACKER DR NE	6803 PACKER DR NE	6781 PACKER DR NE
Laboratory ID		K1711723-025	K1711723-023	K1711964-003	K1711723-022	K1711661-018	K1711723-021	K1711964-004	K1711661-019
Sample Date		10/26/2017	10/26/2017	11/01/2017	10/26/2017	10/25/2017	10/26/2017	11/01/2017	10/25/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.7	<4.2	<4.1
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.7	<4.2	<4.1
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.7	<4.2	<4.1
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.7	<4.2	<4.1
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.7	<4.2	<4.1
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.7	<4.2	<4.1
Perfluorobutane sulfonic acid (PFBS)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.7	6	<4.1
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.6	<8.5	<8.6	<8.1	<9.4	<8.5	<8.1
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.7	<4.2	<4.1
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.7	<4.2	<4.1
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.7	<4.2	<4.1
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.7	<4.2	<4.1
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.7	<4.2	<4.1
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.7	<4.2	<4.1
Perfluorohexanoic acid (PFHxA)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.7	<4.2	<4.1
Perfluorononanoic acid (PFNA)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.7	<4.2	<4.1
Perfluorooctane sulfonamide (FOSA)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.7	<4.2	<4.1
Perfluorooctane sulfonic acid (PFOS)	70	<4.3	<4.3	<4.2	<4 3	<4.1	<4.7	<4.2	<4.1
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.7	<1.7	<1.7	<1.6	<1.9	<1.7	<1.6
Perfluoropentanoic acid (PFPeA)	NA	<4.3	<4.3	<4.2	<4.3	<4.1	<4.7	<4.2	<4.1
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.3	<4.3	<4.2	<4.3	<4.1	<4.7	<4.2	<4.1
Perfluorotridecanoic acid (PFTrDA)	NA	<4.3	<4.3	<4.2	<4.3	<4.1	<4.7	<4.2	<4.1
Perfluoroundecanoic acid (PFUnDA)	NA	<4.3	<4.3	<4.2	<4.3	<4.1	<4.7	<4.2	<4.1

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411015201012	411015201013	411015201026	411010479001	411015201010	411015201011	411010200030	411010200031
GZAParcelNum		838	839	840	841	842	843	844	845
Sample Name		6773 Packer Dr NE	6767 Packer Dr. NE	6605 Packer Dr NE	6802 Packer Dr NE	6780 Packer Dr NE	6760 Packer Dr NE	7402 Packer Dr NE	7400 Packer Dr NE
Contact Name		[redacted]							
Address_UC		6773 PACKER DR NE	6767 PACKER DR NE	6605 PACKER DR NE	6802 PACKER DR NE	6780 PACKER DR NE	6760 PACKER DR NE	7402 PACKER DR NE	7400 PACKER DR NE
Laboratory ID		K1711661-017	K1711964-005	K1711723-001	K1711658-008	K1711723-020	K1711788-008	K1711719-012	K1711719-011
Sample Date		10/25/2017	11/01/2017	10/26/2017	10/25/2017	10/26/2017	10/27/2017	10/26/2017	10/26/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.1	<4.3	<4 8
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.1	<4.3	<4.8
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.1	<4.3	<4.8
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.1	<4.3	<4.8
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.1	<4.3	<4.8
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.3	<4 3	<4.3	<4.1	<4.3	<4.8
Perfluorobutane sulfonic acid (PFBS)	NA	9 5	<4.2	6.8	<4.3	<4.3	<4.1	<4.3	<4.8
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.5	<8.6	<8.6	<8.6	<8.1	<8.6	<9.5
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.2	<4.3	<4.3	<4.3	<4.1	<4.3	<4.8
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.2	<4.3	<4.3	<4 3	<4.1	<4.3	<4.8
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.2	<4.3	<4.3	<4 3	<4.1	<4.3	<4.8
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.2	<4.3	<4.3	<4 3	<4.1	<4.3	<4.8
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.2	<4.3	<4.3	<4 3	<4.1	<4.3	<4.8
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.2	<4.3	<4.3	<4 3	<4.1	<4.3	<4.8
Perfluorohexanoic acid (PFHxA)	NA	<4 2	<4.2	<4.3	<4.3	<4 3	<4.1	<4.3	<4.8
Perfluorononanoic acid (PFNA)	NA	<4 2	<4.2	<4.3	<4.3	<4 3	<4.1	<4.3	<4.8
Perfluorooctane sulfonamide (FOSA)	NA	<4 2	<4.2	<4.3	<4.3	<4 3	<4.1	<4.3	<4.8
Perfluorooctane sulfonic acid (PFOS)	70	<4 2	<4.2	<4.3	<4.3	<4 3	<4.1	<4.3	<4.8
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.7	4.4	<1.7	<1.7	<1.6	<1.7	<1.9
Perfluoropentanoic acid (PFPeA)	NA	<4 2	<4.2	<4.3	<4.3	<4 3	<4.1	<4.3	<4.8
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.2	<4.3	<4.3	<4 3	<4.1	<4.3	<4.8
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.2	<4.3	<4.3	<4 3	<4.1	<4.3	<4.8
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.2	<4.3	<4.3	<4 3	<4.1	<4.3	<4.8

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411017276005	411017276006	411017276007	411017277002	411017276004	411017276003	411017276002	411017226002
GZAParcelNum		900	901	902	903	904	906	907	908
Sample Name		1508 Park Forest Ct NE	1506 Park Forest Ct NE	1500 Park Forest Ct NE	6531 Samrick Ave NE	1510 Park Forest Ct NE	1499 Park Forest Ct NE	1471 Park Forest Ct NE	6611Samrick Ave NE
Contact Name		[redacted]							
Address_UC		1508 PARK FOREST CT NE	1506 PARK FOREST CT NE	1500 PARK FOREST CT NE	6531 SAMRICK AVE NE	1510 PARK FOREST CT NE	1499 PARK FOREST CT NE	1471 PARK FOREST CT NE	6611 SAMRICK AVE NE
Laboratory ID		K1711784-003	K1711784-004	K1711784-005	K1711716-016	K1711784-002	K1711784-001	K1711784-006	K1711787-008
Sample Date		10/27/2017	10/27/2017	10/27/2017	10/26/2017	10/27/2017	10/27/2017	10/27/2017	10/27/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.3	<4.2	<4.4	<4.2	<4.8	<4.3	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.3	<4.2	<4.4	<4.2	<4.8	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.3	<4.2	<4.4	<4.2	<4.8	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.2	<4.4	<4.2	<4.8	<4.3	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.3	<4.2	<4.4	<4.2	<4.8	<4.3	<4 3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.3	<4.2	<4.4	<4.2	<4.8	<4.3	<4 3
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	<4.3	<4.2	<4.4	<4.2	<4.8	<4.3	<4 3
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.6	<8.3	<8 8	<8.3	<9.7	<8.6	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.3	<4.2	<4.4	<4.2	<4.8	<4.3	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.3	<4.2	<4.4	<4.2	<4.8	<4.3	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.3	<4.2	<4.4	<4.2	<4.8	<4.3	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.3	<4.2	<4.4	<4.2	<4.8	<4.3	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.3	<4.2	<4.4	<4.2	<4.8	<4.3	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.3	<4.2	<4.4	<4.2	<4.8	<4.3	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.3	<4.2	<4.4	<4.2	<4.8	<4.3	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.3	<4.2	<4.4	<4.2	<4.8	<4.3	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.3	<4.2	<4.4	<4 2	<4.8	<4.3	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4.2	<4.3	<4.2	<4.4	<4 2	<4.8	<4.3	<4.3
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.7	<1.7	<1.8	<1.7	<1.9	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.2	<4.3	<4.2	<4.4	<4 2	<4.8	<4.3	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.2	<4.3	<4.2	<4.4	<4 2	<4.8	<4.3	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.3	<4.2	<4.4	<4 2	<4.8	<4.3	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.3	<4.2	<4.4	<4 2	<4.8	<4.3	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411017226004	411017226003	411016101002	411016101012	411009376001	411009376002	411009376003	411009376004
GZAParcelNum		912	913	914	915	916	917	918	919
Sample Name		6759 Samrick Ave NE	6761 Samrick	1646 Post Dr NE	1690 Post Dr NE	6976 Chandler Drive NE	6986 Chandler Drive NE	6990 Chandler Dr NE	6996 Chandler Dr NE
Contact Name		[redacted]							
Address_UC		6759 SAMRICK AVE NE	6761 SAMRICK AVE NE	1646 POST DR NE	1690 POST DR NE	6976 CHANDLER DR NE	6986 CHANDLER DR NE	6990 CHANDLER DR NE	6996 CHANDLER DR NE
Laboratory ID		K1711787-007	K1711844-011	K1711788-010	K1711784-007	K1711614-005	K1711614-006	K1711716-017	K1711716-006
Sample Date		10/27/2017	10/31/2017	10/27/2017	10/27/2017	10/24/2017	10/24/2017	10/26/2017	10/26/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.3	<4.3	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.3	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.3	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.3	<4.3	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.3	<4.3	<4 3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.3	<4.3	<4 3
Perfluorobutane sulfonic acid (PFBS)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.3	<4.3	<4 3
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.6	<8.3	<8.6	<8.1	<8.6	<8.6	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.3	<4.3	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.3	<4.3	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.3	<4.3	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.3	<4.2	<4 3	<4.1	<4.3	<4.3	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<4.3	<4.2	<4.3	<4.1	<4.3	<4.3	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	<4.3	<4.2	<4.3	<4.1	<4.3	<4.3	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<4.3	<4.3	<4.2	<4.3	<4.1	<4.3	<4.3	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.3	<4.3	<4.2	<4.3	<4.1	<4.3	<4.3	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.3	<4.3	<4.2	<4.3	<4.1	<4.3	<4.3	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4.3	<4.3	<4.2	<4.3	<4.1	<4.3	<4.3	<4.3
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.7	<1.7	<1.7	<1.6	<1.7	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.3	<4.3	<4.2	<4.3	<4.1	<4.3	<4.3	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.3	<4.3	<4.2	<4.3	<4.1	<4.3	<4.3	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4 3	<4.3	<4.2	<4.3	<4.1	<4.3	<4.3	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4 3	<4.3	<4.2	<4.3	<4.1	<4.3	<4.3	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411009376005	411009376006	411009376013	411009376009	411009376010	411009376011	411009376012	411016126021
GZAParcelNum		920	921	922	923	924	925	926	927
Sample Name		6916 Chandler Dr NE	6835 Blue Ridge	6880 Chandler Dr NE	6840 Chandler Dr NE	6812 Chandler Dr NE	6801 Blue Ridge Dr NE	6803 Blue Ridge Dr NE	1815 Post
Contact Name		[redacted]							
Address_UC		6916 CHANDLER DR NE	6835 BLUE RIDGE DR NE	6880 CHANDLER DR NE	6840 CHANDLER DR NE	6812 CHANDLER DR NE	6801 BLUE RIDGE DR NE	6803 BLUE RIDGE DR NE	1815 POST DR NE
Laboratory ID		K1711716-004	K1711844-003	K1711716-003	K1711716-001	K1711716-002	K1711716-009	K1711716-010	K1711844-008
Sample Date		10/26/2017	10/31/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017	10/31/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.4	<4.2	<4.3	<4 3	<4.4	<4.3	<4.1	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.4	<4.2	<4.3	<4 3	<4.4	<4.3	<4.1	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.4	<4.2	<4.3	<4 3	<4.4	<4.3	<4.1	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.4	<4.2	<4.3	<4 3	<4.4	<4.3	<4.1	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.4	<4.2	<4.3	<4 3	<4.4	<4.3	<4.1	<4.3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.4	<4.2	<4.3	<4 3	<4.4	<4.3	<4.1	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	6 3	<4.2	<4.3	<4 3	<4.4	<4.3	<4.1	<4.3
Perfluorobutanoic acid (PFBA)	NA	<8.8	<8.3	<8.6	<8.6	<8.8	<8.6	<8.1	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.4	<4.2	<4.3	<4.3	<4.4	<4.3	<4.1	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.4	<4.2	<4.3	<4.3	<4.4	<4.3	<4.1	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.4	<4.2	<4.3	<4.3	<4.4	<4.3	<4.1	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.4	<4.2	<4.3	<4.3	<4.4	<4.3	<4.1	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.4	<4.2	<4.3	<4.3	<4.4	<4.3	<4.1	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.4	<4.2	<4.3	<4.3	<4.4	<4.3	<4.1	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<4.4	<4.2	<4.3	<4.3	<4.4	<4.3	<4.1	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.4	<4.2	<4.3	<4.3	<4.4	<4.3	<4.1	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.4	<4.2	<4.3	<4.3	<4.4	<4.3	<4.1	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4.4	<4.2	<4.3	<4.3	<4.4	<4.3	<4.1	<4.3
Perfluorooctanoic acid (PFOA)	70	<1 8	<1.7	<1.7	<1.7	<1 8	2.4	<1.6	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.4	<4.2	<4.3	<4.3	<4.4	<4.3	<4.1	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.4	<4.2	<4.3	<4.3	<4.4	<4.3	<4.1	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4.4	<4.2	<4.3	<4.3	<4.4	<4.3	<4.1	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4.4	<4.2	<4.3	<4.3	<4.4	<4.3	<4.1	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411016126002	411016126010	411016126013	411016126007	411016126025	411016126022	411016126023	411016126024
GZAParcelNum		928	929	930	931	932	933	934	935
Sample Name		1825 Post Dr NE	1845 Post Dr NE	1861 Post Dr NE	1881 Post	1901 Post Dr NE	6777 Blue Ridge Dr NE	6779 Blue Ridge Dr NE	6739 Blue Ridge
Contact Name		[redacted]							
Address_UC		1825 POST DR NE	1845 POST DR NE	1861 POST DR NE	1881 POST DR NE	1901 POST DR NE	6777 BLUE RIDGE DR NE	6779 BLUE RIDGE DR NE	6739 BLUE RIDGE DR NE
Laboratory ID		K1711788-014	K1711788-013	K1711788-017	K1712267-001	K1711788-001	K1711716-008	K1711788-004	K1711844-001
Sample Date		10/27/2017	10/27/2017	10/27/2017	11/09/2017	10/27/2017	10/26/2017	10/27/2017	10/31/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.1	<4.4	<4.2	<4.1	<4.2	<4.1	<4.3	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.1	<4.4	<4.2	<4.1	<4.2	<4.1	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.1	<4.4	<4.2	<4.1	<4.2	<4.1	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.1	<4.4	<4.2	<4.1	<4.2	<4.1	<4.3	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.1	<4.4	<4.2	<4.1	<4.2	<4.1	<4.3	<4.3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.1	<4.4	<4.2	<4.1	<4.2	<4.1	<4.3	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	<4.1	<4.4	<4.2	<4.1	<4.2	<4.1	<4.3	<4.3
Perfluorobutanoic acid (PFBA)	NA	<8.1	<8.8	<8.3	<8.1	<8.3	<8.1	<8.6	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.1	<4.4	<4.2	<4.1	<4.2	<4.1	<4.3	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.1	<4.4	<4.2	<4.1	<4.2	<4.1	<4.3	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.1	<4.4	<4.2	<4.1	<4.2	<4.1	<4.3	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.1	<4.4	<4.2	<4.1	<4.2	<4.1	<4.3	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.1	<4.4	<4.2	<4.1	<4.2	<4.1	<4.3	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.1	<4.4	<4.2	<4.1	<4 2	<4.1	<4.3	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<4.1	5 5	<4.2	<4.1	<4 2	<4.1	<4.3	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.1	<4.4	<4.2	<4.1	<4 2	<4.1	<4.3	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.1	<4.4	<4.2	<4.1	<4 2	<4.1	<4.3	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4.1	<4.4	<4.2	<4.1	<4 2	<4.1	<4.3	<4.3
Perfluorooctanoic acid (PFOA)	70	<1.6	<1.8	<1.7	<1.6	<1.7	<1.6	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.1	<4.4	<4.2	<4.1	<4 2	<4.1	<4.3	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.1	<4.4	<4.2	<4.1	<4 2	<4.1	<4.3	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4.1	<4.4	<4.2	<4.1	<4 2	<4.1	<4.3	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4.1	<4.4	<4.2	<4.1	<4 2	<4.1	<4.3	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411016126026	411016126017	411016126018	411009451001	411009451002	411009451003	411009451017	411009451018
GZAParcelNum		936	937	938	939	940	941	942	943
Sample Name		1939 Post Drive NE	6701 Blue Ridge Dr NE	1977 Post Drive NE	6855 Blue Ridge Dr NE	6865 Blue Ridge Dr NE	6875 Blue Ridge Dr NE	6879 Blue Ridge Dr NE	6885 Blue Ridge Dr
Contact Name		[redacted]							
Address_UC		1939 POST DR NE	6701 BLUE RIDGE DR NE	1977 POST DR NE	6855 BLUE RIDGE DR NE	6865 BLUE RIDGE DR NE	6875 BLUE RIDGE DR NE	6879 BLUE RIDGE DR NE	6885 BLUE RIDGE DR NE
Laboratory ID		K1711614-007	K1711716-007	K1711614-008	K1711716-012	K1711716-013	K1711658-002	K1711716-014	K1710498-013copy
Sample Date		10/24/2017	10/26/2017	10/24/2017	10/26/2017	10/26/2017	10/25/2017	10/26/2017	09/28/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.1	<4.2	<4.1	<4.3	<4.3	<4.4	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.1	<4.2	<4.1	<4.3	<4.3	<4.4	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.1	<4.2	<4.1	<4.3	<4.3	<4.4	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.1	<4.2	<4.1	<4.3	<4.3	<4.4	<4.3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.1	<4.2	<4.1	<4.3	<4.3	<4.4	<4.3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.1	<4.2	<4.1	<4.3	<4.3	<4.4	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	<4.1	<4.2	<4.1	<4.3	<4.3	<4.4	<4.3
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.1	<8.3	<8.1	<8.6	<8.6	<8.8	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.1	<4.2	<4.1	<4.3	<4.3	<4.4	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.1	<4.2	<4.1	<4.3	<4.3	<4.4	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.1	<4.2	<4.1	<4.3	<4.3	<4.4	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.1	<4.2	<4.1	<4.3	<4.3	<4.4	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.1	<4.2	<4.1	<4 3	<4.3	<4.4	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	4.7	<4.2	<4.1	<4 3	<4.3	<4.4	<4.3
Perfluorohexanoic acid (PFHxA)	NA	4.4	<4.1	<4.2	<4.1	<4 3	<4.3	<4.4	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.2	<4.1	<4.2	<4.1	<4 3	<4.3	<4.4	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.2	<4.1	<4.2	<4.1	<4 3	<4.3	<4.4	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4 2	<4.1	<4.2	<4.1	<4 3	<4.3	<4.4	<4.3
Perfluorooctanoic acid (PFOA)	70	2.6	1 9	<1.7	<1.6	<1.7	<1.7	<1.8	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4 2	<4.1	<4.2	<4.1	<4 3	<4.3	<4.4	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.1	<4.2	<4.1	<4 3	<4.3	<4.4	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.1	<4.2	<4.1	<4 3	<4.3	<4.4	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.1	<4.2	<4.1	<4 3	<4.3	<4.4	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411009451005	411009451006	411009451011	411009451010	411009451007	411009451008	411009451009	411016201018
GZAParcelNum		944	945	946	947	948	949	950	951
Sample Name		6887 Blue Ridge Dr NE	6895 Blue Ridge Dr NE	6900 Blue Ridge Dr NE	6880 Blue Ridge Dr NE	6850 Blue Ridge Dr NE	6830 Blue Ridge Dr NE	6810 Blue Ridge Dr NE	6799 Red Tail Ridge NE
Contact Name		[redacted]							
Address_UC		6887 BLUE RIDGE DR NE	6895 BLUE RIDGE DR NE	6900 BLUE RIDGE DR NE	6880 BLUE RIDGE DR NE	6850 BLUE RIDGE DR NE	6830 BLUE RIDGE DR NE	6810 BLUE RIDGE DR NE	6799 REDTAIL RIDGE DR NE
Laboratory ID		K1711658-003	K1711716-019	K1711716-020	K1711716-015	K1711788-011	K1711716-018	K1711716-011	K1711614-015
Sample Date		10/25/2017	10/26/2017	10/26/2017	10/26/2017	10/27/2017	10/26/2017	10/26/2017	10/24/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.1	<4.1	<4.1	<4.2	<4.3	<4.3	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.1	<4.1	<4.1	<4.2	<4.3	<4.3	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.1	<4.1	<4.1	<4.2	<4.3	<4.3	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.1	<4.1	<4.1	<4.2	<4.3	<4.3	<4.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.1	<4.1	<4.1	<4.2	<4.3	<4.3	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.1	<4.1	<4.1	<4.2	<4.3	<4.3	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.3	<4.1	<4.1	<4.1	<4.2	<4.3	<4.3	<4.2
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.1	<8.1	<8.1	<8.3	<8.6	<8.6	<8.3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.1	<4.1	<4.1	<4.2	<4.3	<4.3	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.1	<4.1	<4.1	<4.2	<4.3	<4.3	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.1	<4.1	<4.1	<4.2	<4.3	<4.3	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.1	<4.1	<4.1	<4.2	<4.3	<4.3	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<4.1	<4.1	<4.1	<4 2	<4.3	<4.3	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	<4.1	<4.1	<4.1	<4 2	<4.3	<4.3	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.3	<4.1	<4.1	<4.1	<4 2	<4.3	<4.3	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.3	<4.1	<4.1	<4.1	<4 2	<4.3	<4.3	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.3	<4.1	<4.1	<4.1	<4 2	<4.3	<4.3	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4 3	<4.1	<4.1	<4.1	<4 2	<4.3	<4.3	<4.2
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.6	<1.6	2.1	<1.7	<1.7	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4 3	<4.1	<4.1	<4.1	<4 2	<4.3	<4.3	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 3	<4.1	<4.1	<4.1	<4 2	<4.3	<4.3	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4 3	<4.1	<4.1	<4.1	<4 2	<4.3	<4.3	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 3	<4.1	<4.1	<4.1	<4 2	<4.3	<4.3	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411016201019	411016201020	411016201021	411016201022	411016201023	411016201025	411016201017	411016201007
GZAParcelNum		952	953	954	955	956	957	958	959
Sample Name		6788 Red Tail Ridge NE	6766 Redtail Ridge Dr NE	6744 Red Tail Ridge NE	6722 Redtail Ridge Dr NE	6700 Redtail Ridge Dr NE	6648 Redtail Ridge Dr NE	2153 Post Drive NE	2141 Post Drive NE
Contact Name		[redacted]							
Address_UC		6788 REDTAIL RIDGE DR NE	6766 REDTAIL RIDGE DR NE	6744 REDTAIL RIDGE DR NE	6722 REDTAIL RIDGE DR NE	6700 REDTAIL RIDGE DR NE	6648 REDTAIL RIDGE DR NE	2153 POST DR NE	2141 POST DR NE
Laboratory ID		K1711614-014	K1711716-023	K1711614-013	K1711716-022	K1711788-003	K1711788-012	K1711614-012	K1711614-011
Sample Date		10/24/2017	10/26/2017	10/24/2017	10/26/2017	10/27/2017	10/27/2017	10/24/2017	10/24/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.1	<4.2	<4 2	<4.1	<4.2	<4.2	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.1	<4.2	<4 2	<4.1	<4.2	<4.2	<4.2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.1	<4.2	<4 2	<4.1	<4.2	<4.2	<4.2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.1	<4.2	<4 2	<4.1	<4.2	<4.2	<4.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.1	<4.2	<4 2	<4.1	<4.2	<4.2	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.1	<4.2	<4 2	<4.1	<4.2	<4.2	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	<4.1	<4.2	<4.2	<4.1	<4.2	<4.2	9.7
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.1	<8.3	<8.3	<8.1	<8.3	<8.3	<8.3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.1	<4.2	<4.2	<4.1	<4.2	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.1	<4.2	<4.2	<4.1	<4.2	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.1	<4.2	<4.2	<4.1	<4.2	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.1	<4.2	<4.2	<4.1	<4.2	<4.2	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.1	<4.2	<4.2	<4.1	<4.2	<4.2	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.1	<4.2	<4.2	<4.1	<4.2	<4.2	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<4.1	<4.2	<4.2	<4.1	<4.2	<4.2	<4.2
Perfluorononanoic acid (PFNA)	NA	<4 2	<4.1	<4.2	<4.2	<4.1	<4.2	<4.2	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4 2	<4.1	<4.2	<4.2	<4.1	<4.2	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4 2	<4.1	<4.2	<4.2	<4.1	<4.2	<4.2	<4.2
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.6	<1.7	<1.7	<1.6	<1.7	3.3	2.2
Perfluoropentanoic acid (PFPeA)	NA	<4 2	<4.1	<4.2	<4.2	<4.1	<4.2	<4.2	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.1	<4.2	<4.2	<4.1	<4.2	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.1	<4.2	<4.2	<4.1	<4.2	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.1	<4.2	<4.2	<4.1	<4.2	<4.2	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411016201011	411016201015	411016201009	411016201002	411009476001	411010351001	411010351002	411010351003
GZAParcelNum		960	961	962	963	964	965	966	967
Sample Name		2101 Post Dr NE	2069 Post Drive NE	2035 Post Drive NE	2001 Post Dr NE	6813 Belmont Ave NE	2416 Frond St NE	2440 Frond St NE	2466 Frond St NE
Contact Name		[redacted]							
Address_UC		2101 POST DR NE	2069 POST DR NE	2035 POST DR NE	2001 POST DR NE	6813 BELMONT AVE NE	2416 FROND ST NE	2440 FROND ST NE	2466 FROND ST NE
Laboratory ID		K1711788-002	K1711614-010	K1711614-009	K1711716-021	K1711612-001	K1711612-007	K1711612-006	K1711612-005
Sample Date		10/27/2017	10/24/2017	10/24/2017	10/26/2017	10/24/2017	10/24/2017	10/24/2017	10/24/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.2	<4.2	<4.1	<4.3	<4.3	<4.2	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.2	<4.2	<4.1	<4.3	<4.3	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.2	<4.2	<4.1	<4.3	<4.3	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.2	<4.1	<4.3	<4.3	<4.2	<4 2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.2	<4.2	<4.1	<4.3	<4.3	<4.2	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.2	<4.2	<4.1	<4.3	<4.3	<4.2	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	5 8	<4.2	<4.2	<4.1	<4.3	<4.3	<4.2	37
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.3	<8.3	<8.1	<8.6	<8.6	<8.3	12
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.2	<4.2	<4.1	<4.3	<4.3	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.2	<4.2	<4.1	<4.3	<4.3	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.2	<4.2	<4.1	<4 3	<4.3	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.2	<4.2	<4.1	<4 3	<4.3	<4.2	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.2	<4.2	<4.1	<4 3	<4.3	<4.2	15
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.2	<4.2	<4.1	<4 3	<4.3	<4.2	11
Perfluorohexanoic acid (PFHxA)	NA	<4 2	<4.2	<4.2	<4.1	<4 3	<4.3	<4.2	30
Perfluorononanoic acid (PFNA)	NA	<4 2	<4.2	<4.2	<4.1	<4 3	<4.3	<4.2	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4 2	<4.2	<4.2	<4.1	<4 3	<4.3	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4 2	<4.2	<4.2	<4.1	<4 3	<4.3	<4.2	<4.2
Perfluorooctanoic acid (PFOA)	70	3.5	<1.7	<1.7	<1.6	<1.7	<1.7	<1.7	15
Perfluoropentanoic acid (PFPeA)	NA	<4 2	<4.2	<4.2	<4.1	<4 3	<4.3	<4.2	13
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.2	<4.2	<4.1	<4 3	<4.3	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.2	<4.2	<4.1	<4 3	<4.3	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.2	<4.2	<4.1	<4 3	<4.3	<4.2	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411010351004	411010351005	411010351006	411010351007	411010351008	411010351009	411010351010	411015101001
GZAParcelNum		968	969	970	971	972	973	974	975
Sample Name		6975 Herrington Ave NE	6959 Belmont Ave NE	6935 Belmont Ave NE	6911 Belmont Ave NE	6885 Belmont Ave NE	6859 Belmont Ave NE	6835 Belmont Ave NE	6795 Belmont Ave NE
Contact Name		[redacted]							
Address_UC		6975 HERRINGTON AVE NE	6959 BELMONT AVE NE	6935 BELMONT AVE NE	6911 BELMONT AVE NE	6885 BELMONT AVE NE	6859 BELMONT AVE NE	6835 BELMONT AVE NE	6795 BELMONT AVE NE
Laboratory ID		K1711723-008	K1711612-011	K1711612-010	K1711612-009	K1711612-012	K1711723-010	K1711723-011	K1711612-013
Sample Date		10/26/2017	10/24/2017	10/24/2017	10/24/2017	10/24/2017	10/26/2017	10/26/2017	10/24/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<4.4	<4.1	<4 3	<4.3	<4.3	<4.2	<4.4
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<4.4	<4.1	<4 3	<4.3	<4.3	<4.2	<4.4
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<4.4	<4.1	<4 3	<4.3	<4.3	<4.2	<4.4
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.4	<4.1	<4 3	<4.3	<4.3	<4.2	<4.4
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<4.4	<4.1	<4 3	<4.3	<4.3	<4.2	<4.4
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<4.4	<4.1	<4 3	<4.3	<4.3	<4.2	<4.4
Perfluorobutane sulfonic acid (PFBS)	NA	4.6	<4.4	15	7	4.5	<4.3	<4.2	<4.4
Perfluorobutanoic acid (PFBA)	NA	<8.3	<8.8	<8.1	<8.6	<8.6	<8.6	<8.3	<8.8
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<4.4	<4.1	<4.3	<4.3	<4.3	<4.2	<4.4
Perfluorodecanoic acid (PFDA)	NA	<4.2	<4.4	<4.1	<4.3	<4 3	<4.3	<4.2	<4.4
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<4.4	<4.1	<4.3	<4 3	<4.3	<4.2	<4.4
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<4.4	<4.1	<4.3	<4 3	<4.3	<4.2	<4.4
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<4.4	7	<4.3	<4 3	<4.3	<4.2	<4.4
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<4.4	5.5	<4.3	<4 3	<4.3	<4.2	<4.4
Perfluorohexanoic acid (PFHxA)	NA	6.9	<4.4	10	5.5	<4 3	<4.3	<4.2	<4.4
Perfluorononanoic acid (PFNA)	NA	<4 2	<4.4	<4.1	<4.3	<4 3	<4.3	<4.2	<4.4
Perfluorooctane sulfonamide (FOSA)	NA	<4 2	<4.4	<4.1	<4.3	<4 3	<4.3	<4.2	<4.4
Perfluorooctane sulfonic acid (PFOS)	70	<4 2	<4.4	<4.1	<4.3	<4 3	<4.3	<4.2	<4.4
Perfluorooctanoic acid (PFOA)	70	4.2	<1.8	7.7	<1.7	<1.7	<1.7	<1.7	<1.8
Perfluoropentanoic acid (PFPeA)	NA	5.9	<4.4	6.1	<4.3	<4 3	<4.3	<4.2	<4.4
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<4.4	<4.1	<4.3	<4 3	<4.3	<4.2	<4.4
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<4.4	<4.1	<4.3	<4 3	<4.3	<4.2	<4.4
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<4.4	<4.1	<4.3	<4 3	<4.3	<4.2	<4.4

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411015101002	411016226002	411016251005	411016251007	411016176024	411016176013	411016176017	411016102009
GZAParcelNum		976	977	978	979	980	982	983	984
Sample Name		6725 Belmont Ave NE	6801 Belmont Ave NE	2086 Post Dr NE	2062 Post Dr NE	1990 Post Dr NE	1978 Post Dr NE	6630 Botany Bluff Dr NE	6780 Samrick Ave NE
Contact Name		[redacted]							
Address_UC		6725 BELMONT AVE NE	6801 BELMONT AVE NE	2086 POST DR NE	2062 POST DR NE	1990 POST DR NE	1978 POST DR NE	6630 BOTANY BLUFF DR NE	6780 SAMRICK AVE NE
Laboratory ID		K1711660-007	K1711612-002	K1711846-008	K1711846-007	K1711846-006	K1711846-005	K1711846-003	K1711787-006
Sample Date		10/25/2017	10/24/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/27/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.1	<4.1	<4.3	<4 3	<4.3	<4.2	<4.3	<4 3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.1	<4.1	<4.3	<4 3	<4.3	<4.2	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.1	<4.1	<4.3	<4 3	<4.3	<4.2	<4.3	<4 3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.1	<4.1	<4.3	<4 3	<4.3	<4.2	<4.3	<4 3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.1	<4.1	<4.3	<4 3	<4.3	<4.2	<4.3	<4.3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.1	<4.1	<4.3	<4 3	<4.3	<4.2	<4.3	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	<4.1	<4.1	<4.3	<4 3	<4.3	<4.2	<4.3	<4.3
Perfluorobutanoic acid (PFBA)	NA	<8.1	<8.1	<8.6	<8.6	<8.6	<8.3	<8.6	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.1	<4.1	<4.3	<4 3	<4.3	<4.2	<4.3	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.1	<4.1	<4.3	<4.3	<4.3	<4.2	<4.3	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.1	<4.1	<4.3	<4.3	<4.3	<4.2	<4.3	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.1	<4.1	<4.3	<4.3	<4.3	<4.2	<4.3	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	5.3	<4.1	<4.3	<4.3	<4 3	<4.2	<4.3	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.1	<4.1	<4.3	<4.3	<4 3	<4.2	<4.3	<4.3
Perfluorohexanoic acid (PFHxA)	NA	10	<4.1	<4.3	<4.3	<4 3	<4.2	<4.3	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.1	<4.1	<4.3	<4.3	<4 3	<4.2	<4.3	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.1	<4.1	<4.3	<4.3	<4 3	<4.2	<4.3	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	5	<4.1	<4.3	<4.3	<4 3	<4.2	<4.3	<4.3
Perfluorooctanoic acid (PFOA)	70	11	<1.6	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	9.4	<4.1	<4.3	<4.3	<4 3	<4.2	<4.3	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.1	<4.1	<4.3	<4.3	<4 3	<4.2	<4.3	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4.1	<4.1	<4.3	<4.3	<4 3	<4.2	<4.3	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4.1	<4.1	<4.3	<4.3	<4 3	<4.2	<4.3	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411016176019	411016101009	411016102007	411016151006	411016103008	411016103007	411016103006	411016103005
GZAParcelNum		985	987	988	991	992	993	994	995
Sample Name		6600 Botany Bluff Dr NE	1772 Post Dr NE	1790 Post Dr NE	6580 Samrick	1628 Cornerstone Ct NE	1650 Cornerstone Ct NE	1662 Cornerstone Ct NE	1678 Cornerstone Ct NE
Contact Name		[redacted]							
Address_UC		6600 BOTANY BLUFF DR NE	1772 POST DR NE	1790 POST DR NE	6580 SAMRICK AVE NE	1628 CORNERSTONE CT NE	1650 CORNERSTONE CT NE	1662 CORNERSTONE CT NE	1678 CORNERSTONE CT NE
Laboratory ID		K1712980-001	K1712064-001	K1711846-004	K1712267-006	K1711784-011	K1711784-012	K1711846-010	K1711784-013
Sample Date		12/01/2017	11/03/2017	10/30/2017	11/09/2017	10/27/2017	10/27/2017	10/30/2017	10/27/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<6.2	<4.4	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.4	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.4	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.4	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.4	<4.2	<4 2	<4.3	<4.3	<4.3	<4 2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.4	<4.2	<4 2	<4.3	<4.3	<4.3	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.3	<4.4	<4.2	<4 2	<4.3	<4.3	<4.3	<4.2
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.8	<8.3	<8 5	<8.6	<8.6	<8.6	<8.3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.4	<4.2	<4 2	<4.3	<4.3	<4.3	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.4	<4.2	<4 2	<4.3	<4.3	<4.3	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.4	<4.2	<4.2	<4.3	<4.3	<4.3	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.4	<4.2	<4.2	<4.3	<4.3	<4.3	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<4.4	<4.2	<4.2	<4.3	<4.3	<4.3	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	<4.4	<4.2	<4.2	<4.3	<4.3	<4.3	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.3	<4.4	<4.2	<4.2	<4 3	<4.3	<4.3	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.3	<4.4	<4.2	<4.2	<4 3	<4.3	<4.3	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.3	<4.4	<4.2	<4.2	<4 3	<4.3	<4.3	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.3	<4.4	<4.2	<4.2	<4 3	<4.3	<4.3	<4.2
Perfluorooctanoic acid (PFOA)	70	9.2	<1.8	<1.7	<1.7	<1.7	3.4	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4 3	<4.4	<4.2	<4.2	<4 3	<4.3	<4.3	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 3	<4.4	<4.2	<4.2	<4 3	<4.3	<4.3	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4 3	<4.4	<4.2	<4.2	<4 3	<4.3	<4.3	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 3	<4.4	<4.2	<4.2	<4 3	<4.3	<4.3	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411016102001	411016103003	411016103002	411016103001	411016276011	411016276009	411016276022	411016276019
GZAParcelNum		996	997	998	999	1000	1001	1002	1004
Sample Name		6726 Samrick Ave	1651 Cornerstone Ct NE	1633 Cornerstone Ct NE	1625 Cornerstone Ct NE	6561 Belmont Ave NE	6517 Belmont	6531 Belmont Ave NE	2309 Post
Contact Name		[redacted]							
Address_UC		6726 SAMRICK AVE NE	1651 CORNERSTONE CT NE	1633 CORNERSTONE CT NE	1625 CORNERSTONE CT NE	6561 BELMONT AVE NE	6517 BELMONT AVE NE	6531 BELMONT AVE NE	2309 POST DR NE
Laboratory ID		K1711849-018	K1711784-014	K1711784-015	K1711784-016	K1711856-005	K1712267-003	K1711856-006	K1711844-006
Sample Date		10/30/2017	10/27/2017	10/27/2017	10/27/2017	10/31/2017	11/09/2017	10/31/2017	10/31/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.6	<4.3	<4.1	<4 2	<4.2	<4.2	<4.3	<4.3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.6	<4.3	<4.1	<4 2	<4.2	<4.2	<4.3	<4.3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.6	<4.3	<4.1	<4 2	<4.2	<4.2	<4.3	<4.3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.6	<4.3	<4.1	<4 2	<4.2	<4.2	<4.3	<4.3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.6	<4.3	<4.1	<4 2	<4.2	<4.2	<4.3	<4.3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.6	<4.3	<4.1	<4.2	<4.2	<4.2	<4.3	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	<4.6	<4.3	<4.1	<4.2	<4.2	<4.2	<4.3	<4.3
Perfluorobutanoic acid (PFBA)	NA	<9.2	<8.6	<8.1	<8.3	<8.3	<8.3	<8.6	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.6	<4.3	<4.1	<4.2	<4.2	<4.2	<4.3	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.6	<4.3	<4.1	<4.2	<4 2	<4.2	<4.3	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.6	<4.3	<4.1	<4.2	<4 2	<4.2	<4.3	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.6	<4.3	<4.1	<4.2	<4 2	<4.2	<4.3	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.6	<4.3	<4.1	<4.2	<4 2	<4.2	<4.3	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.6	<4.3	<4.1	<4.2	<4 2	<4.2	<4.3	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<4.6	<4.3	<4.1	<4.2	<4 2	<4.2	<4.3	<4.3
Perfluorononanoic acid (PFNA)	NA	<4.6	<4.3	<4.1	<4.2	<4 2	<4.2	<4.3	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4.6	<4.3	<4.1	<4.2	<4 2	<4.2	<4.3	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4.6	<4.3	<4.1	<4.2	<4 2	<4.2	<4.3	<4.3
Perfluorooctanoic acid (PFOA)	70	<1 8	<1.7	<1.6	<1.7	<1.7	1 8	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.6	<4.3	<4.1	<4.2	<4 2	<4.2	<4.3	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.6	<4.3	<4.1	<4.2	<4 2	<4.2	<4.3	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4.6	<4.3	<4.1	<4.2	<4 2	<4.2	<4.3	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4.6	<4.3	<4.1	<4.2	<4 2	<4.2	<4.3	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411016276020	411016279003	411016278004	411016279011	411016476041	411016476052	411016476026	411016376044
GZAParcelNum		1005	1007	1008	1009	1010	1011	1012	1014
Sample Name		2295 Post	2374 Post	2350 Savoy St	6433 Sullivan Ave NE	2345 Rogue River Rd	2367 Rogue River Rd	2377 Rogue River Rd	6057 Maksimowski Dr
Contact Name		[redacted]							
Address_UC		2295 POST DR NE	2374 POST DR NE	2350 SAVOY ST NE	6433 SULLIVAN AVE NE	2345 ROGUE RIVER RD NE	2367 ROGUE RIVER RD NE	2377 ROGUE RIVER RD NE	6057 MAKSIMOWSKI AVE NE
Laboratory ID		K1711844-005	K1711844-007	K1711856-014	K1711856-015	K1711853-001	K1711658-001	K1711853-003	K1711849-017
Sample Date		10/31/2017	10/31/2017	10/31/2017	10/31/2017	10/31/2017	10/25/2017	10/31/2017	10/30/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.2	<4.3	<4 2	<4.2	<4.4	6.8	<4.3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.2	<4.3	<4 2	<4.2	<4.4	<4.8	<4.3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.2	<4.3	<4 2	<4.2	<4.4	<4.8	<4.3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.3	<4.2	<4.2	<4.4	<4.8	<4.3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.2	<4.3	<4.2	<4.2	<4.4	<4.8	<4.3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.3	<4.2	<4.2	<4.4	<4.8	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	<4.3	<4.2	6.7	<4.2	<4.2	6.7	9.1	<4.3
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.3	<8.6	<8.3	<8 5	<8.8	23	<8.7
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.2	<4.3	<4.2	<4 2	<4.4	<4.8	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.2	<4.3	<4.2	<4 2	<4.4	<4.8	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.2	<4.3	<4.2	<4 2	<4.4	<4.8	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.2	<4.3	<4.2	<4 2	<4.4	<4.8	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<4.2	<4.3	<4.2	<4 2	<4.4	34	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4 3	<4.2	<4.3	<4.2	<4 2	<4.4	8.5	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<4 3	<4.2	<4.3	<4.2	<4 2	<4.4	78	<4.3
Perfluorononanoic acid (PFNA)	NA	<4 3	<4.2	<4.3	<4.2	<4 2	<4.4	<4.8	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4 3	<4.2	<4.3	<4.2	<4 2	<4.4	<4.8	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4 3	<4.2	<4.3	<4.2	<4 2	<4.4	15	<4.3
Perfluorooctanoic acid (PFOA)	70	<1.7	2.1	3.1	<1.7	2.5	3.6	38	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4 3	<4.2	<4.3	<4.2	6.2	<4.4	76	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 3	<4.2	<4.3	<4.2	<4 2	<4.4	<4.8	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4 3	<4.2	<4.3	<4.2	<4 2	<4.4	<4.8	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4 3	<4.2	<4.3	<4.2	<4 2	<4.4	<4.8	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411016376043	411016451030	411016451035	411016451052	411016451094	411016451082	411016451006	411016451085
GZAParcelNum		1015	1016	1017	1018	1019	1020	1021	1022
Sample Name		6075 Maksimowski Dr	6088 Maksimowski Dr	6100 Maksimowski Dr	6114 Maksimowski Dr	6118 Maksimowski Dr	6206 Maksimowski Dr	6210 Maksimowski	6240 Maksimowski Dr
Contact Name		[redacted]							
Address_UC		6075 MAKSIMOWSKI AVE NE	6088 MAKSIMOWSKI AVE NE	6100 MAKSIMOWSKI AVE NE	6114 MAKSIMOWSKI AVE NE	6118 MAKSIMOWSKI AVE NE	6206 MAKSIMOWSKI AVE NE	6210 MAKSIMOWSKI AVE NE	6240 MAKSIMOWSKI AVE NE
Laboratory ID		K1711849-001	K1711849-002	K1711849-003	K1711849-004	K1711849-005	K1711849-011	K1712267-004	K1711849-013
Sample Date		10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	11/09/2017	10/30/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.3	<4.3	<5.4	<4.4	<4.6	<4.2	<4.4
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.3	<4.3	<5.4	<4.4	<4.6	<4.2	<4.4
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.3	<4.3	<5.4	<4.4	<4.6	<4.2	<4.4
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.3	<4.3	<5.4	<4.4	<4.6	<4.2	<4.4
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.3	<4.3	<5.4	<4.4	<4.6	<4.2	<4.4
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.3	<4.3	<5.4	<4.4	<4.6	<4.2	<4.4
Perfluorobutane sulfonic acid (PFBS)	NA	<4.3	<4.3	<4.3	<5.4	<4.4	67	<4.2	<4.4
Perfluorobutanoic acid (PFBA)	NA	<8.7	<8.7	<8.7	<11	<8 8	<9.2	<8.3	<8.8
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.3	<4.3	<5.4	<4.4	<4.6	<4.2	<4.4
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.3	<4.3	<5.4	<4.4	<4.6	<4.2	<4.4
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.3	<4.3	<5.4	<4.4	<4.6	<4.2	<4.4
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.3	<4.3	<5.4	<4.4	<4.6	<4.2	<4.4
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<4.3	<4.3	<5.4	<4.4	<4.6	<4.2	<4.4
Perfluorohexane sulfonic acid (PFHxS)	NA	<4 3	<4.3	<4.3	<5.4	<4.4	<4.6	<4.2	<4.4
Perfluorohexanoic acid (PFHxA)	NA	<4 3	<4.3	<4.3	<5.4	<4.4	<4.6	<4.2	<4.4
Perfluorononanoic acid (PFNA)	NA	<4 3	<4.3	<4.3	<5.4	<4.4	<4.6	<4.2	<4.4
Perfluorooctane sulfonamide (FOSA)	NA	<4 3	<4.3	<4.3	<5.4	<4.4	<4.6	<4.2	<4.4
Perfluorooctane sulfonic acid (PFOS)	70	<4 3	<4.3	<4.3	<5.4	<4.4	<4.6	<4.2	<4.4
Perfluorooctanoic acid (PFOA)	70	<1.7	<1.7	<1.7	<2.1	<1 8	<1.8	<1.7	<1.8
Perfluoropentanoic acid (PFPeA)	NA	<4 3	<4.3	<4.3	<5.4	<4.4	<4.6	<4.2	<4.4
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 3	<4.3	<4.3	<5.4	<4.4	<4.6	<4.2	<4.4
Perfluorotridecanoic acid (PFTrDA)	NA	<4 3	<4.3	<4.3	<5.4	<4.4	<4.6	<4.2	<4.4
Perfluoroundecanoic acid (PFUnDA)	NA	<4 3	<4.3	<4.3	<5.4	<4.4	<4.6	<4.2	<4.4

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411016451084	411016176008	411016176015	411016176009	411016326002	411016376035	411016376022	411016376015
GZAParcelNum		1023	1024	1025	1026	1028	1029	1030	1031
Sample Name		6260 Maksimowski Dr	6480 Botany Bluff	6440 Botany Bluff Dr NE	6400 Botany Bluff Dr NE	6215 Maksimowski Dr	6191 Maksimowski Dr	6175 Maksimowski Dr	6145 Maksimowski Dr
Contact Name		[redacted]							
Address_UC		6260 MAKSIMOWSKI AVE NE	6480 BOTANY BLUFF DR NE	6440 BOTANY BLUFF DR NE	6400 BOTANY BLUFF DR NE	6215 MAKSIMOWSKI AVE NE	6191 MAKSIMOWSKI AVE NE	6175 MAKSIMOWSKI AVE NE	6145 MAKSIMOWSKI AVE NE
Laboratory ID		K1711849-014	K1711844-004	K1711846-002	K1711846-001	K1711849-012	K1711849-009	K1711849-008	K1711849-007
Sample Date		10/30/2017	10/31/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017	10/30/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.4	<4.3	<4.4	<4 3	<4.4	<4.3	<4.4	<4.4
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.4	<4.3	<4.4	<4 3	<4.4	<4.3	<4.4	<4.4
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.4	<4.3	<4.4	<4 3	<4.4	<4.3	<4.4	<4.4
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.4	<4.3	<4.4	<4.3	<4.4	<4.3	<4.4	<4.4
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.4	<4.3	<4.4	<4.3	<4.4	<4.3	<4.4	<4.4
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.4	<4.3	<4.4	<4.3	<4.4	<4.3	<4.4	<4.4
Perfluorobutane sulfonic acid (PFBS)	NA	<4.4	<4.3	<4.4	<4.3	<4.4	<4.3	<4.4	<4.4
Perfluorobutanoic acid (PFBA)	NA	<8.8	<8.6	<8.8	<8.6	<8 8	<8.7	<8.8	<8.8
Perfluorodecane sulfonic acid (PFDS)	NA	<4.4	<4.3	<4.4	<4.3	<4.4	<4.3	<4.4	<4.4
Perfluorodecanoic acid (PFDA)	NA	<4.4	<4.3	<4.4	<4.3	<4.4	<4.3	<4.4	<4.4
Perfluorododecanoic acid (PFDoDA)	NA	<4.4	<4.3	<4.4	<4.3	<4.4	<4.3	<4.4	<4.4
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.4	<4.3	<4.4	<4.3	<4.4	<4.3	<4.4	<4.4
Perfluoroheptanoic acid (PFHpA)	NA	<4.4	<4.3	<4.4	<4.3	<4.4	<4.3	<4.4	<4.4
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.4	<4.3	<4.4	<4.3	<4.4	<4.3	<4.4	<4.4
Perfluorohexanoic acid (PFHxA)	NA	<4.4	<4.3	<4.4	<4.3	<4.4	<4.3	<4.4	<4.4
Perfluorononanoic acid (PFNA)	NA	<4.4	<4.3	<4.4	<4.3	<4.4	<4.3	<4.4	<4.4
Perfluorooctane sulfonamide (FOSA)	NA	<4.4	<4.3	<4.4	<4.3	<4.4	<4.3	<4.4	<4.4
Perfluorooctane sulfonic acid (PFOS)	70	<4.4	<4.3	<4.4	<4.3	<4.4	<4.3	<4.4	<4.4
Perfluorooctanoic acid (PFOA)	70	<1 8	<1.7	<1.8	<1.7	<1 8	<1.7	<1.8	<1.8
Perfluoropentanoic acid (PFPeA)	NA	<4.4	<4.3	<4.4	<4.3	<4.4	<4.3	<4.4	<4.4
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.4	<4.3	<4.4	<4.3	<4.4	<4.3	<4.4	<4.4
Perfluorotridecanoic acid (PFTrDA)	NA	<4.4	<4.3	<4.4	<4.3	<4.4	<4.3	<4.4	<4.4
Perfluoroundecanoic acid (PFUnDA)	NA	<4.4	<4.3	<4.4	<4.3	<4.4	<4.3	<4.4	<4.4

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411016376045	411016376005	411016376010	411016376009	411016376034	411016376016	411016301029	411016301028
GZAParcelNum		1032	1033	1034	1035	1036	1037	1038	1040
Sample Name		6129 Maksimowski Dr	6111 Maksimowski Ave	1901 Rogue River Rd	1867 Rogue River Rd NE	6201 Maksimowski Dr	1879 Rogue River Rd NE	6378 Samrick Ave NE	6390 Samrick Avenue NE
Contact Name		[redacted]							
Address_UC		6129 MAKSIMOWSKI AVE NE	6111 MAKSIMOWSKI AVE NE	1901 ROGUE RIVER RD NE	1867 ROGUE RIVER RD NE	6201 MAKSIMOWSKI AVE NE	1879 ROGUE RIVER RD NE	6378 SAMRICK AVE NE	6390 SAMRICK AVE NE
Laboratory ID		K1711849-006	K1711853-013	K1711849-016	K1711787-014	K1711849-010	K1711849-015	K1711787-011	K1713716-004
Sample Date		10/30/2017	10/31/2017	10/30/2017	10/27/2017	10/30/2017	10/30/2017	10/27/2017	12/19/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	<4.2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	<4.2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	<4.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	4.7
Perfluorobutanoic acid (PFBA)	NA	<8.8	<8.7	<8.8	<8.8	<10	<8.7	<8.6	<8.5
Perfluorodecane sulfonic acid (PFDS)	NA	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	9.9
Perfluorohexanoic acid (PFHxA)	NA	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	<4.2
Perfluorooctanoic acid (PFOA)	70	<1 8	<1.7	<1.8	<1.8	<2	<1.7	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4.4	<4.3	<4.4	<4.4	<5	<4.3	<4.3	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411017426003	411017426002	411017426008	411017277010	411016365045	411016365022	411016101013	411015376054
GZAParcelNum		1041	1042	1043	1045	1048	1049	1050	1100
Sample Name		6335 Samrick Ave NE	6355 Samrick Ave NE	6393 Samrick Ave NE	6421 Samrick Ave NE	6152 George Ann Ct NE	1799 Rogue River Rd NE	1730 Post Dr NE	2801 Rogue River Road NE
Contact Name		[redacted]							
Address_UC		6335 SAMRICK AVE NE	6355 SAMRICK AVE NE	6393 SAMRICK AVE NE	6421 SAMRICK AVE NE	6152 GEORGE ANN CT NE	1799 ROGUE RIVER RD NE	1730 POST DR NE	2801 ROGUE RIVER RD NE
Laboratory ID		K1711787-015	K1711787-012	K1711787-010	K1711787-009	K1712064-005	K1711787-013	K1711961-001	K1713716-003
Sample Date		10/27/2017	10/27/2017	10/27/2017	10/27/2017	11/03/2017	10/27/2017	11/01/2017	12/19/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.4	<4.4	<4.3	<4 3	<4.4	<4.3	<4.2	<4 2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.4	<4.4	<4.3	<4 3	<4.4	<4.3	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.4	<4.4	<4.3	<4 3	<4.4	<4.3	<4.2	<4 2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.4	<4.4	<4.3	<4 3	<4.4	<4.3	<4.2	<4.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.4	<4.4	<4.3	<4 3	<4.4	<4.3	<4.2	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.4	<4.4	<4.3	<4 3	<4.4	<4.3	<4.2	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.4	<4.4	<4.3	<4 3	<4.4	<4.3	<4.2	<4.2
Perfluorobutanoic acid (PFBA)	NA	<8.8	<8.8	<8.6	<8.6	<8.8	<8.6	<8.5	<8.5
Perfluorodecane sulfonic acid (PFDS)	NA	<4.4	<4.4	<4.3	<4.3	<4.4	<4.3	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.4	<4.4	<4.3	<4.3	<4.4	<4.3	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.4	<4.4	<4.3	<4.3	<4.4	<4.3	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.4	<4.4	<4.3	<4.3	<4.4	<4.3	<4.2	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.4	<4.4	<4.3	<4.3	<4.4	<4.3	<4.2	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.4	<4.4	<4.3	<4.3	<4.4	<4.3	<4.2	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.4	<4.4	<4.3	<4.3	<4.4	<4.3	<4.2	<4.2
Perfluorononanoic acid (PFNA)	NA	<4.4	<4.4	<4.3	<4.3	<4.4	<4.3	<4.2	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4.4	<4.4	<4.3	<4.3	<4.4	<4.3	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4.4	<4.4	<4.3	<4.3	<4.4	<4.3	<4.2	<4.2
Perfluorooctanoic acid (PFOA)	70	<1 8	<1.8	<1.7	<1.7	<1 8	<1.7	<1.7	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4.4	<4.4	<4.3	<4.3	<4.4	<4.3	<4.2	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4.4	<4.4	<4.3	<4.3	<4.4	<4.3	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4.4	<4.4	<4.3	<4.3	<4.4	<4.3	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4.4	<4.4	<4.3	<4.3	<4.4	<4.3	<4.2	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411015451030	411015451005	411015451024	411015451025	411015376057	411015376067	411015376067	411015376045
GZAParcelNum		1103	1104	1105	1106	1107	1108	1108	1110
Sample Name		6194 Rogue Ln Dr NE	6170 Rogue Ln Dr NE	6148 Rogue Ln Dr NE	6132 Rogue Ln Dr NE	2783 Rogue River Rd	2787 Rogue River Rd-Ext	2787 Rogue River Rd-Int	2789 Rogue River Rd
Contact Name		[redacted]							
Address_UC		6194 ROGUE LN NE	6170 ROGUE LN NE	6148 ROGUE LN NE	6132 ROGUE LN NE	2783 ROGUE RIVER RD NE	2787 ROGUE RIVER RD NE	2787 ROGUE RIVER RD NE	2789 ROGUE RIVER RD NE
Laboratory ID		K1711853-020	K1711853-019	K1711853-018	K1711853-017	K1711853-005	K1711853-007	K1711853-006	K1711853-008
Sample Date		10/31/2017	10/31/2017	10/31/2017	10/31/2017	10/31/2017	10/31/2017	10/31/2017	10/31/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.8	<4.2	<4.4	<4 3	<4.3	<4.2	<4.4	<4.3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.8	<4.2	<4.4	<4 3	<4.3	<4.2	<4.4	<4.3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.8	<4.2	<4.4	<4.3	<4.3	<4.2	<4.4	<4.3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.8	<4.2	<4.4	<4.3	<4.3	<4.2	<4.4	<4.3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.8	<4.2	<4.4	<4.3	<4.3	<4.2	<4.4	<4.3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.8	<4.2	<4.4	<4.3	<4.3	<4.2	<4.4	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	<4.8	4.9	5.4	<4.3	<4 3	<4.2	4.8	4.8
Perfluorobutanoic acid (PFBA)	NA	<9.5	<8.5	<8.8	<8.6	<8.6	<8.5	<8.8	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.8	<4.2	<4.4	<4.3	<4 3	<4.2	<4.4	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.8	<4.2	<4.4	<4.3	<4 3	<4.2	<4.4	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4.8	<4.2	<4.4	<4.3	<4 3	<4.2	<4.4	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.8	<4.2	<4.4	<4.3	<4 3	<4.2	<4.4	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4 8	<4.2	<4.4	<4.3	<4 3	<4.2	<4.4	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	<4 8	<4.2	7.5	<4.3	<4 3	<4.2	<4.4	<4.3
Perfluorohexanoic acid (PFHxA)	NA	<4 8	<4.2	6.7	<4.3	<4 3	<4.2	<4.4	<4.3
Perfluorononanoic acid (PFNA)	NA	<4 8	<4.2	<4.4	<4.3	<4 3	<4.2	<4.4	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4 8	<4.2	<4.4	<4.3	<4 3	<4.2	<4.4	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	<4 8	<4.2	<4.4	<4.3	<4 3	<4.2	<4.4	<4.3
Perfluorooctanoic acid (PFOA)	70	2.7	<1.7	<1.8	<1.7	<1.7	<1.7	<1.8	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4 8	<4.2	<4.4	<4.3	<4 3	<4.2	<4.4	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 8	<4.2	<4.4	<4.3	<4 3	<4.2	<4.4	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4 8	<4.2	<4.4	<4.3	<4 3	<4.2	<4.4	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4 8	<4.2	<4.4	<4.3	<4 3	<4.2	<4.4	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411015376044	411015376047	411015376032	411015376050	411015376051	411015376029	411015376069	411015376017
GZAParcelNum		1111	1112	1115	1116	1117	1118	1120	1121
Sample Name		2791 Rogue River Rd	2803 Rogue River Rd	2805 Rogue River Rd	2807 Rogue River Rd	2809 Rogue River Rd NE	2811 Rogue River	2739 Rogue River Rd NE	6072 Belshire Ave NE
Contact Name		[redacted]							
Address_UC		2791 ROGUE RIVER RD NE	2803 ROGUE RIVER RD NE	2805 ROGUE RIVER RD NE	2807 ROGUE RIVER RD NE	2809 ROGUE RIVER RD NE	2811 ROGUE RIVER RD NE	2739 ROGUE RIVER RD NE	6072 BELSHIRE AVE NE
Laboratory ID		K1711853-009	K1711853-010	K1711853-011	K1711853-012	K1711961-002	K1712267-005	K1711961-005	K1711964-009
Sample Date		10/31/2017	10/31/2017	10/31/2017	10/31/2017	11/01/2017	11/09/2017	11/01/2017	11/01/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.2	<4.3	<4 3	<4.3	<4.4	<4.2	<4.2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.2	<4.3	<4 3	<4.3	<4.4	<4.2	<4.2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.2	<4.3	<4 3	<4.3	<4.4	<4.2	<4.2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.3	<4 3	<4.3	<4.4	<4.2	<4.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.2	<4.3	<4.3	<4.3	<4.4	<4.2	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.3	<4.3	<4.3	<4.4	<4.2	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	12	6.9	11	8.4	14	18	<4.2	<4.2
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.5	<8.6	<8.6	<8.7	<8.8	<8.5	<8.5
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.2	<4.3	<4.3	<4 3	<4.4	<4.2	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.2	<4.3	<4.3	<4 3	<4.4	<4.2	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.3	<4.2	<4.3	<4.3	<4 3	<4.4	<4.2	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.3	<4.2	<4.3	<4.3	<4 3	<4.4	<4.2	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.3	<4.2	<4.3	<4.3	<4 3	<4.4	<4.2	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.3	9 9	4.6	13	7.4	<4.4	5.7	<4.2
Perfluorohexanoic acid (PFHxA)	NA	7.8	9 8	6.2	8.1	7.7	6 8	8.2	<4.2
Perfluorononanoic acid (PFNA)	NA	<4 3	<4.2	<4.3	<4.3	<4 3	<4.4	<4.2	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4 3	<4.2	<4.3	<4.3	<4 3	<4.4	<4.2	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4 3	6.4	62	15	6.6	4.6	<4.2	<4.2
Perfluorooctanoic acid (PFOA)	70	7.2	12	7.4	11	13	15	13	3.2
Perfluoropentanoic acid (PFPeA)	NA	6.1	7 3	<4.3	4.5	5.2	4 5	<4.2	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 3	<4.2	<4.3	<4.3	<4 3	<4.4	<4.2	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4 3	<4.2	<4.3	<4.3	<4 3	<4.4	<4.2	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 3	<4.2	<4.3	<4.3	<4 3	<4.4	<4.2	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411015376034	411015352017	411015352045	411015352042	411015351035	411015351036	411015152001	411015151018
GZAParcelNum		1122	1123	1124	1125	1126	1127	1131	1132
Sample Name		6230 Belshire Ave NE	6175 Belshire Ave NE	2512 Lynhurst St NE	6126 Idaho	6121 Idaho	6107 Idaho	6480 Belmont	6510 Belmont Ave NE
Contact Name		[redacted]							
Address_UC		6230 BELSHIRE AVE NE	6175 BELSHIRE AVE NE	2512 LYNHURST ST NE	6126 IDAHO AVE NE	6121 IDAHO AVE NE	6107 IDAHO AVE NE	6480 BELMONT AVE NE	6510 BELMONT AVE NE
Laboratory ID		K1711856-009	K1711856-008	K1711856-013	K1711853-014	K1711853-015	K1711853-016	K1712064-002	K1711856-001
Sample Date		10/31/2017	10/31/2017	10/31/2017	10/31/2017	10/31/2017	10/31/2017	11/03/2017	10/31/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.3	<4.2	<4.3	<4 3	<4.4	<4.2	<4.5	<4.3
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.3	<4.2	<4.3	<4 3	<4.4	<4.2	<4.5	<4.3
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.3	<4.2	<4.3	<4.3	<4.4	<4.2	<4.5	<4.3
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.3	<4.3	<4.4	<4.2	<4.5	<4.3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.3	<4.2	<4.3	<4.3	<4.4	<4.2	<4.5	<4.3
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.3	<4.2	<4.3	<4.3	<4.4	<4.2	<4.5	<4.3
Perfluorobutane sulfonic acid (PFBS)	NA	9	100	9.4	6	7.2	9.6	<4.5	<4.3
Perfluorobutanoic acid (PFBA)	NA	<8.6	12	<8.6	<8.6	<8 8	<8.5	<9.1	<8.6
Perfluorodecane sulfonic acid (PFDS)	NA	<4.3	<4.2	<4.3	<4.3	<4.4	<4.2	<4.5	<4.3
Perfluorodecanoic acid (PFDA)	NA	<4.3	<4.2	<4.3	<4.3	<4.4	<4.2	<4.5	<4.3
Perfluorododecanoic acid (PFDoDA)	NA	<4 3	<4.2	<4.3	<4.3	<4.4	<4.2	<4.5	<4.3
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4 3	<4.2	<4.3	<4.3	<4.4	<4.2	<4.5	<4.3
Perfluoroheptanoic acid (PFHpA)	NA	<4 3	4 9	<4.3	<4.3	<4.4	<4.2	<4.5	<4.3
Perfluorohexane sulfonic acid (PFHxS)	NA	5.2	6.1	<4.3	<4.3	4.8	<4.2	<4.5	<4.3
Perfluorohexanoic acid (PFHxA)	NA	5.9	8.6	<4.3	7	7.3	8.6	<4.5	<4.3
Perfluorononanoic acid (PFNA)	NA	<4 3	<4.2	<4.3	<4.3	<4.4	<4.2	<4.5	<4.3
Perfluorooctane sulfonamide (FOSA)	NA	<4 3	<4.2	<4.3	<4.3	<4.4	<4.2	<4.5	<4.3
Perfluorooctane sulfonic acid (PFOS)	70	5.4	10	<4.3	<4.3	5.4	<4.2	<4.5	<4.3
Perfluorooctanoic acid (PFOA)	70	7.3	14	<1.7	3	6	6 2	<1.8	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4 3	6 2	<4.3	4.7	5	6	<4.5	<4.3
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 3	<4.2	<4.3	<4.3	<4.4	<4.2	<4.5	<4.3
Perfluorotridecanoic acid (PFTrDA)	NA	<4 3	<4.2	<4.3	<4.3	<4.4	<4.2	<4.5	<4.3
Perfluoroundecanoic acid (PFUnDA)	NA	<4 3	<4.2	<4.3	<4.3	<4.4	<4.2	<4.5	<4.3

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411015151017	411015151023	411015151012	411015151024	411015302009	411015352040	411015302012	411015302015
GZAParcelNum		1133	1134	1135	1136	1137	1138	1139	1140
Sample Name		6530 Belmont Ave NE	6562 Belmont Ave NE	6566 Belmont Ave NE	6550 Belmont Ave NE	2551/2513 Lynhurst St NE	2538 Lynhurst St NE	2597/2595 Lynhurst	6250 Belmont Ave NE
Contact Name		[redacted]							
Address_UC		6530 BELMONT AVE NE	6562 BELMONT AVE NE	6566 BELMONT AVE NE	6550 BELMONT AVE NE	2551 LYNHURST ST NE	2538 LYNHURST ST NE	2595 LYNHURST ST NE	6300 BELSHIRE AVE NE
Laboratory ID		K1711856-002	K1711856-007	K1711856-004	K1711856-003	K1711856-011	K1711856-012	K1712064-006	K1711784-008
Sample Date		10/31/2017	10/31/2017	10/31/2017	10/31/2017	10/31/2017	10/31/2017	11/03/2017	10/27/2017
Parameter (ng/L)									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4.2	<5.4	<4.2	<4 2	<4.3	<4.4	<4.3	<4.2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4.2	<5.4	<4.2	<4 2	<4.3	<4.4	<4.3	<4.2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4.2	<5.4	<4.2	<4 2	<4.3	<4.4	<4.3	<4.2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4.2	<5.4	<4.2	<4 2	<4.3	<4.4	<4.3	<4.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4.2	<5.4	<4.2	<4 2	<4.3	<4.4	<4.3	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4.2	<5.4	<4.2	<4 2	<4.3	<4.4	<4.3	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4.2	<5.4	<4.2	<4.2	5	6.1	<4.3	<4.2
Perfluorobutanoic acid (PFBA)	NA	<8.3	<11	<8.3	<8.3	<8.6	<8.8	<8.7	<8.3
Perfluorodecane sulfonic acid (PFDS)	NA	<4.2	<5.4	<4.2	<4.2	<4.3	<4.4	<4.3	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4.2	<5.4	<4.2	<4.2	<4 3	<4.4	<4.3	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4.2	<5.4	<4.2	<4.2	<4 3	<4.4	<4.3	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4.2	<5.4	<4.2	<4.2	<4 3	<4.4	<4.3	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4.2	<5.4	<4.2	<4.2	<4 3	<4.4	5.6	<4.2
Perfluorohexane sulfonic acid (PFHxS)	NA	<4.2	<5.4	<4.2	<4.2	5.8	<4.4	<4.3	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4.2	<5.4	<4.2	<4.2	<4 3	<4.4	5.7	<4.2
Perfluorononanoic acid (PFNA)	NA	<4 2	<5.4	<4.2	<4.2	<4 3	<4.4	<4.3	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4 2	<5.4	<4.2	<4.2	<4 3	<4.4	<4.3	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4 2	<5.4	<4.2	<4.2	<4 3	4.6	<4.3	<4.2
Perfluorooctanoic acid (PFOA)	70	<1.7	<2.1	<1.7	<1.7	5.2	4 5	2.4	<1.7
Perfluoropentanoic acid (PFPeA)	NA	<4 2	<5.4	<4.2	<4.2	<4 3	<4.4	11	<4.2
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 2	<5.4	<4.2	<4.2	<4 3	<4.4	<4.3	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4 2	<5.4	<4.2	<4.2	<4 3	<4.4	<4.3	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 2	<5.4	<4.2	<4.2	<4 3	<4.4	<4.3	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

PPN	MDEQ PART 201 RESIDENTIAL GROUNDWATER CLEANUP CRITERIA PROTECTIVE OF DRINKING WATER USES / USEPA HEALTH ADVISORY LEVEL	411015302015	411015351044
GZAParcelNum		1140	1141
Sample Name		6272 Belshire Ave NE	2461 Rogue River Rd
Contact Name		[redacted]	
Address_UC		6300 BELSHIRE AVE NE	2461 ROGUE RIVER RD NE
Laboratory ID		K1711784-010	K1711853-004
Sample Date		10/27/2017	10/31/2017
Parameter (ng/L)			
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	<4 3	<4.2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	<4 3	<4.2
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	<4 3	<4.2
N-Ethyl perfluorooctane sulfonamidoethanol	NA	<4 3	<4.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	<4 3	<4.2
N-Methyl perfluorooctane sulfonamidoethanol	NA	<4 3	<4.2
Perfluorobutane sulfonic acid (PFBS)	NA	<4 3	<4.2
Perfluorobutanoic acid (PFBA)	NA	<8.6	<8.5
Perfluorodecane sulfonic acid (PFDS)	NA	<4 3	<4.2
Perfluorodecanoic acid (PFDA)	NA	<4 3	<4.2
Perfluorododecanoic acid (PFDoDA)	NA	<4 3	<4.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	<4 3	<4.2
Perfluoroheptanoic acid (PFHpA)	NA	<4 3	6 8
Perfluorohexane sulfonic acid (PFHxS)	NA	<4 3	<4.2
Perfluorohexanoic acid (PFHxA)	NA	<4 3	6.7
Perfluorononanoic acid (PFNA)	NA	<4 3	<4.2
Perfluorooctane sulfonamide (FOSA)	NA	<4 3	<4.2
Perfluorooctane sulfonic acid (PFOS)	70	<4 3	5 3
Perfluorooctanoic acid (PFOA)	70	<1.7	2 2
Perfluoropentanoic acid (PFPeA)	NA	<4 3	13
Perfluorotetradecanoic acid (PFTeDA)	NA	<4 3	<4.2
Perfluorotridecanoic acid (PFTrDA)	NA	<4 3	<4.2
Perfluoroundecanoic acid (PFUnDA)	NA	<4 3	<4.2

TABLE C
SUMMARY OF WATER WELL ANALYTICAL DATA - PFAS
FORMER HOUSE STREET DISPOSAL SITE
PLAINFIELD TOWNSHIP, MICHIGAN

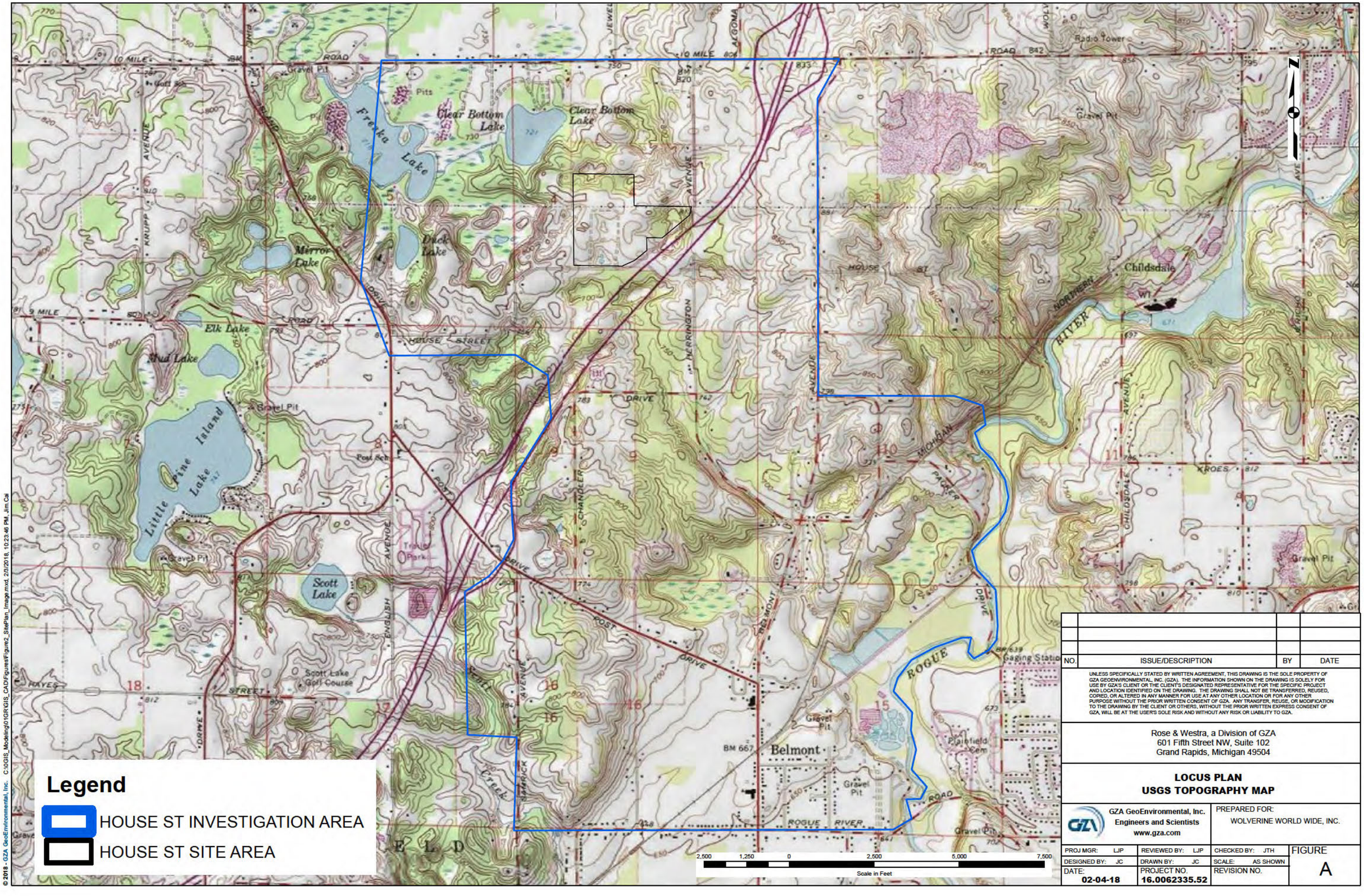
NOTES:
1. Concentration and criteria units are nano-grams per liter (ng/L) or parts per trillion (ppt); "< RL" indicates the compound was analyzed for but not detected above the method detection limit; RL = Reporting Limit

2. Bold indicates that compound was detected above the RL. Italic number with thick line border or italic chemical indicates that compound was detected above the USEPA Health Advisory for Drinking Water Uses.

3. Michigan Part 201 residential 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. USEPA Health Advisory Level of 70 ppt was established fro the combined concentrations of PFOA and PFOS.

FIGURES



Legend

HOUSE ST INVESTIGATION AREA

HOUSE ST SITE AREA

2,500 1,250 0 2,500 5,000 7,500

Scale in Feet

NO.	ISSUE/DESCRIPTION	BY	DATE

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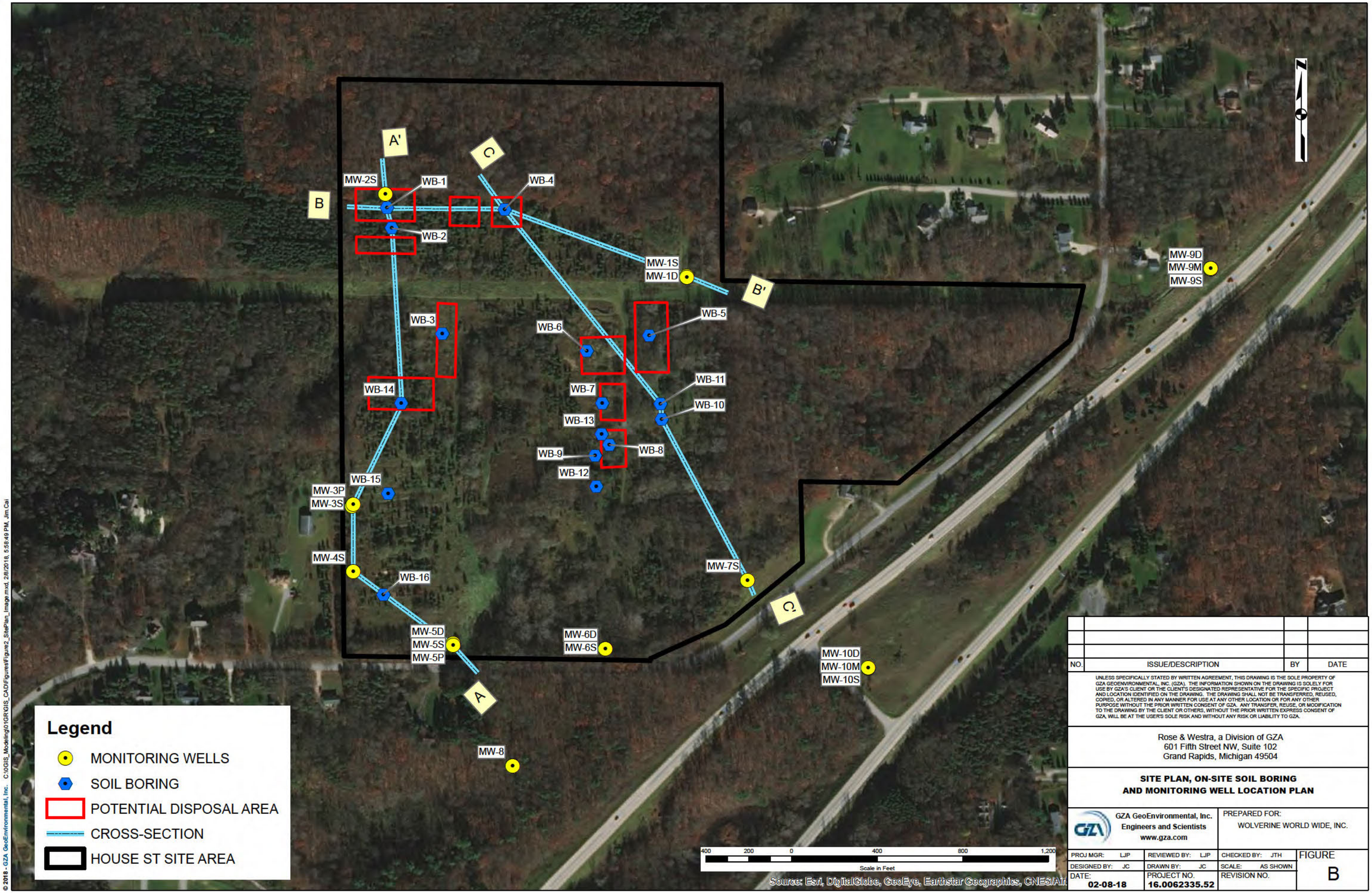
LOCUS PLAN
USGS TOPOGRAPHY MAP

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

PREPARED FOR: WOLVERINE WORLD WIDE, INC.

PROJ MGR: LJP	REVIEWED BY: LJP	CHECKED BY: JTH	FIGURE A
DESIGNED BY: JC	DRAWN BY: JC	SCALE: AS SHOWN	
DATE: 02-04-18	PROJECT NO. 16.0062335.52	REVISION NO.	

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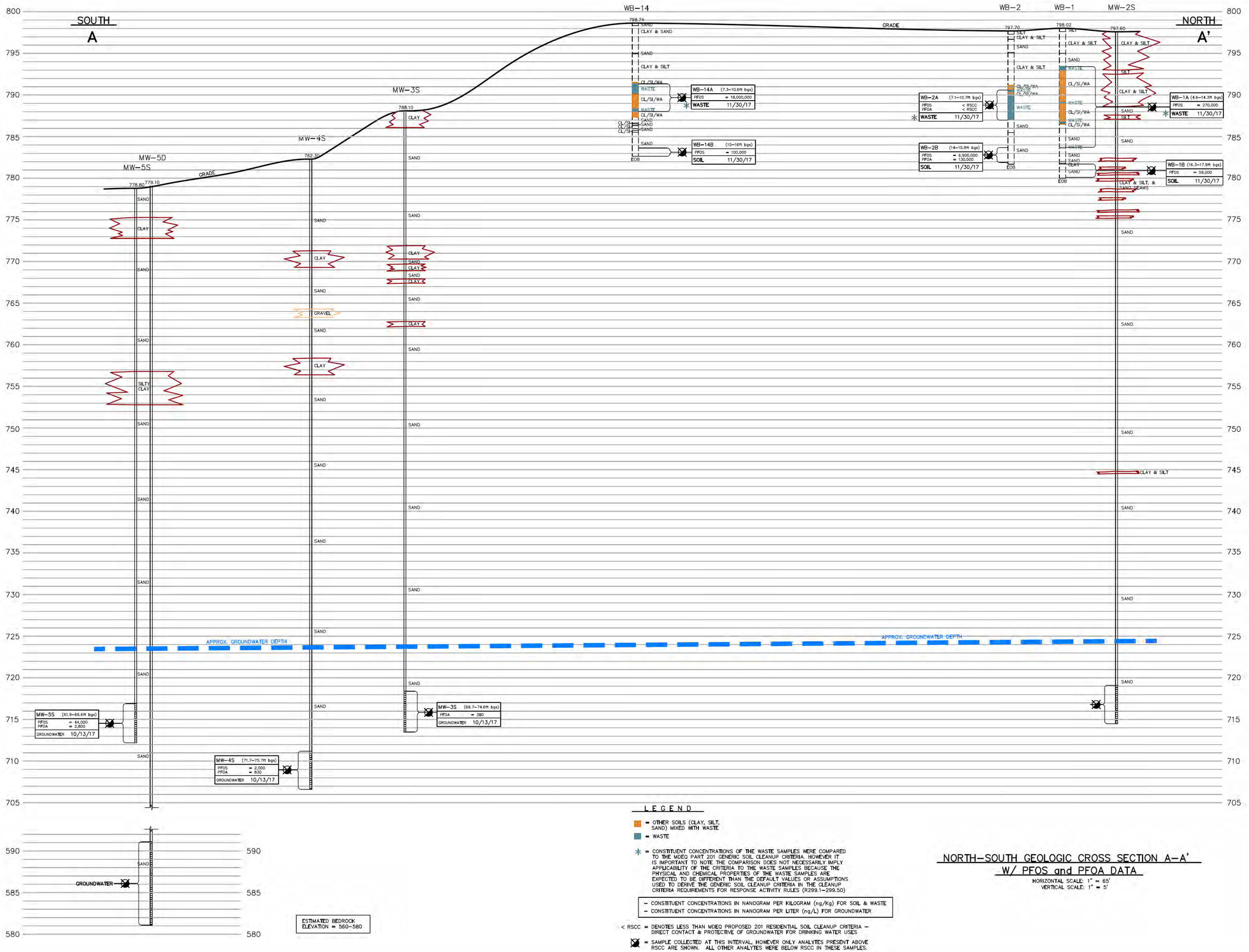
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601 Fifth Street NW, Suite 102
Grand Rapids, Michigan 49504

SITE PLAN, ON-SITE SOIL BORING AND MONITORING WELL LOCATION PLAN

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

PREPARED FOR:
WOLVERINE WORLD WIDE, INC.

PROJ MGR: LJP	REVIEWED BY: LJP	CHECKED BY: JTH	FIGURE
DESIGNED BY: JC	DRAWN BY: JC	SCALE: AS SHOWN	B
DATE: 02-08-18	PROJECT NO. 16.0062335.52	REVISION NO.	



LEGEND

- = OTHER SOILS (CLAY, SILT, SAND) MIXED WITH WASTE
- = WASTE
- * = CONSTITUENT CONCENTRATIONS OF THE WASTE SAMPLES WERE COMPARED TO THE MDEQ PART 201 GENERIC SOIL 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)

– CONSTITUENT CONCENTRATIONS IN NANOGRAM PER KILOGRAM (ng/Kg) FOR SOIL & WASTE
– CONSTITUENT CONCENTRATIONS IN NANOGRAM PER LITER (ng/L) FOR GROUNDWATER

< RSCC = DENOTES LESS THAN MDEQ PROPOSED 201 RESIDENTIAL SOIL CLEANUP CRITERIA – DIRECT CONTACT & PROTECTIVE OF GROUNDWATER FOR DRINKING WATER USES

= SAMPLE COLLECTED AT THIS INTERVAL, HOWEVER ONLY ANALYTES PRESENT ABOVE RSCC ARE SHOWN. ALL OTHER ANALYTES WERE BELOW RSCC IN THESE SAMPLES.

NORTH-SOUTH GEOLOGIC CROSS SECTION A-A'
W/ PFOS and PFOA DATA

HORIZONTAL SCALE: 1" = 65'
VERTICAL SCALE: 1" = 5'

DRAWN BY	DESIGN BY	DATE
KJB	MAH	2/4/16

FILE NO.: 62335.52_CSM

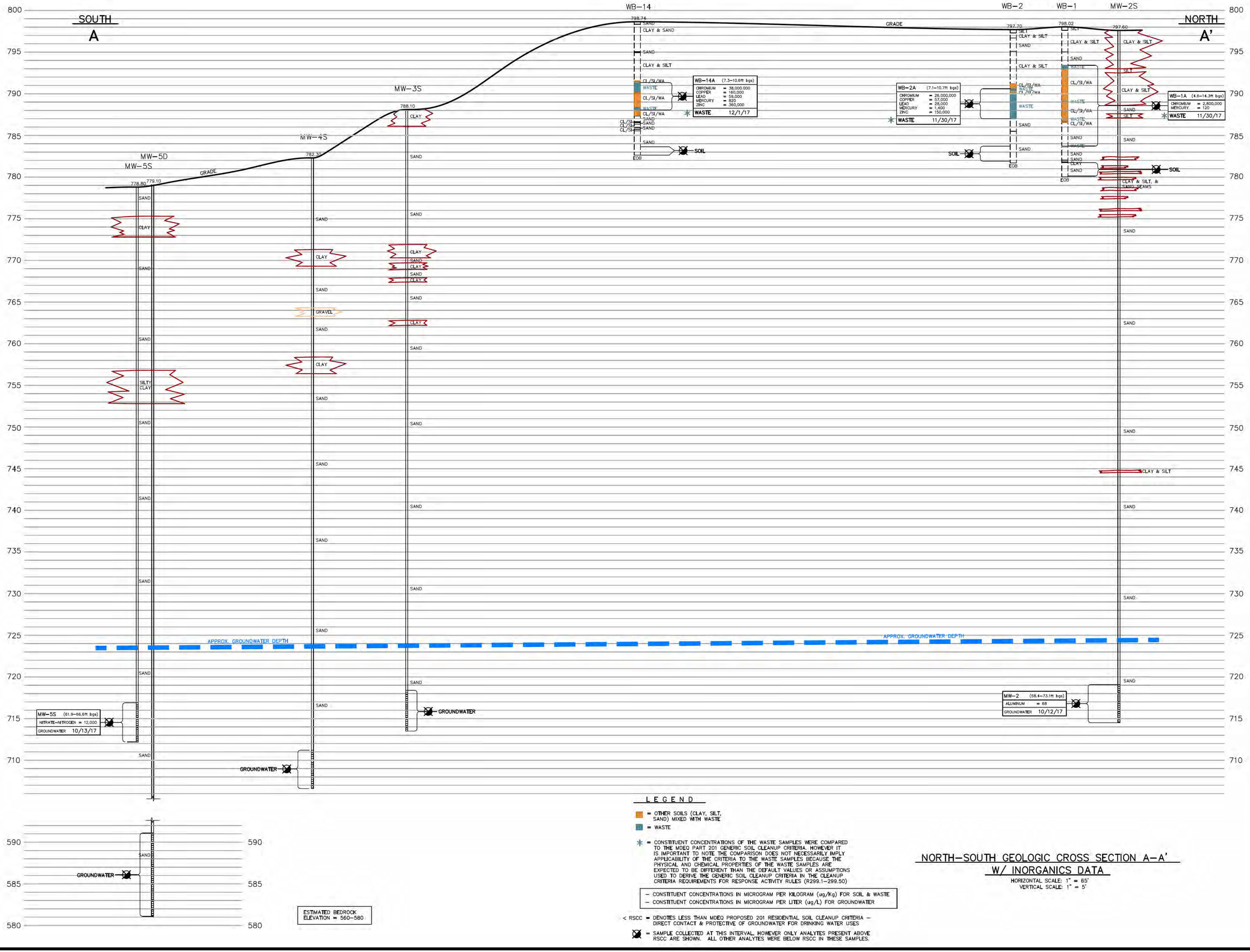
NO.	REVISIONS	BY	DATE
	REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS		

WOLVERINE WORLD WIDE, INC.
FORMER HOUSE STREET SITE
CONCEPTUAL SITE MODEL

ROSE & WESTRA
A DIVISION OF GZA
Grand Rapids, Michigan
GEOTECHNICAL-ENVIRONMENTAL-ECOLOGICAL-WATER-CONSTRUCTION MANAGEMENT

PROJECT NO.
16.0062335.52

SHEET NO.
C1



LEGEND

= OTHER SOILS (CLAY, SILT, SAND) MIXED WITH WASTE

= WASTE

* = CONSTITUENT CONCENTRATIONS OF THE WASTE SAMPLES WERE COMPARED TO THE MDEQ PART 201 GENERIC SOIL 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)

– CONSTITUENT CONCENTRATIONS IN MICROGRAM PER KILOGRAM (ug/Kg) FOR SOIL & WASTE
– CONSTITUENT CONCENTRATIONS IN MICROGRAM PER LITER (ug/L) FOR GROUNDWATER

< RSCC = DENOTES LESS THAN MDEQ PROPOSED 201 RESIDENTIAL SOIL CLEANUP CRITERIA – DIRECT CONTACT & PROTECTIVE OF GROUNDWATER FOR DRINKING WATER USES

= SAMPLE COLLECTED AT THIS INTERVAL, HOWEVER ONLY ANALYTES PRESENT ABOVE RSCC ARE SHOWN. ALL OTHER ANALYTES WERE BELOW RSCC IN THESE SAMPLES.

NORTH–SOUTH GEOLOGIC CROSS SECTION A–A'
W/ INORGANICS DATA

HORIZONTAL SCALE: 1" = 65'
VERTICAL SCALE: 1" = 5'

DRAWN BY KJB | DESIGN BY MAH | DATE 2/4/16

FILE NO.: 62335.52_CSM

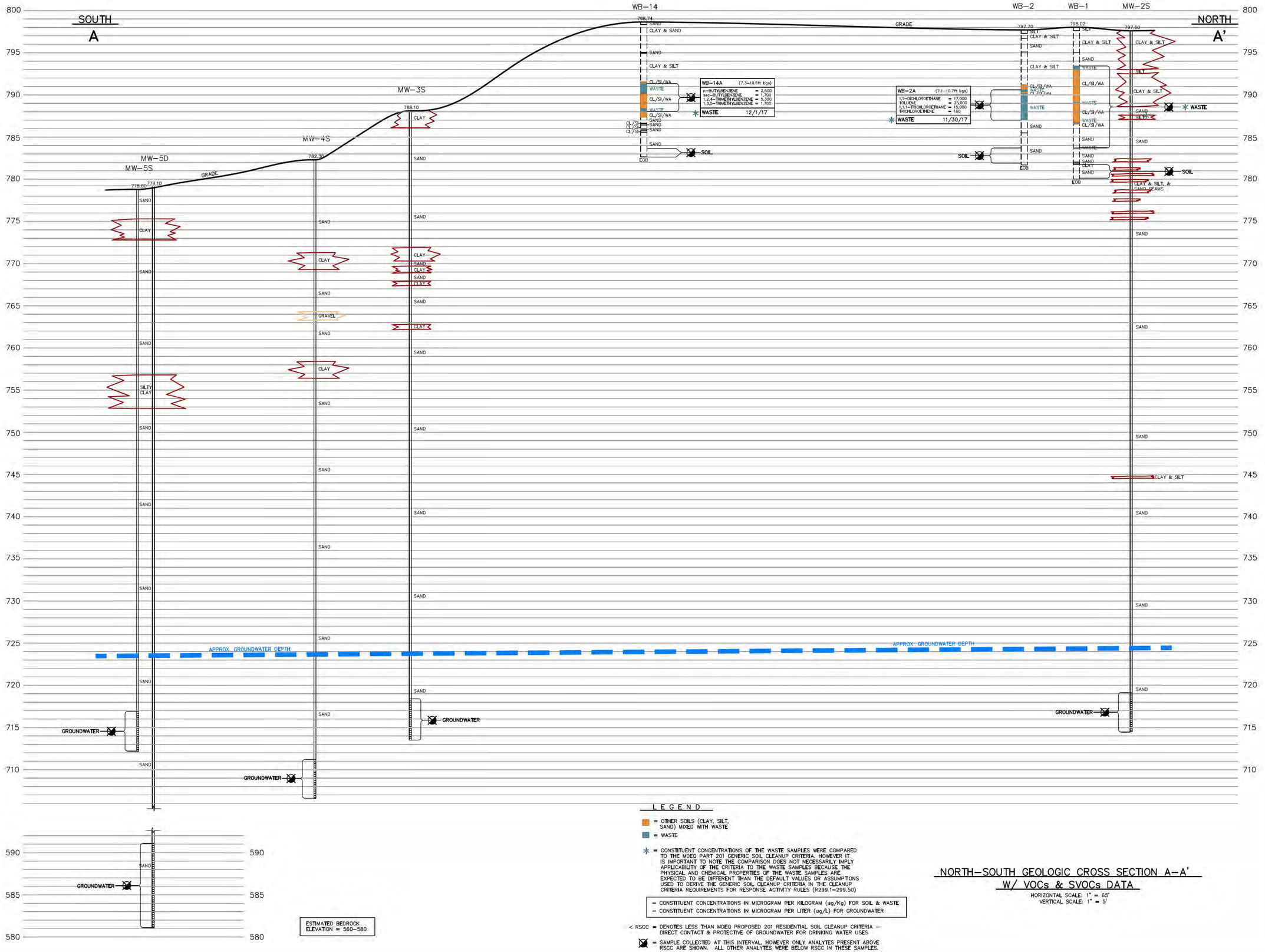
NO.	BY	DATE	REVISIONS
			REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

WOLVERINE WORLD WIDE, INC.
FORMER HOUSE STREET SITE
CONCEPTUAL SITE MODEL

ROSE & WESTRA
A DIVISION OF CZA
Grand Rapids, Michigan
GEOTECHNICAL–ENVIRONMENTAL–ECOLOGICAL–WATER–CONSTRUCTION MANAGEMENT

PROJECT NO.
16.0062335.52

SHEET NO.
C2



LEGEND

= OTHER SOILS (CLAY, SILT, SAND) MIXED WITH WASTE

= WASTE

* = CONSTITUENT CONCENTRATIONS OF THE WASTE SAMPLES WERE COMPARED TO THE MDEQ PART 201 GENERIC SOIL 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)

– CONSTITUENT CONCENTRATIONS IN MICROGRAM PER KILOGRAM (ug/Kg) FOR SOIL & WASTE
– CONSTITUENT CONCENTRATIONS IN MICROGRAM PER LITER (ug/L) FOR GROUNDWATER

< RSCC = DENOTES LESS THAN MDEQ PROPOSED 201 RESIDENTIAL SOIL CLEANUP CRITERIA – DIRECT CONTACT & PROTECTIVE OF GROUNDWATER FOR DRINKING WATER USES

= SAMPLE COLLECTED AT THIS INTERVAL, HOWEVER ONLY ANALYTES PRESENT ABOVE RSCC ARE SHOWN. ALL OTHER ANALYTES WERE BELOW RSCC IN THESE SAMPLES.

NORTH-SOUTH GEOLOGIC CROSS SECTION A-A'
W/ VOCs & SVOCs DATA

HORIZONTAL SCALE: 1" = 65'
VERTICAL SCALE: 1" = 5'

DRAWN BY KJB | DESIGN BY MAH | DATE 2/4/16

FILE NO.: 62335.52_CSM

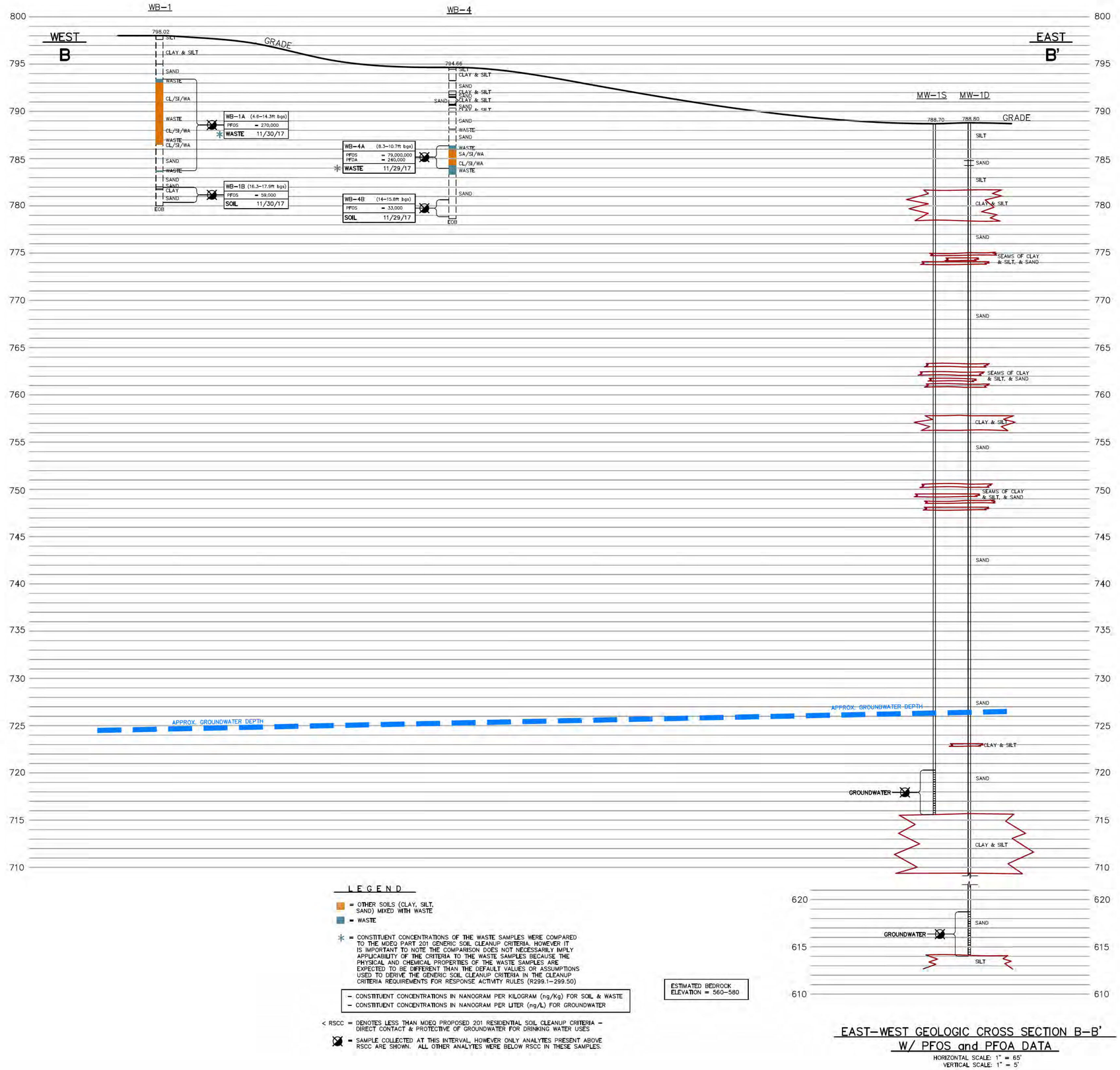
NO.	BY	DATE	REVISIONS
			REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

WOLVERINE WORLD WIDE, INC.
FORMER HOUSE STREET SITE
CONCEPTUAL SITE MODEL

ROSE & WESTRA
A DIVISION OF CZA
Grand Rapids, Michigan
GEOTECHNICAL - ENVIRONMENTAL - ECOLOGICAL - WATER - CONSTRUCTION MANAGEMENT

PROJECT NO.
16.0062335.52

SHEET NO.
C3



EAST-WEST GEOLOGIC CROSS SECTION B-B'
W/ PFOS and PFOA DATA

HORIZONTAL SCALE: 1" = 65'
VERTICAL SCALE: 1" = 5'

DRAWN BY KJB | DESIGN BY MAH | DATE 2/4/16

FILE NO.: 62335.52_CSM

NO.	BY	DATE	REVISIONS

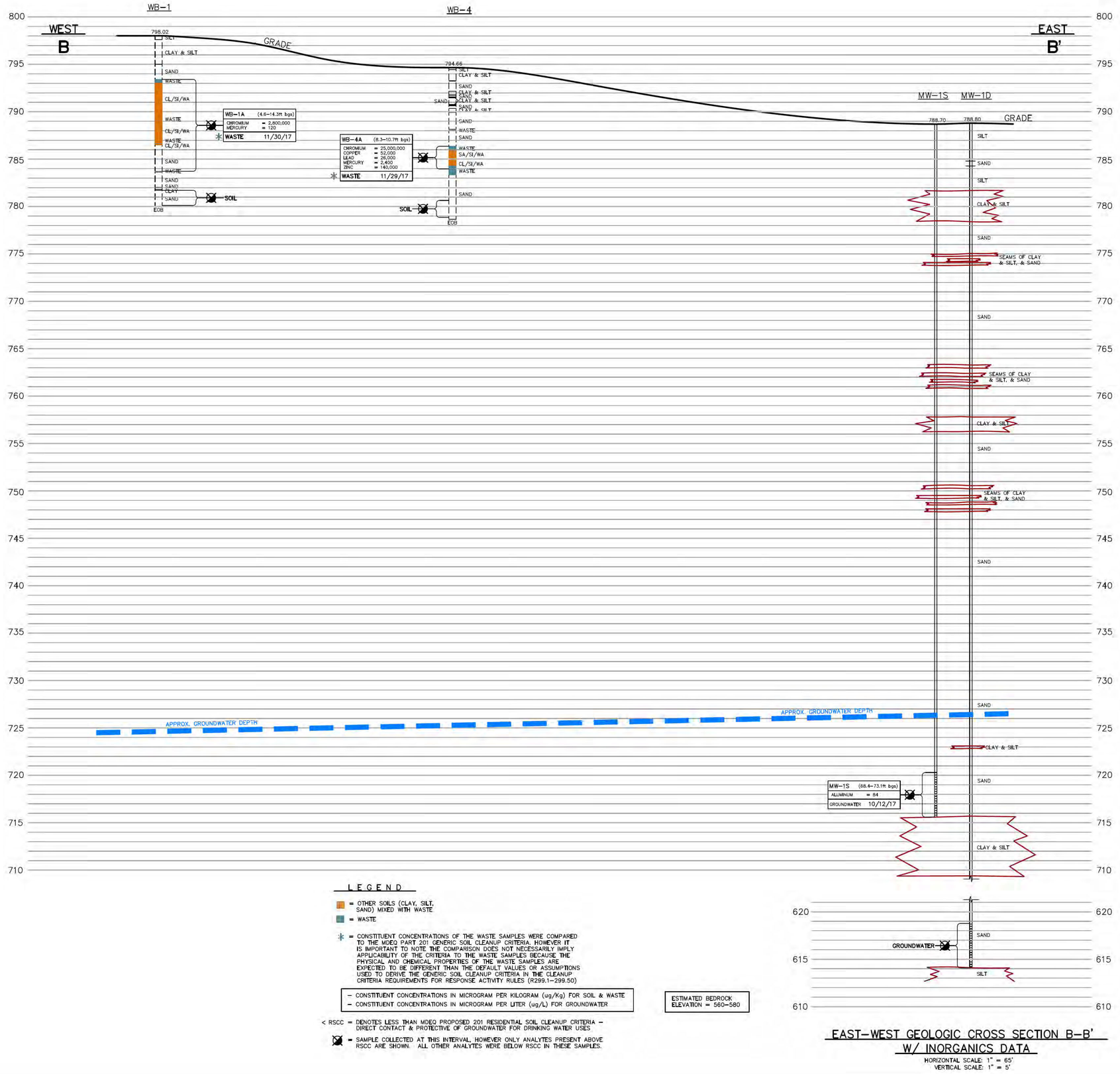
REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

WOLVERINE WORLD WIDE, INC.
FORMER HOUSE STREET SITE
CONCEPTUAL SITE MODEL

ROSE & WESTRA
A DIVISION OF GZA
Grand Rapids, Michigan
GEOTECHNICAL - ENVIRONMENTAL - ECOLOGICAL - WATER - CONSTRUCTION MANAGEMENT

PROJECT NO.
16.0062335.52

SHEET NO.
D1



LEGEND

= OTHER SOILS (CLAY, SILT, SAND) MIXED WITH WASTE

= WASTE

* = CONSTITUENT CONCENTRATIONS OF THE WASTE SAMPLES WERE COMPARED TO THE MDEQ PART 201 GENERIC SOIL 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)

– CONSTITUENT CONCENTRATIONS IN MICROGRAM PER KILOGRAM (ug/Kg) FOR SOIL & WASTE
– CONSTITUENT CONCENTRATIONS IN MICROGRAM PER LITER (ug/L) FOR GROUNDWATER

< RSCC = DENOTES LESS THAN MDEQ PROPOSED 201 RESIDENTIAL SOIL CLEANUP CRITERIA – DIRECT CONTACT & PROTECTIVE OF GROUNDWATER FOR DRINKING WATER USES

= SAMPLE COLLECTED AT THIS INTERVAL, HOWEVER ONLY ANALYTES PRESENT ABOVE RSCC ARE SHOWN. ALL OTHER ANALYTES WERE BELOW RSCC IN THESE SAMPLES.

ESTIMATED BEDROCK ELEVATION = 560-580

EAST-WEST GEOLOGIC CROSS SECTION B-B' W/ INORGANICS DATA

HORIZONTAL SCALE: 1" = 65'
VERTICAL SCALE: 1" = 5'

DRAWN BY KJB | DESIGN BY MAH | DATE 2/4/16

FILE NO.: 62335.52_GSM

NO.	BY	DATE	REVISIONS

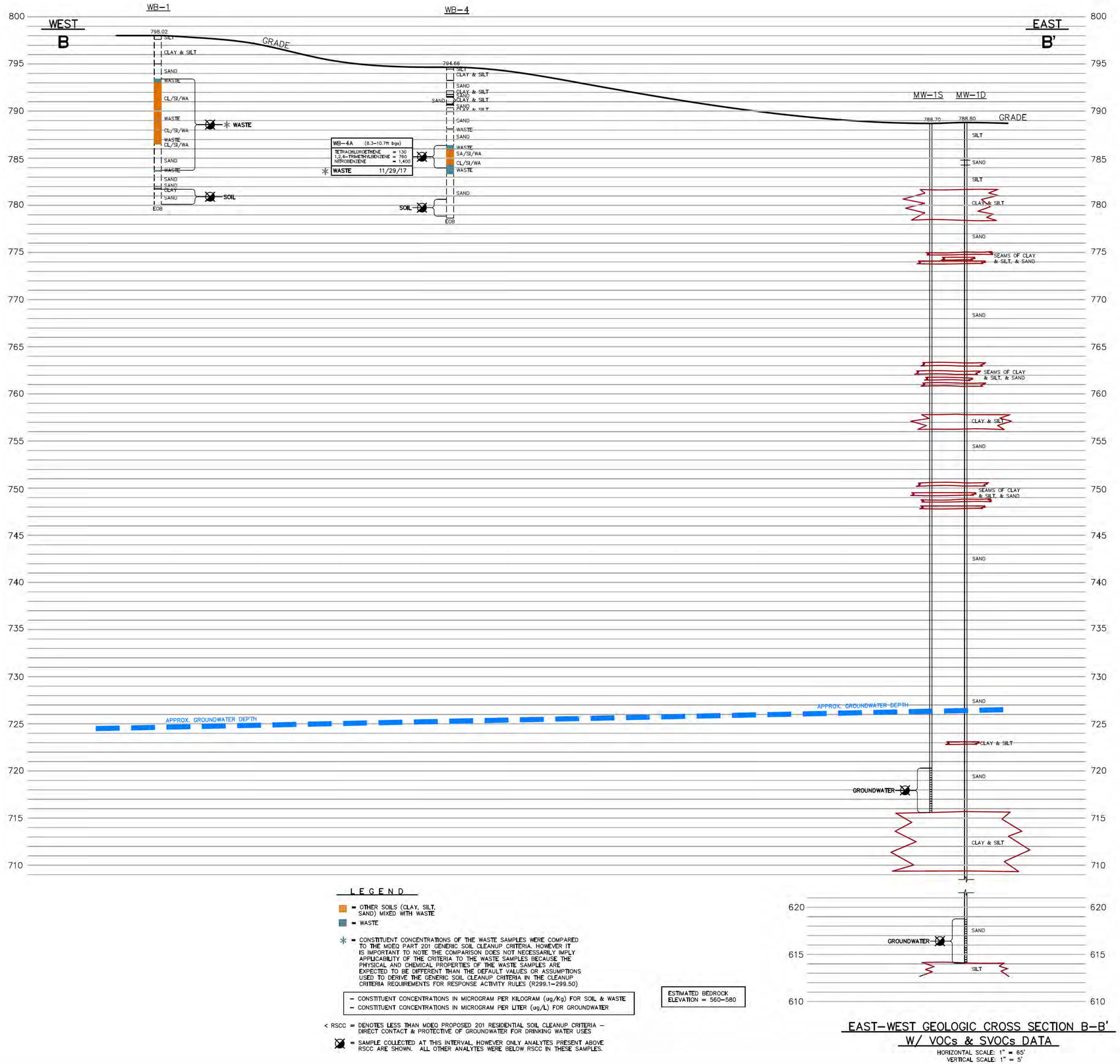
REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

WOLVERINE WORLD WIDE, INC.
FORMER HOUSE STREET SITE
CONCEPTUAL SITE MODEL

ROSE & WESTRA
A DIVISION OF GZA
Grand Rapids, Michigan
GEOTECHNICAL - ENVIRONMENTAL - ECOLOGICAL - WATER - CONSTRUCTION MANAGEMENT

PROJECT NO.
16.0062335.52

SHEET NO.
D2



LEGEND

- = OTHER SOILS (CLAY, SILT, SAND) MIXED WITH WASTE
- = WASTE
- * = CONSTITUENT CONCENTRATIONS OF THE WASTE SAMPLES WERE COMPARED TO THE MDEQ PART 201 GENERIC SOIL 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)

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ESTIMATED BEDROCK ELEVATION = 560-580

EAST-WEST GEOLOGIC CROSS SECTION B-B' W/ VOCs & SVOCs DATA

HORIZONTAL SCALE: 1" = 65'
VERTICAL SCALE: 1" = 5'

DRAWN BY KJB | DESIGN BY MAH | DATE 2/4/16

FILE NO.: 62335.52_GSM

NO.	BY	DATE	REVISIONS

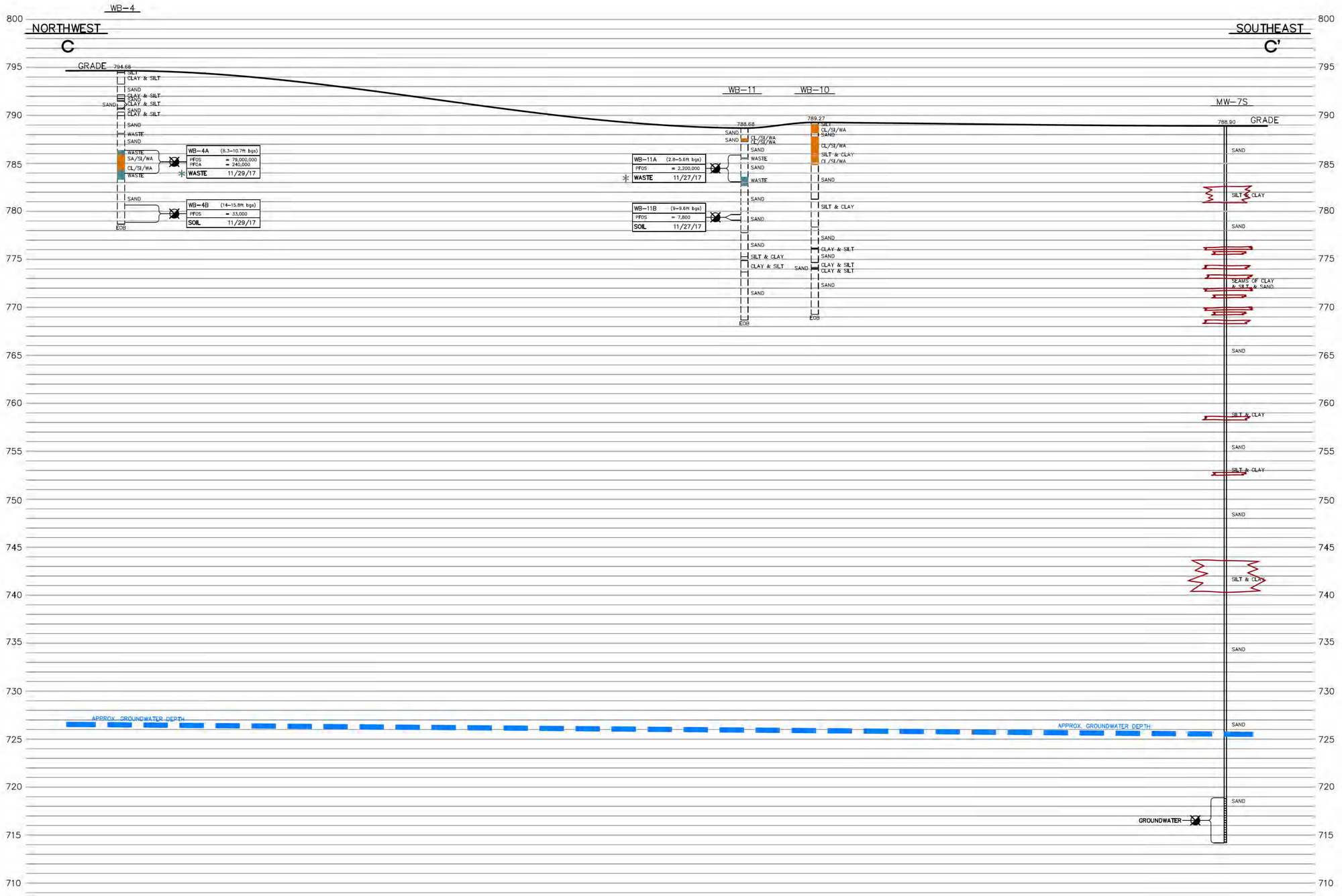
REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

WOLVERINE WORLD WIDE, INC.
FORMER HOUSE STREET SITE
CONCEPTUAL SITE MODEL

ROSE & WESTRA
A DIVISION OF GZA
Grand Rapids, Michigan
GEOTECHNICAL-ENVIRONMENTAL-ECOLOGICAL-WATER-CONSTRUCTION MANAGEMENT

PROJECT NO. 16.0062335.52

SHEET NO. D3



LEGEND

= OTHER SOILS (CLAY, SILT, SAND) MIXED WITH WASTE

= WASTE

* = CONSTITUENT CONCENTRATIONS OF THE WASTE SAMPLES WERE COMPARED TO THE MDEQ PART 201 GENERIC SOIL 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)

– CONSTITUENT CONCENTRATIONS IN NANOGRAM PER KILOGRAM (ng/Kg) FOR SOIL & WASTE
– CONSTITUENT CONCENTRATIONS IN NANOGRAM PER LITER (ng/L) FOR GROUNDWATER

< RSCC = DENOTES LESS THAN MDEQ PROPOSED 201 RESIDENTIAL SOIL CLEANUP CRITERIA – DIRECT CONTACT & PROTECTIVE OF GROUNDWATER FOR DRINKING WATER USES

= SAMPLE COLLECTED AT THIS INTERVAL, HOWEVER ONLY ANALYTES PRESENT ABOVE RSCC ARE SHOWN. ALL OTHER ANALYTES WERE BELOW RSCC IN THESE SAMPLES.

ESTIMATED BEDROCK ELEVATION = 560-580

NORTHWEST-SOUTHEAST GEOLOGIC CROSS SECTION C-C'
W/ PFOS and PFOA DATA

HORIZONTAL SCALE: 1" = 65'
VERTICAL SCALE: 1" = 5'

DRAWN BY KJB | DESIGN BY MAH | DATE 2/4/16

FILE NO.: 62335.52_CSM

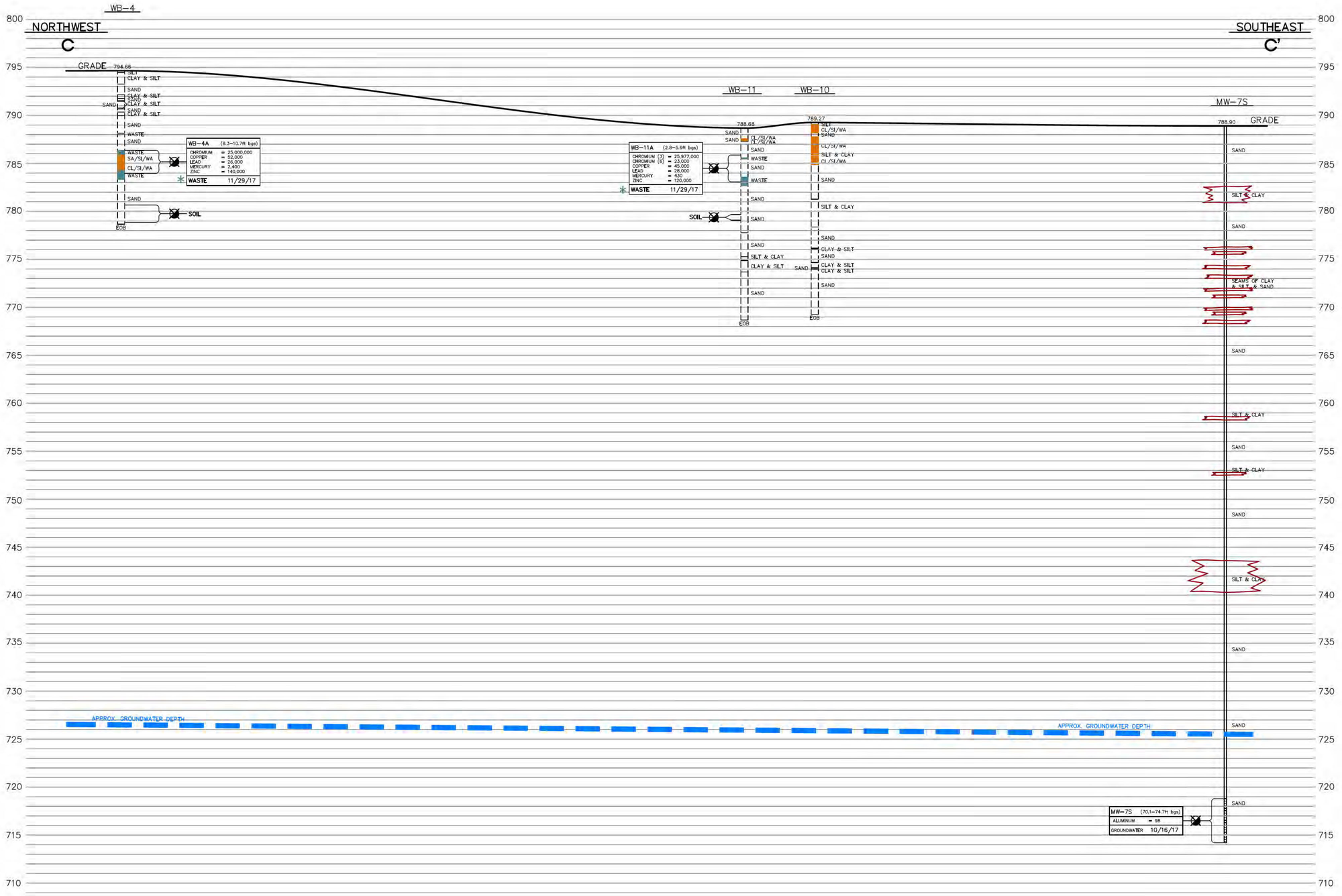
NO.	BY	DATE	REVISIONS
			REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

WOLVERINE WORLD WIDE, INC.
FORMER HOUSE STREET SITE
CONCEPTUAL SITE MODEL

ROSE & WESTRA
A DIVISION OF GZA
Grand Rapids, Michigan
GEOTECHNICAL-ENVIRONMENTAL-GEOLOGICAL-WATER-CONSTRUCTION MANAGEMENT

PROJECT NO.
16.0062335.52

SHEET NO.
E1



LEGEND

- = OTHER SOILS (CLAY, SILT, SAND) MIXED WITH WASTE
- = WASTE
- * = CONSTITUENT CONCENTRATIONS OF THE WASTE SAMPLES WERE COMPARED TO THE MDEQ PART 201 GENERIC SOIL 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)

- CONSTITUENT CONCENTRATIONS IN MICROGRAM PER KILOGRAM (ug/Kg) FOR SOIL & WASTE
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< RSCC = DENOTES LESS THAN MDEQ PROPOSED 201 RESIDENTIAL SOIL CLEANUP CRITERIA - DIRECT CONTACT & PROTECTIVE OF GROUNDWATER FOR DRINKING WATER USES

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ESTIMATED BEDROCK ELEVATION = 560-580

NORTHWEST-SOUTHEAST GEOLOGIC CROSS SECTION C-C'
W/ INORGANICS DATA

HORIZONTAL SCALE: 1" = 65'
VERTICAL SCALE: 1" = 5'

DRAWN BY KJB | DESIGN BY MAH | DATE 2/4/18

FILE NO.: 62335.52_CSM

NO.	BY	DATE

REVISIONS

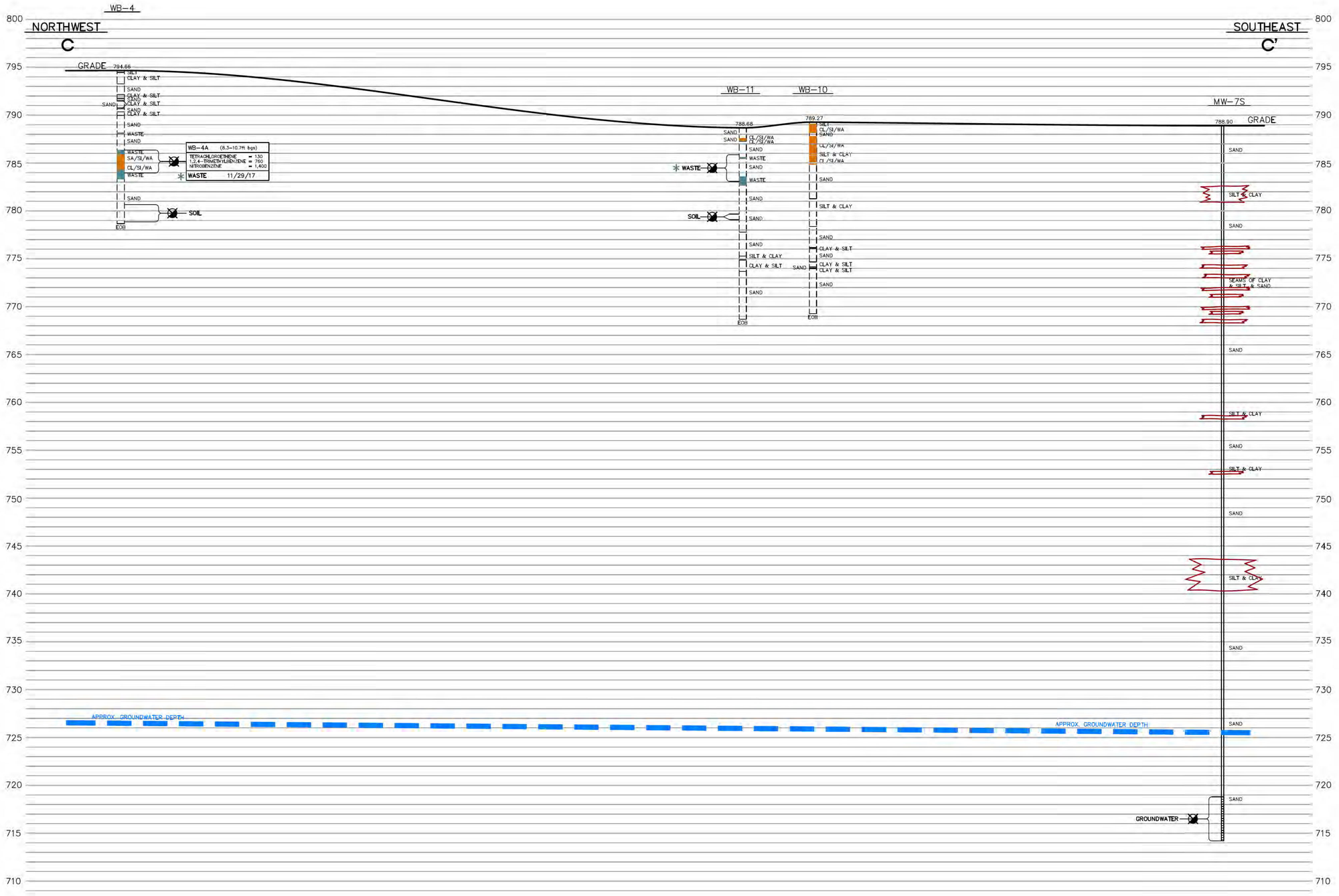
REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

WOLVERINE WORLD WIDE, INC.
FORMER HOUSE STREET SITE
CONCEPTUAL SITE MODEL

ROSE & WESTRA
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Grand Rapids, Michigan
GEOTECHNICAL-ENVIRONMENTAL-GEOLOGICAL-WATER-CONSTRUCTION MANAGEMENT

PROJECT NO.
16.0062335.52

SHEET NO.
E2



LEGEND

= OTHER SOILS (CLAY, SILT, SAND) MIXED WITH WASTE

= WASTE

* = CONSTITUENT CONCENTRATIONS OF THE WASTE SAMPLES WERE COMPARED TO THE MDEQ PART 201 GENERIC SOIL 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)

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ESTIMATED BEDROCK ELEVATION = 560-580

NORTHWEST-SOUTHEAST GEOLOGIC CROSS SECTION C-C'
W/ VOCs & SVOCs DATA

HORIZONTAL SCALE: 1" = 65'
VERTICAL SCALE: 1" = 5'

DRAWN BY KJB | DESIGN BY MAH | DATE 2/4/16

FILE NO.: 62335.52_CSM

NO.	REVISIONS	BY	DATE

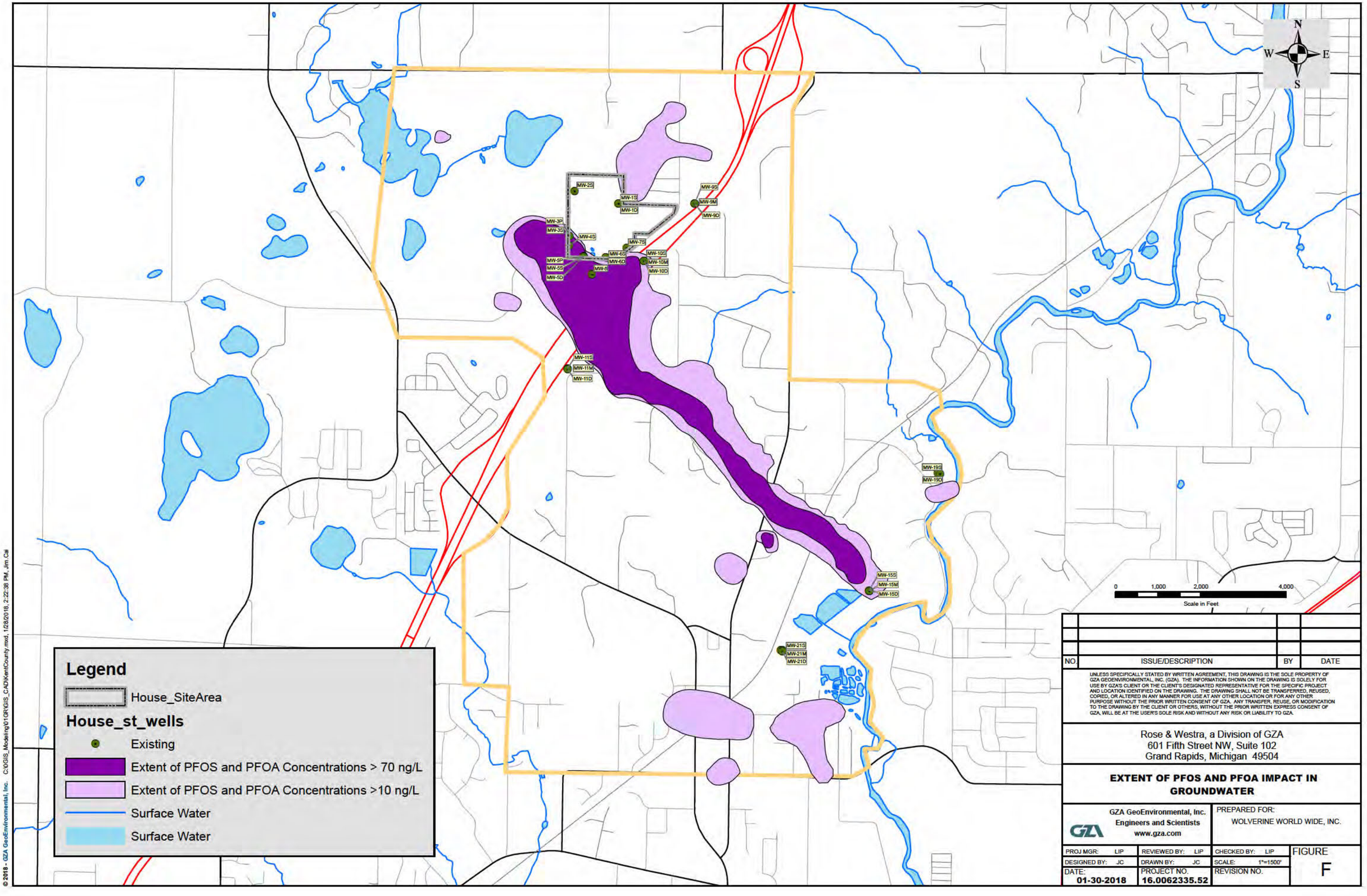
REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

WOLVERINE WORLD WIDE, INC.
FORMER HOUSE STREET SITE
CONCEPTUAL SITE MODEL

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GEOTECHNICAL-ENVIRONMENTAL-ECOLOGICAL-WATER-CONSTRUCTION MANAGEMENT

PROJECT NO.
16.0062335.52

SHEET NO.
E3



NO.	ISSUE/DESCRIPTION	BY	DATE

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601 Fifth Street NW, Suite 102
Grand Rapids, Michigan 49504

EXTENT OF PFOS AND PFOA IMPACT IN GROUNDWATER

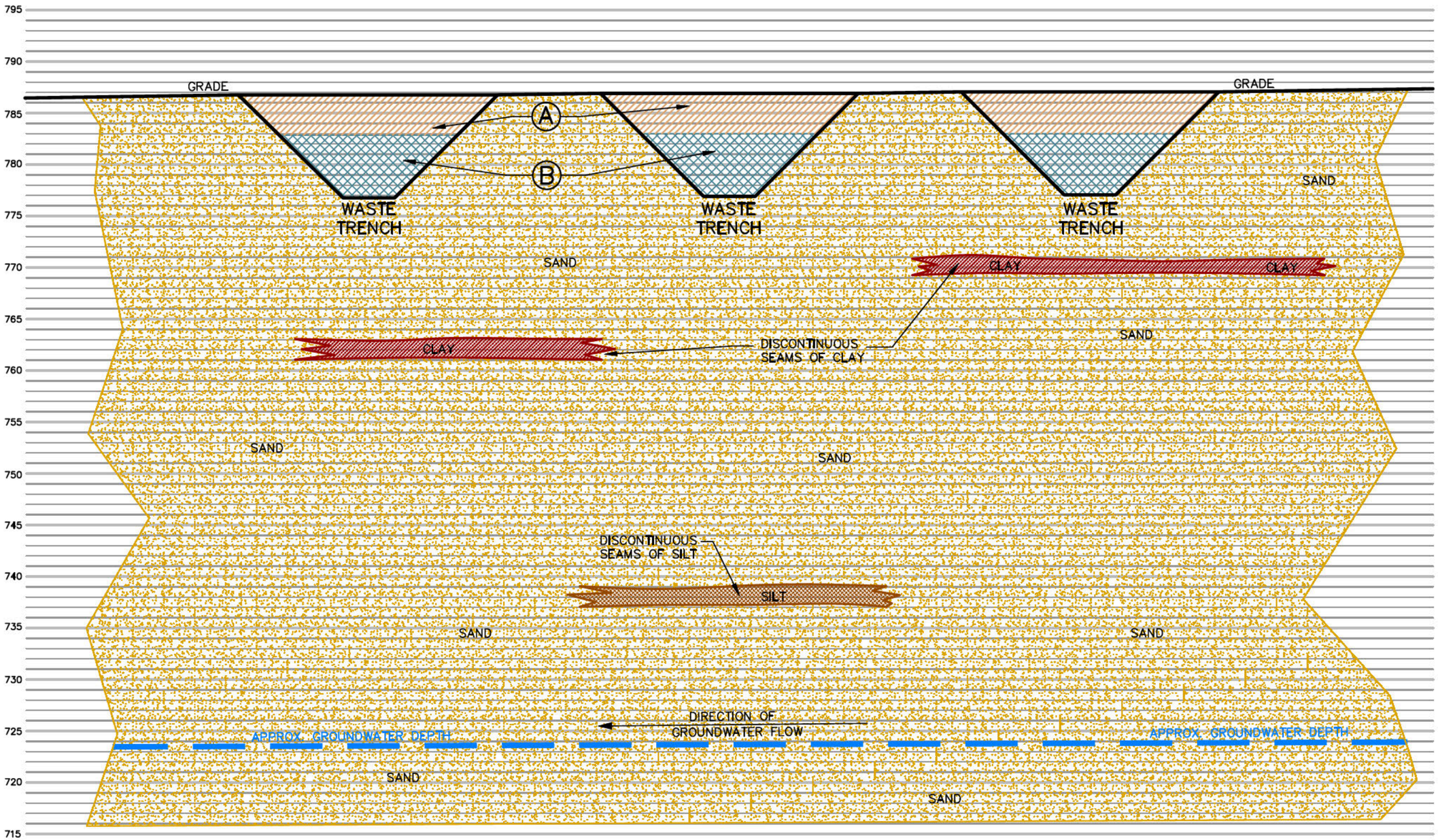
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
WOLVERINE WORLD WIDE, INC.

PROJ MGR: LIP	REVIEWED BY: LIP	CHECKED BY: LIP	FIGURE
DESIGNED BY: JC	DRAWN BY: JC	SCALE: 1"=1500'	F
DATE: 01-30-2018	PROJECT NO. 16.0062335.52	REVISION NO.	

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C:\0GIS_Modeling\01GRGIS_CAD\KentCounty.mxd, 1/28/2018, 2:22:38 PM, Jim.Cai

SOUTH NORTH



ESTIMATED BEDROCK ELEVATION = 560–580

LEGEND

(A) = BACKFILL SOILS OVER TOP OF WASTE (THICKNESS VARIES FROM 3–8ft)

(B) = WASTE (THICKNESS VARIES FROM 0.5–4ft)

SCALE: 1" = 10'

0' 10'

NORTH ORIENTATION

GENERALIZED SECTION OF WASTE TRENCHES - LOOKING WEST

ROSE & WESTRA
A DIVISION OF GZA
Grand Rapids, Michigan
GEOTECHNICAL–ENVIRONMENTAL–ECOLOGICAL
WATER–CONSTRUCTION MANAGEMENT

WOLVERINE WORLD WIDE, INC.
FORMER HOUSE STREET DISPOSAL AREAS
CONCEPTUAL SITE MODEL

CREATED BY: KJB APPROVED BY: MAW DATE: 2/8/18 FILE NAME: 62335_52_CSM_SECT

PROJECT NO. 16.0062335.52

G

FIGURE NO.

APPENDIX A

LIMITATIONS

GEOHYDROLOGICAL LIMITATIONS

Use of Report

1. GZA GeoEnvironmental, Inc. (GZA) prepared this report for the stated purpose(s) and location(s) identified in the proposal and/or report. Use of this report, in whole or in part, at other locations or for other purposes, may lead to inappropriate conclusions; we do not accept any responsibility for the consequences of such use(s). Further, reliance by any party not expressly identified in the agreement, for any use, without our prior written permission, shall be at that party's sole risk, and without any liability to GZA.

Standard of Care

2. GZA's findings and conclusions are based on the work conducted as part of the Scope of Services set forth in the proposal and/or report and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the limited data gathered during the course of our work. Conditions other than described in this report may be found at the subject location(s).

3. GZA's services were performed using the degree of skill and care ordinarily exercised by qualified professionals performing the same type of services, at the same time, under similar conditions, at the same or a similar property. No warranty, expressed or implied, is made. Specifically, GZA does not and cannot represent that the site contains no hazardous material, oil, or other latent condition beyond that observed by GZA during its study. Additionally, GZA makes no warranty that any response action or recommended action will achieve all of its objectives or that the findings of this study will be upheld by a local, state, or federal agency.

4. In conducting our work, GZA relied upon certain information made available by public agencies, Client and/or others. GZA did not attempt to independently verify the accuracy or completeness of that information. Inconsistencies in this information which we have noted, if any, are discussed in the report.

Subsurface Conditions

5. The generalized soil profile(s) provided in our report are based on widely-spaced subsurface explorations and are intended only to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and were based on our assessment of subsurface conditions. The composition of strata and the transitions between strata may be more variable and more complex than indicated. For more specific information on soil conditions at a specific location, refer to the exploration logs.

6. Water level readings have been made in test holes (as described in the report) and monitoring wells at the specified times and under the stated conditions. These data have been reviewed and interpretations have been made in this report. Fluctuations in the level of the groundwater, however, occur due to temporal or spatial variations in areal recharge rates, soil heterogeneities, the presence of subsurface utilities and/or natural or artificially induced perturbations. The observed water table may be other than indicated in the report.

Compliance with Codes and Regulations

7. GZA used reasonable care in identifying and interpreting applicable codes and regulations necessary to execute our scope of work. These codes and regulations are subject to various and possibly contradictory interpretations. Interpretations and compliance with codes and regulations by other parties are beyond our control.

Screening and Analytical Testing

8. GZA collected environmental samples at the locations identified in the report. These samples were analyzed for the specific parameters identified in the report. Additional constituents, for which analyses were not conducted, may be present in soil, groundwater, surface water, sediment and/or air. Future site activities and uses may result in a requirement for additional testing.

9. Our interpretation of field screening and laboratory data is presented in the report. Unless otherwise noted, GZA relied on the laboratory's quality assurance (QA)/quality control (QC) program to validate these data.

10. Variations in the types and concentrations of contaminants observed at a given location or time may occur due to release mechanisms, disposal practices, changes in flow paths, and/or the influence of various physical, chemical, biological or radiological processes. Subsequently observed concentrations may be other than indicated in the report.

Interpretation of Data

11. Our opinions are based on available information, as described in the report, and on our professional judgment. Additional observations made over time and/or space may not support the opinions provided in the report.

Additional Information

12. In the event that Client or others authorized to use this report obtain information on environmental or hazardous waste issues at the site not contained in this report, such information shall be brought to GZA's attention forthwith. GZA will evaluate such information and, on the basis of this evaluation, may modify the conclusions stated in this report.

Additional Services

13. GZA recommends that we be retained to provide services during any future investigations, design, implementation activities, construction and/or property development/redevelopment at the site. This will allow us the opportunity to: i) observe conditions and compliance with our design concepts and opinions; ii) allow for changes in the event that conditions are other than anticipated; iii) provide modifications to our design; and iv) assess the consequences of changes in technologies and/or regulations.

Conceptual Site Model

14. Our opinions were developed, in part, based on a comparison of site data to conditions anticipated within our Conceptual Site Model (CSM). The CSM is based on available information and professional judgment. There are

rarely sufficient data to develop a unique CSM. Therefore, observations over time and/or space may vary from those depicted in the CSM provided in this report. In addition, the CSM should be evaluated and refined (as appropriate) whenever significant new information and/or data is/are obtained.

Risk Characterization

15. Our risk evaluation was performed in accordance with generally accepted practices of appropriate Federal and/or State regulatory agencies, and of other consultants undertaking similar studies at the same time, for similar purposes, and under similar circumstances. The findings of the risk evaluation are dependent on the numerous assumptions and uncertainties inherent in the risk characterization process. Sources of the uncertainty may include site conditions; site use; the nature, extent, concentration and distribution of contaminants; and the available toxicity and/or health/risk-based regulatory information. Consequently, the findings of the risk characterization are not an absolute characterization of actual risks, but rather serve to highlight potential incremental risks associated with activities indicated in the report. Actual risks may be other than indicated in the report.

APPENDIX B

SOIL BORING LOGS

GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
1855 House Street NE
Belmont, Michigan

Boring No.: MW-1S
Page: 1 of 6
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: John Morehouse
Date Start/Finish: 9-5-17 / 9-5-17
Boring Location: 588,630 N, 12,788,700 E
GS Elev.: 788.70' Datum:

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
						See SB-1/MW-1D boring log for detailed soil descriptions.			PROTECTIVE CASING; Backfill/Cement Pad

1 2 3 4 5 6 7 8 9 10 11

REMARKS

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

Boring No.: MW-1S

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
1855 House Street NE
Belmont, Michigan

Boring No.: MW-1S
Page: 2 **of** 6
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

REMARKS

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

Boring No.: MW-1S

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

GZA
GeoEnvironmental, Inc.
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Wolverine World Wide, Inc.
1855 House Street NE
Belmont, Michigan

Boring No.: MW-1S
Page: 3 **of** 6
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
27									
28									
29									
30									
31									
32									Bentonite/Grout
33									
34									
35									
36									
37									
38									
39									

REMARKS

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

Boring No.: MW-1S

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

GZA
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1855 House Street NE
Belmont, Michigan

Boring No.: MW-1S
Page: 4 **of** 6
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									
51									
52									
53									

REMARKS

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

Boring No.: MW-1S

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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1855 House Street NE
Belmont, Michigan

Boring No.: MW-1S
Page: 5 **of** 6
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
55									
56									
57									
58									
59									
60									
61									
62									
63									
64									Bentonite Seal
65									
66									
67									

REMARKS

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

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
1855 House Street NE
Belmont, Michigan

Boring No.: MW-1S
Page: 6 **of** 6
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
69									Top of Well Screen
70									Silica Sand Filter Pack
71									2-Inch Dia. 5-Foot PVC Screen (0.010" Slot)
72									
73									
74									Bottom of Well Screen
75						Bottom of Borehole at 75.0 Feet		1	
76									
77									
78									
79									
80									
81									

REMARKS

1. Monitoring well was installed in borehole upon completion. Well screen set from approximately 68.4 to 73.1 feet below ground surface.

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

Boring No.: MW-1S

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Wolverine World Wide, Inc.
1855 House Street NE
Belmont, Michigan

Boring No.: MW-5P
Page: 1 of 2
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: John Morehouse
Date Start/Finish: 9-19-17 / 9-19-17
Boring Location:
GS Elev.: 778.90' **Datum:**

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
						See SB-5/MW-5S boring log for detailed soil descriptions.			PROTECTIVE CASING; Backfill/Cement Pad; Bentonite/Grout

1
2
3
4
5
6
7
8
9
10
11

REMARKS

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

Boring No.: MW-5P

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Boring No.: MW-5P
Page: 2 of 2
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
13									
14									Bentonite Seal
15									
16									
17									Top of Well Screen
18									
19									Silica Sand Filter Pack
20									2-Inch Dia. 5-Foot PVC Screen (0.010" Slot)
21									
22									Bottom of Well Screen
						Bottom of borehole at 22.3 Feet		1	
23									
24									
25									

REMARKS

1. Monitoring well was installed in borehole upon completion. Well screen set from approximately 17.1 to 21.8 feet below ground surface.

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

Boring No.: MW-5P

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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1855 House Street NE
Belmont, Michigan

Boring No.: SB-1/MW-1D
Page: 1 of 13
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: John Morehouse
Date Start/Finish: 9-5-17 / 9-5-17
Boring Location: 588,635 N, 12,788,700 E
GS Elev.: 788.80' Datum:

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/20	0-2	3-4 4-7		Yellowish-brown to brown, SILT, some fine grained Sand, trace Gravel, poorly sorted, dry (ML).	SILT (ML)		PROTECTIVE CASING; Backfill/Cement Pad
2	2	24/22	2-4	4-5 8-9		Yellowish-brown to brown, SILT, some fine grained Sand, trace Gravel, poorly sorted, dry (ML). Changing at 2.6 feet to: Yellowish-brown, fine to medium SAND, little Silt, moderately sorted, dry (SM). Changing at 2.7 feet to: Mottled dark yellowish-brown to light grayish-brown, SILT, little Clay, little Sand, trace Gravel, poorly sorted, dry (ML).	2.6' 2.7' SAND (SM) SILT (ML)		
3									
4	3	24/24	4-6	8-6 7-7		Yellowish-red to dark brown, medium to fine grained SAND, some Silt, trace Gravel, moderate sorting, dry (SM). Changing at 4.5 feet to: Mottled dark yellowish-brown to light gray, SILT, little Clay, little fine to medium grained Sand, slightly plastic, cohesive, poorly sorted, dry (ML).	4' SAND (SM) 4.5' SILT (ML)		
5									
6	4	24/24	6-8	3-4 5-5		Mottled dark yellowish-brown to light gray, SILT, little Clay, little fine to medium grained Sand, slightly plastic, cohesive, poorly sorted, dry (ML). Changing at 7.1 feet to: Mottled grayish-brown to dark yellowish-brown, CLAY & SILT, plastic, cohesive, moist (CL).	7.1' CLAY & SILT (CL)		
7									
8	5	24	8-10	4-4 3-5		Mottled grayish-brown to dark yellowish-brown, CLAY & SILT, plastic, cohesive, moist (CL).			
9									
10	6	24/20	10-12	2-4 2-2		Mottled grayish-brown to dark yellowish-brown, CLAY & SILT, plastic, cohesive, moist (CL). Changing at 10.4 feet to: Dark gray to dark grayish-brown, fine to medium grained SAND, trace Silt, moderately sorted, moist (SP). Changing at 11.4 feet to: Dark gray to dark grayish-brown, fine to coarse SAND, trace	10.4' SAND (SP) 11.4' SAND (SW) 12'		
11									

REMARKS

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Boring No.: SB-1/MW-1D

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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1855 House Street NE
Belmont, Michigan

Boring No.: SB-1/MW-1D
Page: 2 of 13
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	7	24/24	12-14	5-6 14-16		Gravel, trace Silt, trace Clay, slightly cohesive, poorly sorted, moist to wet (SW). Dark grayish-brown to very dark grayish-brown, CLAY & SILT, trace Gravel, plastic, cohesive, poorly sorted, moist (CL). Changing at 13.6 feet to: Grayish-brown, coarse to medium SAND, trace Gravel, trace Silt, poorly sorted, moist (SP). Changing at 13.7 feet to: Mottled yellowish-brown to light yellowish-brown to dark gray to black, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, poorly sorted, moist (CL). Mottled yellowish-brown to light yellowish-brown to dark gray to black, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, poorly sorted, moist (CL). Changing at 15.0 feet to: Black, fine to coarse grained SAND, trace Gravel, trace Silt, poorly sorted, moist (SW). Changing at 15.1 feet to: Brownish-yellow, SILT, very well sorted, moist to wet (ML). Light yellowish-brown to pale brown, fine grained SAND, trace Silt, very well sorted, moist (SP). Changing at 17.3 feet to: Dark yellowish-brown, fine grained SAND, little Clay, little Silt, slightly to moderately plastic, cohesive, moderately sorted, moist (SC). Light yellowish-brown to pale brown, fine grained SAND, trace Silt, very well sorted, moist (SP). Changing at 19.0 feet to: Yellowish-brown, fine grained SAND, little Clay, little Silt, moderately plastic, cohesive, moderately sorted, moist (SC). Changing at 19.3 feet to: Light yellowish-brown to pale brown, fine grained SAND, trace Silt, very well sorted, moist (SP). Light yellowish-brown to pale brown, fine grained SAND, trace Silt, very well sorted, moist (SP).	CLAY & SILT (CL)		
13									
	8	24/24	14-16	4-12 7-7			13.6' SAND (SP)		
14							13.7' CLAY & SILT (CL)		
15							15' 15.1' SAND (SW)		
	9	24/18	16-18	3-3 5-6			SILT (ML) 16' SAND (SP)		
16									
17							17.3' SAND (SM)		
	10	24/20	18-20	2-4 7-9			18' SAND (SP)		
18									
19							19' 19.3' SAND (SM) SAND (SP)		
	11	24/17	20-22	3-6 7-10					
20									
21									
	12	24/18	22-24	3-5 6-9		Light yellowish-brown to pale brown, fine grained SAND, trace Silt, very well sorted, moist (SP).			
22									
23									
	13	24/23	24-26	5-9 10-14		Light yellowish-brown to pale brown, fine grained SAND, trace Silt, very well sorted, moist (SP). Changing at 25.5 feet to: Yellowish-brown, SILT & CLAY, little Silt, slightly plastic, cohesive, well sorted, moist (CL).			
24									
25							25.5' CLAY & SILT (CL) 26'		

REMARKS

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BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

GZA GeoEnvironmental, Inc.
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1855 House Street NE
Belmont, Michigan

Boring No.: SB-1/MW-1D
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File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
27	14	24/24	26-28	6-8 13-13		Light yellowish-brown to pale brown, fine grained SAND, trace Silt, very well sorted, moist (SP). Changing at 26.3 feet to: Yellowish-brown, SILT & CLAY, little Silt, slightly plastic, cohesive, well sorted, moist (CL). Changing at 27.7 feet to: Light yellowish-brown to pale brown, fine grained SAND, trace Silt, very well sorted, moist (SP).	26.3' SAND (SP) CLAY & SILT (CL) 27.7'		
28	15	24/23	28-30	4-10 8-13		Yellowish-brown, CLAY & SILT, little Sand, slightly plastic, cohesive, well sorted, moist (CL). Changing at 28.9 feet to: Light yellowish-brown to pale brown, fine grained SAND, trace Silt, very well sorted, moist (SP). Changing at 29.1 feet: Yellowish-brown, CLAY & SILT, little Sand, slightly plastic, cohesive, well sorted, moist (CL). Changing at 29.3 feet to: Yellowish-brown, SILT, cohesive, well sorted, moist (ML). Changing at 29.9 feet to: Yellowish-brown, CLAY & SILT, little Sand, slightly plastic, cohesive, well sorted, moist (CL).	28' SAND (SP) CLAY & SILT (CL) 28.9' 29.1' SAND (SP) 29.3' CLAY & SILT (CL) SILT (ML) 29.9' CLAY & SILT (CL)		
30	16	24/22	30-32	9-12 16-15					
32	17	24/22	32-34	4-10 8-13		Yellowish-brown, CLAY & SILT, little Sand, slightly plastic, cohesive, well sorted, moist (CL). Changing at 30.6 feet to: Light yellowish-brown to pale brown, fine grained SAND, trace Silt, very well sorted, moist (SP). Changing at 31.0 feet to: Yellowish-brown, CLAY & SILT, little Silt, slightly plastic, cohesive, well sorted, moist (CL).	30.6' SAND (SP) 31' CLAY & SILT (CL) 32.5' SAND (SP)		
34	18	24/23	34-36	7-13 20-25		Yellowish-brown, CLAY & SILT, little Silt, slightly plastic, cohesive, well sorted, moist (CL). Changing at 32.5 feet to: Light gray to light brownish-gray, fine grained SAND, trace Silt, very well sorted, moist (SP).			
36	19	24/20	36-38	4-11 18-26		Light gray to light brownish-gray, fine grained SAND, trace Silt, very well sorted, moist (SP). Changing 37.1 feet to: Light gray, fine to medium SAND, trace Silt, well sorted, moist (SP).			
38	20	24/23	38-40	4-7 12-15		Very pale brown to light yellowish-brown, SILT, little Clay, slightly plastic, coheisve, well sorted, moist (ML). Changingn at 38.2 feet to: Yellowish-brown, CLAY & SILT, plastic, cohesive, moderately well sorted, moist (CL). Changing at 38.4 feet to: Very pale, brown to light yellowish-brown, SILT, little Clay, slightly plastic, cohesive,	38' 38.2' SILT (ML) 38.4' CLAY & SILT (CL) 38.7' SILT (ML) 38.9' CLAY & SILT (CL) SILT (ML) 40'		

REMARKS

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BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	21	24/20	40-42	5-10 14-14		moderately well sorted, moist (ML). Changing at 38.7 feet to: Yellowish-brown, CLAY & SILT, plastic, cohesive, moderately well sorted, moist (CL). Changing at 38.9 feet to: Very pale brown to light yellowish-brown, SILT, little Clay, slightly plastic, cohesive, well sorted, moist (ML). Light yellowish-brown, CLAY & SILT, slight plastic, cohesive, very well sorted, moist (CL). Changing at 40.2 feet to: Very pale brown to yellowish-brown, SILT, little Clay, slightly plastic, coheisive, well sorted, moist (ML). Changing at 40.5 feet to: Light yellowish-brown, CLAY & SILT, slight plastic, cohesive, very well sorted, moist (CL). Changing at 41.0 feet to: Very pale brown, fine grained SAND, trace Silt, very well sorted, moist (SP).	40.2' CLAY & SILT (CL) 40.5' SILT (ML) CLAY & SILT (CL) 41' SAND (SP)		
41									
42	22	24/18	42-44	5-5 11-13			42.2' 42.4' SILT (ML) SAND (SP)		
43									
44	23	24/20	44-46	10-10 15-22		Very pale brown, fine grained SAND, trace Silt, very well sorted, moist (SP). Changing at 42.2 feet to: Light yellowish-brown, SILT, trace Clay, slightly plastic, cohesive, well sorted, moist (ML).Changing at 42.4 feet to: Very pale, brown, fine grained SAND, trace Silt, very well sorted, moist (SP).			
45							45.3' 45.6' CLAY (CL) SAND (SP)		
46	24	24/20	46-48	4-13 16-21		Very pale, brown, fine grained SAND, trace Silt, very well sorted, moist (SP). Changing at 45.3 feet to: Brown to yellowish-brown, CLAY & SILT, plastic, cohesive, very well sorted, moist (CL). Changing at 45.6 feet to: Very pale brown, fine grained SAND, trace Silt, very well sorted, moist (SP).			
47									
48	25	24/17	48-50	5-12 23-28		Very pale brown, fine grained SAND, trace Silt, very well sorted, moist (SP). Very pale brown, fine grained SAND, trace Silt, very well sorted, moist (SP).			
49									
50	26	24/20	50-52	4-6 15-17		Very pale brown, fine grained SAND, trace Silt, very well sorted, moist (SP). Changing at 51.2 feet to: Yellowish-brown, SILT, trace Clay, cohesive, non to slightly plastic, very well sorted (bedded), moist (ML).Changing at 51.7 feet to: Very pale brown, fine grained SAND, trace Silt, very well sorted, moist, with occasional very thin Silt seams (SP).			
51							51.2' SILT (ML) 51.7' SAND (SP)		
52	27	24/16	52-54	7-12 16-21		Very pale brown, fine grained SAND, trace Silt, very well sorted, moist, with occasional very thin Silt seams (SP).			
53									

REMARKS

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BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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1855 House Street NE
Belmont, Michigan

Boring No.: SB-1/MW-1D
Page: 5 of 13
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
55	28	24/20	54-56	5-11 17-26		Very pale brown, fine grained SAND, trace Silt, very well sorted, moist, with occasional very thin Silt seams (SP). Changing at 54.2 feet to: Very pale brown, fine grained SAND, little Silt, very well sorted, moist (SP).	54.2' SAND (SM)		
56	29	24/23	56-58	4-9 16-20		Light yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, moist (SP). Changing at 56.3 feet to: Very pale brown, fine grained SAND, little Silt, very well sorted, moist (SM).	56' 56.3' SAND (SP) SAND (SM)		
58	30	24/24	58-60	9-13 18-24		Very pale brown, fine grained SAND, little Silt, very well sorted, moist (SM). Changing at 59.0 feet to: Brown, fine grained SAND, some Silt, very well sorted, moist to wet (SM).			
60	31	24/22	60-62	11-13 22-28		Brown, fine grained SAND, little Silt, non plastic, moderately cohesive, very well sorted, moist (SP).			
62	32	24/22	62-64	6-6 11-14		Brown, fine grained SAND, little Silt, non plastic, moderately cohesive, very well sorted, moist (SM). Changing at 62.7 feet to: Brown, fine to medium grained SAND, trace Silt, grading fine with depth, well sorted, damp (SP). Changing at 63.0 feet to: Brown, fine grained SAND, trace Silt, very well sorted, damp (SP).	62.7' 63' SAND (SP) SAND (SM)		
64	33	24/20	64-66	11-3 6-11		Brown, fine to medium grained SAND, trace Silt, grading fine with depth, well sorted, damp (SP). Changing at 65.0 feet to: Brown, fine grained SAND, some Silt, very well sorted, damp (SM). Changing at 65.1 feet to: Brown, fine to medium grained SAND, trace Silt, grading fine with depth, well sorted, wet (SP). Changing at 65.6 feet to: Brown, CLAY & SILT, plastic, cohesive, well sorted, moist (CL).	64' SAND (SP) 65' 65.1' SAND (SM) SAND (SP) 65.6' CLAY & SILT (CL)		
66	34	24/24	66-68	5-11 12-14		Brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP). Changing at 67.0 feet to: Yellowish-brown, fine to medium grained SAND, little Silt, very well sorted wet (SP).	66' SAND (SP) 67' SAND (SM)		

REMARKS

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BORING_WELL_6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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1855 House Street NE
Belmont, Michigan

Boring No.: SB-1/MW-1D
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File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	35	24/13	68-70	2-4 7-13		Yellowish-brown, fine to medium grained SAND, little Silt, very well sorted wet (SP).	SAND (SM)		
69									
70	36	24/18	70-72	2-6 12-16		Yellowish-brown, fine to medium grained SAND, little Silt, very well sorted wet (SP).			
71									
72	37	24/23	72-74	3-3 5-9		Brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP). Changing at 73.1 feet to: Brown, CLAY & SILT, slightly plastic, moderately cohesive, well sorted, moist to wet (CL).	72' SAND (SP) 73.1' CLAY & SILT (CL)		
73									
74	38	24/20	74-76	2-1 2-2		Brown, CLAY & SILT, slightly plastic, moderately cohesive, well sorted, moist to wet (CL).			
75									
76	39	24/19	76-78	2-5 8-11		Brown, CLAY & SILT, slightly plastic, moderately cohesive, well sorted, moist to wet (CL).			
77									
78	40	24/23	78-80	2-4 5-10		Brown, CLAY & SILT, slightly plastic, moderately cohesive, well sorted, moist to wet (CL). Changing at 79.3 feet to: Yellowish-brown, CLAY & SILT, plastic, cohesive, well sorted, moist (CL). Changing at 79.4 feet to: Yellowish-brown, medium to coarse grained SAND, trace Silt, moderately well sorted, wet (SW).			
79							79.4' SAND (SW)		
80	41	24/22	80-82	2-4 6-7		Yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).	80' SAND (SP)		
81									
							82'		

REMARKS

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Boring No.: SB-1/MW-1D

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Belmont, Michigan

Boring No.: SB-1/MW-1D
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File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	42	24/24	82-84	2-5 11-12		Yellowish-brown, medium to coarse grained SAND, trace Silt, well sorted, wet (SW). Changing at 82.4 feet to: Yellowish-brown, medium to coarse grained SAND, trace Silt, poorly sorted, wet (SW). Changing at 83.2 feet to: Yellowish-brown to gray, GRAVEL, some coarse grained Sand, trace Silt, poorly sorted, wet (GW). Changing at 83.4 feet to: Yellowish-brown, CLAY & SILT, plastic, coheisve, well sorted, moist (CL). Changing at 83.5 feet to: Yellowish-brown to gray, GRAVEL, some coarse grained Sand, trace Silt, poorly sorted, wet (GW). Changing at 83.7 feet to: Yellowish-brown, fine to medium SAND, trace Silt, trace Gravel, well sorted, wet (SP).	SAND (SW) 82.4' SAND (SW) 83.4' 83.5' CLAY & SILT (CL) 83.7' GRAVEL (GW) SAND (SP) 84.7' GRAVEL (GW) 85.2' SAND (SP)		
83									
84	43	24/23	84-86	3-6 11-14					Grout
85									
86	44	24/24	86-88	3-4 9-15		Yellowish-brown, fine to medium SAND, trace Silt, trace Gravel, well sorted, wet (SP). Changing at 84.7 feet to: Yellowish-brown to gray, GRAVEL, some coarse to medium grained Sand, trace Silt, poorly sorted, wet (GW). Changing at 85.2 feet to: Yellowish-brown, fine grained SAND, trace Silt, very well sorted, wet (SP).			
87							87.2' SAND (SW)		
88	45	24/16	88-90	3-5 8-12		Yellowish-brown, fine grained SAND, trace Silt, very well sorted, wet (SP). Changing at 87.2 feet to: Yellowish-brown, coarse grained SAND, some Gravel, trace Silt, very well sorted, wet (SW).			
89						Yellowish-brown, medium to coarse grained SAND, some Gravel, trace Silt, poorly sorted wet (SW).			
90	46	24/22	90-92	3-4 7-11		Yellowish-brown, fine to medium SAND, trace Silt, moderately sorted, wet (SP). Changing at 91.6 feet to: Dark grayish-brown, CLAY & SILT, plastic, cohesive, well sorted, moist (CL). Changing at 91.7 feet to: Yellowish-brown, medium to coarse grained SAND, trace Silt, trace Gravel, grading finer with depth, well sorted, wet (SW).	90' SAND (SP) 91.6' 91.7' CLAY & SILT (CL) SAND (SW)		
91									
92	47	24/1	92-94	5-7 12-13		Yellowish-brown, medium to coarse grained SAND, trace Silt, trace Gravel, grading finer with depth, well sorted, wet (SW).		1	
93									
94	48	24/4	94-96	5-7 9-10		Yellowish-brown, medium to coarse grained SAND, trace Silt, trace Gravel, grading finer with depth, well sorted, wet (SW).			
95									

REMARKS

1. Groundwater was encountered at approximately 91.7 feet below ground surface.

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

Boring No.: SB-1/MW-1D

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
97	49	24/8	96-98	2-3 6-12		Yellowish-brown, medium to coarse grained SAND, trace Silt, trace Gravel, grading finer with depth, well sorted, wet (SW).	SAND (SW)		
98	50	24/11	98-100	2-3 10-12		Yellowish-brown, medium to coarse grained SAND, trace Silt, trace Gravel, grading finer with depth, well sorted, wet (SW).			
99									
100	51	24/23	100-102	3-4 9-13		Yellowish-brown, medium to coarse grained SAND, trace Silt, trace Gravel, grading finer with depth, well sorted, wet (SW). Changing at 101.8 feet to: Dark yellowish-brown to yellowish-brown, CLAY & SILT, moderately plastic, cohesive, well sorted, moist (CL).			
101							101.8'		
102	52	24/11	102-104	1-1 3-9		Yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).	102' CLAY & SILT (CL) SAND (SP)		
103									
104	53	24/11	104-106	4-4 15-26		Yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).			
105									
106	54	24/11	106-108	1-5 15-30		Yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).			
107									
108	55	24/10	108-110	4-9 25-32		Yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).			
109									

REMARKS

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Boring No.: SB-1/MW-1D

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	56	24/10	110-112	4-9 20-31		Yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).	SAND (SP)		
111									
112	57	24/8	112-114	2-5 14-27		Yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).			
113									
114	58	24/11	114-116	2-4 10-28		Yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).			
115									
116	59	24/14	116-118	4-10 25-40		Yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).			
117									
118	60	24/10	118-120	3-7 21-25		Yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).			
119									
120	61	24/16	120-122	4-7 14-31		Yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).			
121									
122	62	24/14	122-124	3-6 22-32		Yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).			
123									

REMARKS

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	63	24/19	124-126	5-13 29-45		Yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).	SAND (SP)		
125									
126	64	24/1	126-128	1-5 18-34		Yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).			
127									
128	65	24/24	128-130	6-18 34-48		Yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).			
129									
130	66	24/23	130-132	5-10 28-46		Yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP). Changing at 131.5 feet to: Yellowish-brown, medium to coarse grained SAND, trace Silt, moderately sorted, wet (SW). Changing at 131.7 feet to: Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).			
131									
132	67	24/23	132-134	5-15 30-45		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).			
133									
134	68	24/24	134-136	3-5 21-31		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).			
135									
136	69	24/11	136-138	6-16 29-43		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).			
137									

REMARKS

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
139	70	24/6	138-140	2-3 13-33		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).	SAND (SP)		
140	71	24/11	140-142	2-4 9-27		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).			
142	72	24/14	142-144	3-10 25-42		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).			
144	73	24/20	144-146	9-25-50/5"		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).			
146	74	24/18	146-148	6-27 52-53		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).			
148	75	24/12	148-150	9-34 48-50/3"		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).			
150	76	24/0	150-152	6-11 26-29		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).			
151									

REMARKS

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
153	77	24/24	152-154	2-8 26-31		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).	SAND (SP)		
154	78	24/20	154-156	5-12 28-43		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).			
156	79	24/1	156-158	3-6 18-21		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).			
158	80	24/24	158-160	7-8 19-25		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).			
160	81	24/7	160-162	3-10 21-29		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).			
162	82	24/0	162-164	4-11 25-32		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).			
164	83	24/6	164-166	1-14 34-45		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).			
165									

REMARKS

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Boring No.: SB-1/MW-1D

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
167	84	24/24	166-168	9-29 51-50/3"		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).	SAND (SP)		
168	85	24/13	168-170	3-6 18-34		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).			
169									
170	86	24/1	170-172	5-6 19-44		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).			Top of Well Screen
171									Silica Sand Filter Pack
172	87	24/16	172-174	2-4 7-14		Yellowish-brown, fine to medium grained SAND, little Silt, trace Gravel, well sorted, wet (SP).	172' SAND (SM)		
173									2-Inch Dia. 5-Foot PVC Screen (0.010" Slot)
174	88	24/24	174-176	8-13 21-23		Yellowish-brown, fine to medium grained SAND, little Silt, very well sorted, wet (SP). Changing at 174.7 feet to: Yellowish-brown, SILT, trace Clay, non plastic, cohesive, very well sorted (bedded), moist (ML). Changing at 175.5 feet to: Yellowish-brown, SILT, trace Clay, moderately plastic, cohesive, very well sorted (bedded), wet (ML).	174.7' SILT (ML) 176'		
175									Bottom of Well Screen
176						Bottom of Borehole at 176.0 Feet		2	
177									
178									
179									

REMARKS

2. Monitoring well was installed in borehole upon completion. Well screen set from approximately 170.1 to 174.7 feet below ground surface.

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Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: John Morehouse
Date Start/Finish: 9-11-17 / 9-11-17
Boring Location:
GS Elev.: 797.60' Datum:

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

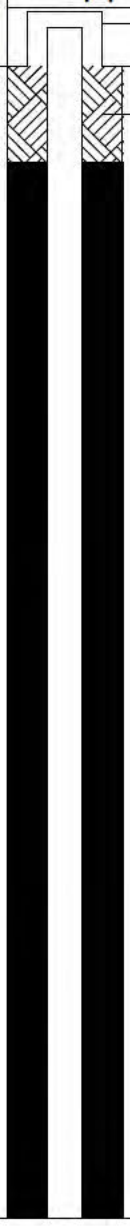
GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks
1	1	24/18	0-2	7-8 8-10		Dark brown to yellowish-brown, SILT & CLAY, some Sand, plastic, cohesive, poorly sorted, moist (CL).	CLAY & SILT (CL)	
2	2	24/23	2-4	8-8 9-9		Dark brown to yellowish-brown, SILT & CLAY, some Sand, plastic, cohesive, poorly sorted, moist (CL).		
4	3	24/22	4-6	5-6 7-7		Dark brown to yellowish-brown, CLAY & SILT, some Sand, plastic, cohesive, poorly sorted, moist (CL). Changing at 4.6 feet to: Brown to grayish-brown, SILT, some fine grained Sand, trace Clay, non to slightly plastic, slightly cohesive, moderately sorted moist (ML). Changing at 5.1 feet to: Yellowish-brown to brown, CLAY & SILT, some Sand, moderately plstic, cohesive, moderately sorted, moist (CL).	4.6' SILT (ML) 5.1' CLAY & SILT (CL)	
6	4	24/22	6-8	4-5 5-6		Yellowish-brown to brown, CLAY & SILT, some Sand, moderately plstic, cohesive, moderately sorted, moist (CL).		
8	5	24/17	8-10	2-4 6-6		Yellowish-brown to brown, CLAY & SILT, some Sand, moderately plastic, cohesive, moderately sorted, moist (CL). Changing at 9.0 feet to: Dark yellowish-brown, fine to medium SAND, trace Silt, moderately sorted moist (SP).	9' SAND (SP)	
10	6	24/17	10-12	3-4 4-4		Mottled dark yellowish-red to dark reddish-brown to dark brown to dark grayish-brown, SILT, some fine grained SAND, moderately sorted, moist (ML). Changing at 10.5 feet to: Yellowish-brown to pale brown, fine to medium SAND, trace Silt, well sorted, moist (SP).	10' SILT (ML) 10.5' SAND (SP)	

Equipment Installed



REMARKS

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Boring No.: SB-2/MW-2S

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
13	7	24/17	12-14	2-2 3-4		Yellowish-brown to pale brown, fine to medium SAND, trace Silt, well sorted, moist (SP).	SAND (SP)		
14	8	24/22	14-16	2-2 3-5		Yellowish-brown to pale brown, fine to medium SAND, trace Silt, well sorted, moist (SP). Changing at 15.2 feet to: Soft, Dark brown, CLAY & SILT, plastic, cohesive, moderately sorted, moist (CL). Changing at 15.3 feet to: Yellowish-brown to pale brown, fine to medium grained SAND, trace Silt, well sorted, moist (SP).	15.2' 15.3' CLAY & SILT (CL) SAND (SP)		
16	9	24/24	16-18	4-5 6-6		Yellowish-brown to pale brown, fine to medium grained SAND, trace Silt, well sorted, moist (SP). Changing at 16.6 feet to: Yellowish-brown, CLAY & SILT, plastic, cohesive, moderately sorted, moist (CL).	16.6' CLAY & SILT (CL)		
18	10	24/14	18-20	4-5 8-10		Yellowish-brown, CLAY & SILT, plastic, cohesive, moderately sorted, moist (CL). Changing at 18.6 feet to: Yellowish-brown, fie to coarse grained SAND, some Gravel, trace Silt, poorly sorted, moist SW). Changing at 19.0 feet to: Yellowish-brown, CLAY & SILT, plastic, cohesive, moderately sorted, moist (CL). Changing at 19.3 feet to: Yellowish-brown, fine grained SAND, some Silt, non plastic, moderately cohesive, well sorted, moist (SM).	18.6' SAND (SW) 19' 19.3' CLAY & SILT (CL) SAND (SM)		
20	11	24/24	20-22	4-5 8-10		Dark yellowish-brown to yellowish-brown, SILT & CLAY, moderately plastic, cohesive, well sorted, moist (CL). Changing at 21.7 feet to: Light gray to light brownish-gray, fine grained SAND, trace Silt, very well sorted, moist (SP).	20' CLAY & SILT (CL) 21.7' 22' SAND (SP)		
22	12	24/16	22-24	2-3 5-6		Dark yellowish-brown to yellowish-brown, SILT & CLAY, moderately plastic, cohesive, well sorted, moist (CL). Changing at 22.4 feet to: Light yellowish-brown to pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).	CLAY & SILT 22.4' (CL) SAND (SP)		
24	13	24/16	24-26	4-6 6-6		Light yellowish-brown to pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).			

REMARKS

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
27	14	24/20	26-28	4-5 6-6		Light yellowish-brown to pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).	SAND (SP)		
28	15	24/18	28-30	6-7 12-12		Light yellowish-brown to pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).			
29									
30	16	24/22	30-32	7-9 11-13		Light yellowish-brown to pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP). Changing at 31.7 feet to: Light yellowish-brown, fine to medium grained SAND, trace Gravel, trace Silt, moderately well sorted, moist (SP).			
31									
32	17	24/18	32-34	7-7 7-8		Light yellowish-brown to yellowish-brown, fine grained SAND, trace Silt, very well sorted, moist (SP). Changing at 32.2 feet to: Pale brown to very pale brown, fine to coarse grained SAND, some Gravel, trace Silt, poorly sorted, moist (SW).	32.2' SAND (SW)		
33									
34	18	24/20	34-36	13-38 31-18		Pale brown, fine to coarse grained SAND, some Gravel, trace Silt, poorly sorted, moist (SW).			
35									
36	19	24/20	36-38	2-4 7-8		Very pale brown, fine grained SAND, trace Silt, very well sorted, moist with occasional trace Gravel, moist (SP).	36' SAND (SP)		
37									Grout
38	20	24/19	38-40	2-3 6-7		Very pale brown, fine grained SAND, trace Silt, very well sorted, moist with occasional trace Gravel, moist (SP).			
39									

REMARKS

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
41	21	24/20	40-42	5-7 9-13		Very pale brown, fine grained SAND, trace Silt, very well sorted, moist with occasional trace Gravel, moist (SP).	SAND (SP)		
42	22	24/19	42-44	4-6 9-11		Very pale brown, fine grained SAND, trace Silt, very well sorted, moist with occasional trace Gravel, moist (SP).			
43									
44	23	24/22	44-46	5-8 10-13		Very pale brown, fine grained SAND, trace Silt, very well sorted, moist with occasional trace Gravel, moist (SP).			
45									
46	24	24/22	46-48	3-5 8-13		Very pale brown, fine grained SAND, trace Silt, very well sorted, moist with occasional trace Gravel, moist (SP).			
47									
48	25	24/23	48-50	5-7 9-10		Very pale brown, fine grained SAND, trace Silt, very well sorted, moist with occasional trace Gravel, moist (SP).			
49									
50	26	24/22	50-52	6-7 12-13		Very pale brown, fine grained SAND, trace Silt, very well sorted, moist with occasional trace Gravel, moist (SP).			
51									
52	27	24/20	52-54	5-9 11-13		Very pale brown, fine grained SAND, trace Silt, very well sorted, moist with occasional trace Gravel, moist (SP). Changing at 52.8 feet to: Yellowish-brown, CLAY & SILT, well sorted, moist (CL). Changing at 52.9 feet to: Very pale brown, fine grained SAND, trace Silt, very well sorted, moist (SP).	52.8' 52.9' CLAY & SILT (CL) SAND (SP) 54'		
53									

REMARKS

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
55	28	24/22	54-56	5-9 13-13		Yellowish-brown, fine to coarse grained SAND, trace Gravel, trace Silt, poorly sorted, moist (SW). Changing at 55.0 feet to: Very pale brown grading to yellowish-brown, fine grained SAND, little Silt, grading to fine to medium grained Sand, trace Silt, very well sorted, moist with occasional trace Gravel, moist (SP).	SAND (SW) 55' SAND (SM)		
56	29	24/22	56-58	3-5 11-14		Very pale brown grading to yellowish-brown, fine grained SAND, little Silt, trace Silt, very well sorted, moist with occasional trace Gravel, moist (SP).			
58	30	24/20	58-60	8-12 15-20		Very pale brown grading to yellowish-brown, fine grained SAND, little Silt, trace Silt, very well sorted, moist with occasional trace Gravel, moist (SP).			
60	31	24/20	60-62	5-9 10-11		Very pale brown grading to yellowish-brown, fine grained SAND, little Silt, trace Silt, very well sorted, moist with occasional trace Gravel, moist (SP).			
62	32	24/22	62-64	8-11 14-15		Very pale brown grading to yellowish-brown, fine grained SAND, little Silt, trace Silt, very well sorted, moist with occasional trace Gravel, moist (SP).			
64	33	24/18	64-66	2-4 8-14		Very pale brown grading to yellowish-brown, fine grained SAND, little Silt, trace Silt, very well sorted, moist with occasional trace Gravel, moist (SP).			
66	34	24/18	66-68	6-14 17-18		Very pale brown grading to yellowish-brown, fine grained SAND, little Silt, trace Silt, very well sorted, moist with occasional trace Gravel, moist (SP).			

REMARKS

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

Boring No.: SB-2/MW-2S

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
1855 House Street NE
Belmont, Michigan

Boring No.: SB-2/MW-2S
Page: 6 of 7
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	35	24/18	68-70	5-14 19-24		Very pale brown grading to yellowish-brown, fine grained SAND, little Silt, trace Silt, very well sorted, moist with occasional trace Gravel, moist (SP). Changing at 69.3 feet to: Light yellowish-brown, fine to coarse grained SAND, trace Silt, moderately sorted, moist (SW). Changing at 69.4 feet to: Very pale brown grading to yellowish-brown, fine grained SAND, little Silt, grading to fine to medium grained Sand, trace Silt, very well sorted, moist with occasional trace Gravel, moist (SP).	SAND (SM)		
69							69.3'		
							69.4' SAND (SW)		
70	36	24/16	70-72	4-10 17-19			SAND (SP)		
71						Very pale brown grading to yellowish-brown, fine grained SAND, little Silt, grading to fine to medium grained Sand, trace Silt, very well sorted, moist with occasional trace Gravel, moist (SP).			
72	37	24/18	72-74	6-14 24-23		Brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).			
73									
74	38	24/23	74-76	2-3 5-10		Brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP). Changing at 75.5 feet to: Brown, fine to coarse grained SAND, trace Silt, trace Gravel, poorly sorted, wet (SW).			
75							75.5' SAND (SW)		
76	39	24/18	76-78	2-8 14-20		Brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).			
77									
78	40	24/18	78-80	3-7 10-18		Brown, fine to coarse grained SAND, trace Silt, trace Gravel, poorly sorted, wet (SW).			Top of Well Screen Silica Sand Filter Pack
79									
80	41	24/18	80-82	3-9 9-19		Brown, fine to coarse grained SAND, trace Silt, trace Gravel, poorly sorted, wet (SW). Changing at 80.7 feet to: Brown, fine to medium SAND, trace Silt, trace Gravel, moderately well sorted, wet (SW).			
81							80.7' SAND (SP)		2-Inch Dia. 5-Foot PVC Screen (0.010" Slot)
							82'		

REMARKS

1. Groundwater was not encountered during drilling or upon completion.
2. Monitoring well was installed in borehole upon completion. Well screen set from approximately 78.5 to 83.1 feet below ground surface.

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

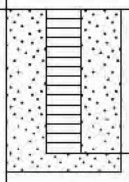
Boring No.: SB-2/MW-2S

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Boring No.: SB-2/MW-2S
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File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
83						Bottom of Borehole at 82.0 Feet		1 2	 Bottom of Well Screen
84									
85									
86									
87									
88									
89									
90									
91									
92									
93									
94									
95									

REMARKS

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

Boring No.: SB-2/MW-2S

BORING_WELL 623550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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1855 House Street NE
Belmont, Michigan

Boring No.: SB-3/MW-3S
Page: 1 of 6
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: John Morehouse
Date Start/Finish: 9-12-17 / 9-12-17
Boring Location:
GS Elev.: 788.10' Datum:

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

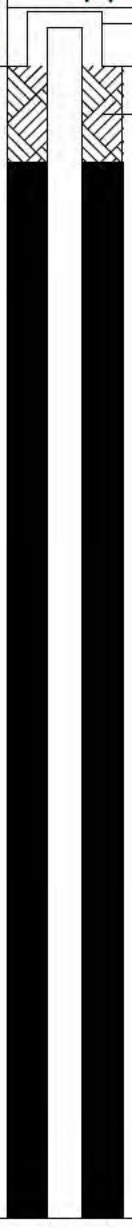
GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks
1	1	24/21	0-2	5-6 6-7	0.0 ppm >4.0 tsf	Hard, brown, CLAY, trace Silt, trace fine Sand, dry (CL).	CLAY (CL)	1 2
2	2	24/21	2-4	7-5 5-4	0.0 ppm	Loose, dark brown, yellowish brown, fine SAND, trace Silt, damp (SP).	2' SAND (SP)	
4	3	24/14	4-6	3-2 2-3	0.0 ppm	Loose, dark yellowish brown, fine SAND, trace Silt, damp (SP) Changing at 5.2 feet to: Loose, dark yellowish-brown, fine SAND, little Gravel, trace Silt, damp (SP).		
6	4	24/21	6-8	2-5 5-5		Loose, yellowish-brown, well sorted, fine SAND, damp (SP). Changing at 7.8 feet to: Loose, pale brown, fine SAND, damp (SP).		
8	5	24/21	8-10	1-4 5-7		Loose, pale brown, well sorted, fine SAND, trace Silt, damp (SP).		
10	6	24/20	10-12	4-5 6-7		Loose, pale brown, well sorted, fine SAND, trace Silt, damp (SP).		

Equipment Installed



REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.0 ppm.
2. Pocket penetrometer readings were measured in tons per square foot (tsf) and are used to evaluate consistency of cohesive soil.

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

Boring No.: SB-3/MW-3S

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Boring No.: SB-3/MW-3S
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File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	7	24/20	12-14	3-5 5-5		Loose, pale brown, well sorted, fine SAND, trace Silt, damp (SP).	SAND (SP)		
13									
14	8	24/20	14-16	4-5 5-5		Loose, pale brown, well sorted, fine SAND, trace Silt, damp (SP).			
15									
16	9	24/24	16-18	2-5 9-10	>4.0 tsf	Loose, pale brown, well sorted, fine SAND, trace Silt, damp (SP). Changing at 16.2 feet to: Hard, brown, CLAY, trace Silt, damp (CL). Changing at 17.8 feet to: Medium dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).	16.2' CLAY (CL) 17.8' SAND (SP)		
17									
18	10	24/24	18-20	2-6 7-9		Medium dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP). Changing at 18.2 feet to: Brown, CLAY, trace Silt, damp (CL). Changing at 19.0 feet to: Medium dense, brown, well sorted, fine to medium SAND, trace Silt, moist (SP).	18.2' CLAY (CL) 19' SAND (SP)		
19									
20	11	24/24	20-22	5-6 7-10	>4.0 tsf	Hard, brown, CLAY, trace Silt, damp (CL). Changing at 20.5 feet to: Medium dense, brown, well sorted, fine to medium SAND, trace Silt, moist (SP). Changing at 21.5 feet to: Medium dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).	20' CLAY (CL) 20.5' SAND (SP)		
21									
22	12	24/22	22-24	4-4 5-6		Medium dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP). Changing at 23.5 feet to: Medium dense, pale brown, well sorted, fine SAND, some Silt, wet (SM).			
23							23.5' SAND (SM)		
24	13	24/22	24-26	4-4 5-6		Medium dense, pale brown, well sorted, fine SAND, some Silt, wet (SM). Changing at 25.3 feet to: Hard, light gray and brown mottled, CLAY, trace Silt, moist (CL). Changing at 25.9 feet to: Loose, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			
25							25.3' CLAY (CL) 25.9'		

REMARKS

3. Double cased from 0.0 to 25.0 feet during drilling.

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

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Belmont, Michigan

Boring No.: SB-3/MW-3S
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File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
27	14	24/20	26-28	2-2 6-8	>4.0 tsf	Loose, pale brown, well sorted, fine SAND, trace Silt, moist (SP).	SAND (SP)	3	
28	15	24/20	28-30	6-10 10-11		Medium dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			
30	16	24/20	30-32	2-4 9-10		Medium dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			
32	17	24/21	32-34	5-12 13-20		Medium dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			
34	18	24/19	34-36	8-16 28-40		Dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			Grout
36	19	24/21	36-38	18-18 19-31		Medium dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			
38	20	24	38-40			Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			

REMARKS

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BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data				
	21	24	40-42			Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).	SAND (SP)		
41									
42	22	24	42-44			Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
43									
44	24	24	44-46			Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
45									
46	26	24	46-48			Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
47									
48	27	24	48-50			Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
49									
50	28	24	50-52			Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
51									
52	30	24	52-54			Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
53									

REMARKS

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

Boring No.: SB-3/MW-3S

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	31	24	54-56			Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).	SAND (SP)		
55									
56	32	24	56-58			Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
57									
58	33	24	58-60			Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
59									
60	34	24	60-62			Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
61									
62	35	24	62-64			Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP). Changing at 63.0 feet to: Light yellowish-brown to yellowish-brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
63									
64	36	24	64-66			Yellowish-brown, fine to medium SAND, trace Silt, very well sorted, wet (SP).		4	
65									
66	37	24	66-68			Yellowish-brown, fine to medium SAND, trace Silt, very well sorted, wet (SP). Changing at 67.0 feet to: Yellowish-brown, fine to medium SAND, some Silt, very well sorted, wet (SM). Changing at 67.2 feet to: Yellowish-brown, fine to medium SAND, trace Silt, very well sorted, wet (SP).	67' 67.2'SAND (SM) SAND (SP)		
67									

REMARKS

4. Groundwater was encountered at approximately 64.0 feet below ground surface.

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

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Boring No.: SB-3/MW-3S
Page: 6 of 6
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
69	38	24	68-70			Yellowish-brown, fine to medium SAND, trace Silt, very well sorted, wet (SP).	SAND (SP)		
70	39	24	70-72			Yellowish-brown, fine to medium SAND, trace Silt, very well sorted, wet (SP).			Top of Well Screen
71									Silica Sand Filter Pack
72	40	24	72-74			Yellowish-brown, fine to medium SAND, trace Silt, very well sorted, wet (SP). Changing at 73.8 feet to: Yellowish-brown, fine to medium SAND, some Silt, well sorted, wet (SM).			2-Inch Dia. 5-Foot PVC Screen (0.010" Slot)
73									
74	41	24	74-76			Yellowish-brown, fine to medium SAND, some Silt, well sorted, wet (SM).	73.8' SAND (SM)		
75									Bottom of Well Screen
76						Bottom of Borehole at 76.0 Feet	76'	5	
77									
78									
79									
80									
81									

REMARKS

5. Monitoring well was installed in borehole upon completion. Well screen set from approximately 69.7 to 74.6 feet below ground surface.

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

Boring No.: SB-3/MW-3S

BORING WELL 623550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Boring No.: SB-3P/MW-3P
Page: 1 of 2
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: John Morehouse
Date Start/Finish: 9-12-17 / 9-12-17
Boring Location:
GS Elev.: 787.50' **Datum:**

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
						See SB-3/MW-3S boring log for detailed soil descriptions.			PROTECTIVE CASING; Backfill/Cement Pad; Bentonite/Grout

REMARKS

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

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

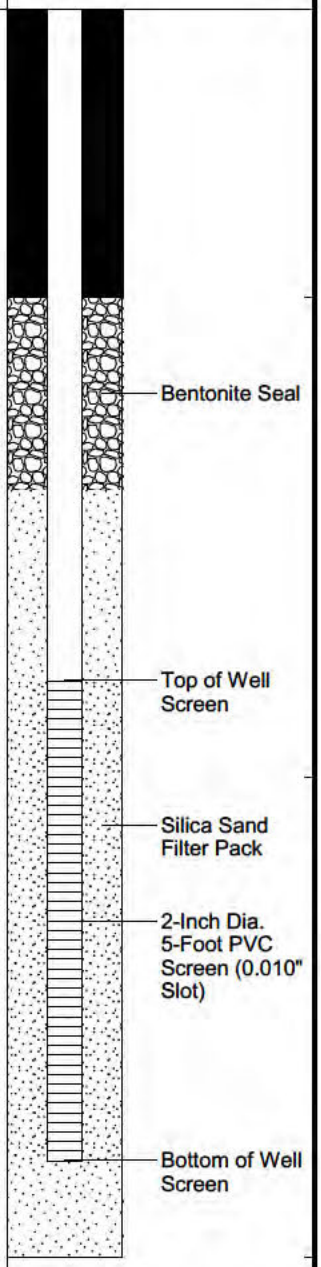
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File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks
23	1	24/24	23-25	3-4 7-9		Medium dense, brown, well sorted, fine SAND, trace Silt, wet (SP). Changing at 24.3 feet to: Hard, gray and brown mottled, CLAY, trace Silt, damp (CL).	SAND (SP)	
24					>4.0 tsf		24.3' CLAY (CL)	1
25						Bottom of Borehole at 25.0 Feet	25'	2

Equipment Installed



REMARKS

1. Pocket penetrometer readings were measured in tons per square foot (tsf) and are used to evaluate consistency of cohesive soil.
2. Monitoring well was installed in borehole upon completion. Well screen set from approximately 19.0 to 24.0 feet below ground surface.

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

BORING_WELL 623550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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1855 House Street NE
Belmont, Michigan

Boring No.: SB-4/MW-4S
Page: 1 of 6
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: John Morehouse
Date Start/Finish: 9-12-17 / 9-12-17
Boring Location:
GS Elev.: 782.30' Datum:

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks
1	1	24/14	0-2	1-1 1-1	0.0 ppm	Very loose, yellowish- brown, well sorted, fine SAND, some Organic Matter (roots), trace Silt, dry (SP).	SAND	1
2	2	24/14	2-4	1-2 2-2	0.0 ppm	Loose, pale brown, well sorted, fine SAND, damp (SP).		
3								
4	3	24/13	4-6	2-2 4-5	0.1 ppm	Loose, pale brown, well sorted, fine SAND, damp (SP).		
5								
6	4	24/14	6-8	2-3 5-7	0.0 ppm	Loose, pale brown, well sorted, fine SAND, damp (SP).		
7								
8	5	24/14	8-10	3-3 5-7	0.0 ppm	Loose, pale brown, well sorted, fine SAND, damp (SP).		
9								
10	6	24/21	10-12	5-5 7-8	0.0 ppm	Loose, pale brown, well sorted, fine SAND, damp (SP). Changing at 11.0 feet to: Hard, gray and brown mottled, CLAY, trace Silt, damp (CL).		
11					>4.0 tsf		11' CLAY (CL)	2

Equipment Installed



REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.0 ppm.
2. Pocket penetrometer readings were measured in tons per square foot (tsf) and are used to evaluate consistency of cohesive soil.

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

Boring No.: SB-4/MW-4S

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Boring No.: SB-4/MW-4S
Page: 2 **of** 6
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	7	24	12-14	5-6 7-7	0.0 ppm >4.0 tsf	Hard, gray and brown mottled, CLAY, trace Silt, damp (CL). Changing at 13.0 feet to: Medium dense, pale brown and brown mottled, well sorted, fine SAND, trace Silt, damp (SP).	CLAY (CL) 13' SAND (SP)		
14	8	24/24	14-16	2-2 3-2	0.0 ppm	Loose, yellowish-brown, well sorted, fine SAND, trace Silt, damp (SP).			
16	9	24/18	16-18	1-1 1-3	0.0 ppm	Loose, yellowish-brown, well sorted, fine SAND, trace Silt, damp (SP). Changing at 17.8 feet to: Loose, yellowish-brown, well sorted, fine GRAVEL, trace Silt, damp (GW).			
18	10	24/16	18-20	2-3 6-7	0.0 ppm	Loose, yellowish-brown, well sorted, fine GRAVEL, trace Silt, damp (GW). Changing at 19.0 feet to: Medium dense, yellowish-brown, well sorted, fine SAND, trace Silt, damp (SP).	18' GRAVEL (GW) 19' SAND (SP)		
20	11	24/15	20-22	6-7 9-9	0.0 ppm	Medium dense, yellowish-brown, well sorted, fine SAND, trace Silt, damp (SP).			
22	12	24/24	22-24	4-8 8-10	0.0 ppm	Medium dense, yellowish-brown, well sorted, fine SAND, trace Silt, moist (SP). Changing at 23.9 feet to: Hard, brown, CLAY, damp (CL).			
24	13	24/24	24-26	6-7 9-10	0.0 ppm >4.0 tsf	Hard, brown, CLAY, damp (CL).	23.9' CLAY (CL) 26'		

REMARKS

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

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Engineers and Scientists

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Boring No.: SB-4/MW-4S
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Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
27	14	24/0	26-28			NO RECOVERY.	NO RECOVERY		
28	15	24/16	28-30	5-9 11-15	0.0 ppm	Medium dense, pale brown, well sorted, fine SAND, trace Silt, damp (SP).	28' SAND (SP)		
29									
30	16	24/15	30-32	6-12 13-21	0.0 ppm	Medium dense, pale brown, well sorted, fine SAND, trace Silt, damp (SP).			
31									
32	17	24/17	32-34	4-18 31-39	0.0 ppm	Dense, pale brown, well sorted, fine SAND, trace Silt, damp (SP).			
33									Bentonite/Grout
34	18	24/17	34-36	7-10 15-19	0.0 ppm	Medium dense, pale brown, well sorted, fine SAND, trace Silt, damp (SP).			
35									
36	19	24/17	36-38	4-10 15-22	0.0 ppm	Medium dense, pale brown, well sorted, fine SAND, trace Silt, trace Gravel, damp (SP).			
37									
38	20	24/20	38-40	10-12 21-24	0.0 ppm	Dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			
39									

REMARKS

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

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	21	24/17	40-42	10-11 16-19	0.0 ppm	Dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP). Encountered Rock at 40.2 feet.	SAND (SP)		
41									
42	22	24/19	42-44	7-11 17-25	0.0 ppm	Medium dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			
43									
44	23	24/19	44-46	7-12 23-26	0.0 ppm	Dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			
45									
46	24	24/19	46-48	10-14 15-15	0.0 ppm	Medium dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			
47									
48	25	24/20	48-50	8-14 36-49	0.0 ppm	Dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			
49									
50	26	24/24	50-52	18-37 47-47	0.0 ppm	Very dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			
51									
52	27	24/21	52-54	33-29 52-50/3"	0.0 ppm	Very dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			
53									

REMARKS

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
55	28	24/16	54-56	19-58-50/4"	0.0 ppm	Very dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).	SAND (SP)		
56	29	24	56-58			Light yellowish-brown to pale brown, very well sorted, fine to medium SAND, trace Silt, moist (SP).			
58	30	24	58-60			Light yellowish-brown to pale brown, very well sorted, fine to medium SAND, trace Silt, moist (SP). Changing at 59.6 feet to: Brown, very well sorted, fine to medium SAND, trace Silt, wet (SP).		3	
60	31	24	60-62			Brown, very well sorted, fine to medium SAND, trace Silt, wet (SP).			
62	32	24	62-64			Brown, very well sorted, fine to medium SAND, trace Silt, wet (SP).			
64	33	24	64-66			Brown, very well sorted, fine to medium SAND, trace Silt, wet (SP).			
66	34	24	66-68			Brown, very well sorted, fine to medium SAND, trace Silt, wet (SP).			Bentonite Seal
67									

REMARKS

3. Groundwater was encountered at approximately 59.6 feet below ground surface.

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
69	35	24	68-70			Brown, very well sorted, fine to medium SAND, trace Silt, wet (SP).	SAND (SP)		
70	36	24	70-72			Brown, very well sorted, fine to medium SAND, trace Silt, wet (SP).			
71									Top of Well Screen
72	37	24	72-74			Brown, very well sorted, fine to medium SAND, trace Silt, wet (SP).			Silica Sand Filter Pack
73									
74	38	24	74-76			Brown, very well sorted, fine to medium SAND, trace Silt, wet (SP).			2-Inch Dia. 5-Foot PVC Screen (0.010" Slot)
75									
76						Bottom of Borehole at 76.0 Feet	76'	4	Bottom of Well Screen
77									
78									
79									
80									
81									

REMARKS

4. Monitoring well was installed in borehole upon completion. Well screen set from approximately 71.1 to 75.7 feet below ground surface.

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

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Boring No.: SB-5/MW-5D
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Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: Joe Workman/Adam Kittler
Date Start/Finish: 12-1-17 / 12-5-17
Boring Location:
GS Elev.: 779.10' **Datum:**

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	17.5" / 12.0"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1–19						Blind drill from 0.0 to 20.0 feet. Cuttings observed to consist of brown, fine to medium SAND, trace Silt, damp (SP). See SB-5/MW-5S boring log detailed soil descriptions from 0.0 to 66.0 feet.	SAND (SP) (BLIND DRILL)		PROTECTIVE CASING
20	1	24/24	20-22	16/24"	2.5 tsf	Very stiff, gray, Silty CLAY, trace fine Sand, damp (CL).	20' Silty CLAY (CL)	1	
21–22						Blind drill from 22.0 to 69.0 feet.	22'	2 3	
23–29									

REMARKS

1. Pocket penetrometer readings were measured in tons per square foot (tsf) and are used to evaluate the consistency of cohesive soil.
2. Spoon driven to confirm depth of confining layer.
3. Double cased from 0.0 to 22.0 feet during drilling.

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

Boring No.: SB-5/MW-5D

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Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
31–64									

REMARKS

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Boring No.: SB-5/MW-5D

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
66–67–68–69	34	24/20	69-71	5-7 9-10	0.0 ppm	Loose, brown, well sorted, fine SAND, trace wet (SP).	SAND (SP)	4	
70–71–72–73–74	35	24/13	74-76	7-9 12-17	0.0 ppm	Medium dense, brown, well sorted, fine SAND, trace Silt, moist (SP).			
75–76–77–78–79	36	24/18	79-81	1-3 4-9	0.0 ppm	Loose, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			
80–81–82–83–84	37	24/6	84-86	2-5 11-11	0.0 ppm	Medium dense, pale brown, well sorted, fine SAND, trace Gravel, trace Silt, moist (SP).			
85–86–87–88–89	38	24/12	89-91	2-5 10-14	0.0 ppm	Medium dense, pale brown, well sorted, fine SAND, trace Gravel, trace Silt, moist (SP).			
90–91–92–93–94	39	24/18	94-96	3-10 11-24	0.0 ppm	Medium dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			Bentonite/Grout
95–96–97–98–99	40	24/24	99-101	3-4 10-14	0.0 ppm	Medim dense, pale brown, well sorted, fine			

REMARKS

4. Field screening of samples for orgainc vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings above background levels are shown in parts per million (ppm) of isobutylene. Background was measured at 0.0 ppm.

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
101						SAND, trace Silt, trace Gravel, moist (SP).	SAND (SP)		
104	41	24/9	104-106	2-6 10-19	0.0 ppm	Medium dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			
109	42	24/14	109-111	4-8 18-26	0.0 ppm	Medium dense, pale brown, well sorted, fine SAND, trace Silt, grace Gravel, moist (SP).			
114	43	24/8	114-116	5-9 16-22	0.0 ppm	Medium dense, pale brown, well sorted, fine SAND, trace Silt, trace Gravel, moist (SP).			
119	44	24/8	119-121	2-4 10-11	0.0 ppm	Medium dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			
124	45	24/8	124-126	3-11 22-27	0.0 ppm	Dense, pale brown, well sorted, fine SAND, trace Silt, trace Gravel, moist (SP).			
129	46	24/24	129-131	3-8 17-31	0.0 ppm	Medium dense, pale brown, well sorted, fine SAND, trace Silt, trace Gravel, moist (SP).			
134	47	24/13	134-136	10-22-50/6"	0.0 ppm	Very dense, pale brown, well sorted, fine			

REMARKS

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Boring No.: SB-5/MW-5D

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
136						SAND, little Gravel, trace Silt, moist (SP).	SAND (SP)		
137									
138									
139	48	24/14	139-141	10-23 34-35	0.0 ppm	Very dense, pale brown, well sorted, fine SAND, little Gravel, trace Silt, moist (SP).			
140									
141									
142									
143									
144	49	24/6	144-146	4-7 14-21	0.0 ppm	Medium dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			
145									
146									
147									
148									
149	50	24/5	149-151	1-3 8-17	0.0 ppm	Medium dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			
150									
151									
152									
153									
154	51	24/3	154-156	4-22-50/6"	0.0 ppm	Very dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			
155									
156									
157									
158									
159	52	24/18	159-161	10-21 29-34	0.0 ppm	Dense, pale brown, well sorted, fine SAND, trace Silt, moist (SP).			
160									
161									
162									
163									
164	53	24/12	164-166	8-11 11-11	0.0 ppm	Medium dense, pale brown, well sorted, fine SAND, trace Gravel, trace Silt, moist (SP).			
165									
166									
167									
168									
169	54	24/12	169-171	3-3 3-5	0.0 ppm	Loose, pale brown, well sorted, fine SAND,			

REMARKS

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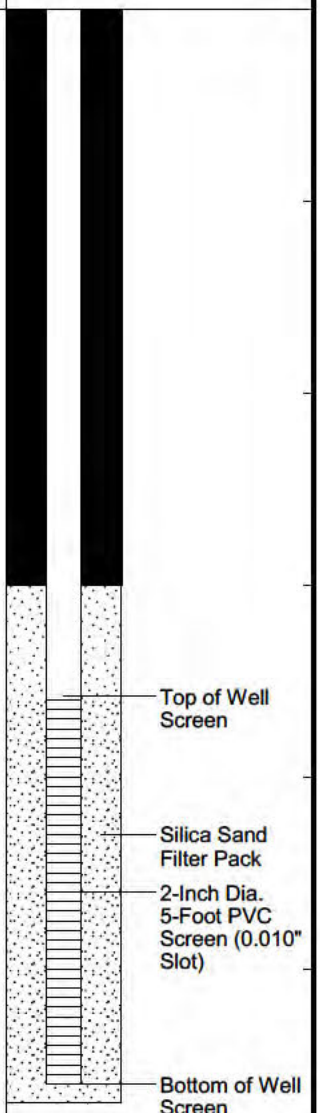
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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks
171						trace Silt, trace Gravel, moist (SP).	SAND (SP)	
172								
173								
174	55	24/10	174-176	1-1 1-2	0.0 ppm	Very loose, pale brown, well sorted, fine SAND, trace Silt, moist (SP).		
175								
176								
177								
178								
179	56	24/12	179-181	1-3 1-3	0.0 ppm	Very loose, pale brown, well sorted, fine SAND, trace Silt, trace Gravel, moist (SP).		
180								
181								
182								
183								
184	57	24/18	184-186	1-1 1-1	0.0 ppm	Very loose, pale brown, well sorted, fine SAND, little Gravel, trace Silt, moist (SP).		
185								
186								
187								
188								
189	58	24/12	189-191	1-3 10-21	0.0 ppm	Medium dense, pale brown, well sorted, fine SAND, little Gravel, trace Silt, moist (SP).		
190								
191								
192								
193								
194	59	24/8	194-196	32-38-50/4"	0.0 ppm	Very dense, pale brown, well sorted, fine SAND, little Gravel, trace Silt, trace Cobbles, moist (SP).		
195								
196								
197								
198	60	24/0	198-200	50/0"		NO RECOVERY.	198' NO RECOVERY	
199								
200						Bottom of Borehole at 200.0	200'	5
201								
202								
203								
204								

Equipment Installed



REMARKS

5. Monitoring well was installed in borehole upon completion. Well screen set from approximately 188.0 to 198.0 feet below ground surface.

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Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: John Morehouse
Date Start/Finish: 9-19-17 / 9-19-17
Boring Location:
GS Elev.: 778.80' Datum:

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/19	0-2	6-5 8-9		Dark yellowish-brown, fine to coarse grained SAND, little Gravel, trace Silt, poorly sorted, dry to moist (FILL). Changing at 0.4 feet to: Light yellowish-brown, fine to coarse grained SAND, trace Silt, trace Gravel, moderately sorted, moist (FILL). Changing at 0.7 feet to: Very dark grayish-brown to dark yellowish-brown, fine grained SAND, some Silt, slightly cohesive, moderately sorted, moist (FILL). Changing at 1.2 feet to: Brownish-yellow grading to pale brown to very pale brown, fine grained SAND, trace Silt, well sorted, moist (SP).	SAND (FILL)		PROTECTIVE CASING
2	2	24/20	2-4	4-5 5-5			1.2' SAND (SP)		Backfill/Cement Pad
3									
4	3	24/18	4-6	2-3 3-4		Brownish-yellow grading to pale brown to very pale brown, fine grained SAND, trace Silt, well sorted, moist (SP). Changing at 3.2 feet to: Dark yellowish-brown to brown, fine to medium grained SAND, little Clay, little Silt, trace Gravel, slightly plastic, moderately cohesive, poorly sorted, moist (SC). Changing at 3.5 feet to: Dark yellowish-brown, CLAY & SILT, plastic, cohesive, modereately well sorted, moist (CL).	3.5' CLAY & SILT (CL)		
5									
6	4	24/19	6-8	2-2 2-3		Dark yellowish-brown, CLAY & SILT, plastic, cohesive, modereately well sorted, moist (CL). Light yellowish-brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).	6' SAND (SP)		
7									
8	5	24/17	8-10	2-2 3-4		Light yellowish-brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
9									
10	6	24/18	10-12	3-4 4-6		Light yellowish-brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
11						Light yellowish-brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			

REMARKS

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Boring No.: SB-5/MW-5S

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
13	7	24/23	12-14	2-3 5-9		Light yellowish-brown, fine to medium SAND, trace Silt, very well sorted, moist (SP). Light yellowish-brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).	SAND (SP)		
14	8	24/20	14-16	3-9 10-10		Light yellowish-brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
16	9	24/20	16-18	2-4 4-4		Light yellowish-brown, fine to medium SAND, trace Silt, very well sorted, moist (SP). Light yellowish-brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
18	10	24/19	18-20	3-5 5-4		Light yellowish-brown, fine to medium SAND, trace Silt, very well sorted, moist (SP). Changing at 19.5 feet to: Yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, moist (SP). Changing at 19.3 feet to: Dark brown to dark yellowish-brown grading to black, fine to medium grained SAND, trace Silt, well sorted, moist to wet (SP).			
20	11	24/18	20-22	3-3 4-3		Dark yellowish-brown, fine to medium grained SAND, trace Silt, wet sorted, moist to wet (SP). Changing at 20.2 feet to: Dark gray, fine to medium grained SAND, trace Silt, well sorted, wet (SP). Changing at 20.3 feet to: Reddish-gray, fine to medium grained SAND, trace Silt, well sorted, wet (SP). Changing at 20.7 feet to:			
22	12	24/23	22-24	2-5 8-8		Yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP). Brown, Silty CLAY, plastic, cohesive, very well sorted, moist (CL).	22' Silty CLAY (CL)		
24	13	24/20	24-26	4-6 6-7		Brown, Silty CLAY, plastic, cohesive, very well sorted, moist (CL).	26'		

REMARKS

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

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Belmont, Michigan

Boring No.: SB-5/MW-5S
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File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
27	14	24/17	26-28	3-5 8-9		Pale brown to very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).	SAND (SP)		
28	15	24/18	28-30	4-6 8-9		Pale brown to very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).			Bentonite/Grout
29									
30	16	24/24	30-32	5-6 9-10		Pale brown to very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).			
31									
32	17	24/18	32-34	3-5 9-13		Pale brown to very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).			
33									
34	18	24/18	34-36	3-7 13-16		Pale brown to very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).			
35									
36	19	24/19	36-38	3-7 10-10		Pale brown to very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).			
37									
38	20	24/24	38-40	3-5 8-12		Pale brown to very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).			
39									

REMARKS

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

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Check: J Cai

Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data				
	21	24/22	40-42	3-5 11-16		Pale brown to very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).	SAND (SP)		
41									
42	22	24/24	42-44	3-11 18-21		Pale brown to very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).			
43									
44	23	24/20	44-46	5-10 14-17		Pale brown to very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).			
45									
46	24	24/24	46-48	4-7 9-9		Pale brown to very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).			
47									
48	25	24/20	48-50	3-8 11-15		Pale brown to very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).			
49									
50	26	24/24	50-52	3-10 17-18		Pale brown to very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).			
51									
52	27	24/22	52-54	9-13 21-25		Pale brown to very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).			
53									

REMARKS

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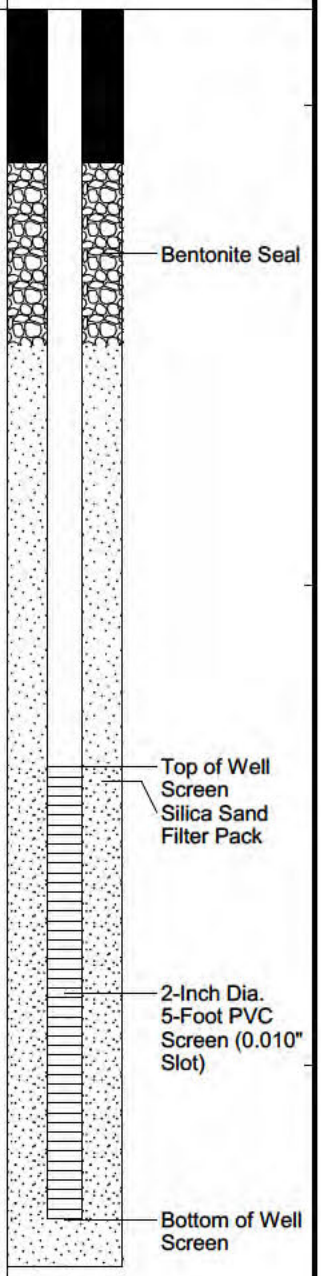
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Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks
55	28	24/24	54-56	4-5 8-10		Pale brown to very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP). Changing at 54.5 feet to: Brown to yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).	SAND (SP)	1
56	29	24/24	56-58	3-4 5-6		Brown to yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).		
58	30	24/16	58-60	2-3 5-5		Brown to yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).		
60	31	24/16	60-62	1-1 2-2		Brown to yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP). Brown to yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).		
62	32	24/5	62-64	1-4 7-11		Brown to yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).		
64	33	24/11	64-66	2-6 10-10		Brown to yellowish-brown, fine to medium grained SAND, trace Silt, well sorted, wet (SP).		
67						Bottom of Borehole at 67.0 Feet	67'	2

Equipment Installed



REMARKS

1. Groundwater was encountered at approximately 54.5 feet below ground surface.
2. Monitoring well was installed in borehole upon completion. Well screen set from approximately 61.9 to 66.6 feet below ground surface.

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Boring No.: SB-6/MW-6S
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File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: John Morehouse
Date Start/Finish: 9-13-17 / 9-14-17
Boring Location:
GS Elev.: 770.30' **Datum:**

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/18	0-2	4-3 3-5		Very dark grayish-brown to dark brown, fine to medium grained SAND, some Silt, poorly sorted, dry (SM). Changing at 0.2 feet to: Dark brown, fine to medium grained SAND, some Silt, moderately sorted, dry (SM). Changing at 0.4 feet to: Dark yellowish-brown,fine to medium grained SAND, some Silt, trace Gravel, moderately sorted, dry (SM).	SAND (SM)		PROTECTIVE CASING
2	2	24/16	2-4	8-8 11-12		Dark yellowish-brown,fine to medium grained SAND, some Silt, trace Gravel, moderately sorted, dry (SM). Changing at 2.8 feet to: Dark yellowish-brown, fine to medium SAND, little Clay, little Silt, non to slightly plastic, moderately cohesive, poorly sorted, dry (SC). Changing at 3.0 feet to: Mottled dark yellowish-brown to pale brown, CLAY & SILT, some Sand, trace Gravel, plastic, cohesive, poorly sorted, dry to moist (CL).	2.8' 3' SAND (SC) CLAY & SILT (CL)		Backfill/Cement Pad
3									
4	3	24/19	4-6	8-9 13-15					
5						Mottled dark yellowish-brown to pale brown, CLAY & SILT, some Sand, trace Gravel, plastic, cohesive, poorly sorted, dry to moist (CL). Changing at 5.2 feet to: Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).	5.2' SAND (SP)		
6	4	24/14	6-8	2-2 2-2		Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
7									
8	5	24/20	8-10	1-3 3-4		Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
9									
10	6	24/24	10-12	2-3 3-5		Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
11									

REMARKS

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

Boring No.: SB-6/MW-6S

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Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	7	24/22	12-14	3-4 5-5		Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).	SAND (SP)		
13									
14	8	24/20	14-16	2-5 6-11		Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist with some alternating beds of dark yellowish-brown, fine to medium grained SAND, trace Gravel at 14.6 feet.			
15									
16	9	24/22	16-18	4-8 9-10		Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
17									
18	10	24/22	18-20	4-5 7-8		Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
19									
20	11	24/19	20-22	6-9 14-15		Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
21									
22	12	24/24	22-24	6-10 11-13		Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
23									
24	13	24/20	24-26	5-8 13-18		Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
25									

REMARKS

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Boring No.: SB-6/MW-6S

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Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	14	24/22	26-28	7-10 15-18		Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).	SAND (SP)		Bentonite/Grout
27									
28	15	24/22	28-30	7-11 12-14		Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
29									
30	16	24/20	30-32	7-14 15-17		Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
31									
32	17	24/16	32-34	7-10 15-21		Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
33									
34	18	24/22	34-36	6-10 18-20		Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).			
35									
36	19	24/19	36-38	10-16 23-34		Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP). Changing at 36.8 feet to: Light yellowish-brown, fine grained SAND, little Silt, very well sorted, moist (SM). Changing at 37.8 feet to: Light yellowish-brown to pale brown, fine to medium grained SAND, trace Silt, well sorted, moist (SP).	36.8' SAND (SM) 37.8' SAND (SP)		
37									
38	20	24/19	38-40	9-22 22-20		Light yellowish-brown to pale brown, fine to medium grained SAND, trace Silt, well sorted, moist (SP). Changing at 38.5 feet to: Light yellowish-brown, fine grained SAND, little Silt, very well sorted, moist (SM).	38.5' SAND (SM)		
39									

REMARKS

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Boring No.: SB-6/MW-6S

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Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
41	21	24/24	40-42	4-6 7-3		Light yellowish-brown, fine grained SAND, little Silt, very well sorted, moist (SM). Changing at 40.9 feet to: Yellowish-brown, fine grained SAND, little Silt, well sorted, moist (SM).	SAND (SM)		
42	22	24/19	42-44	11-22 37-38		Yellowish-brown, fine grained SAND, little Silt, well sorted, moist (SM). Changing at 43.1 feet to: Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP).	43.1' SAND (SP)		
44	23	24/22	44-46	16-22 28-30		Very pale brown, fine to medium SAND, trace Silt, very well sorted, moist (SP). Changing at 44.8 feet to: Brown, fine to medium grained SAND, trace Silt, well sorted, moist (SP).			
46	24	24/22	46-48	6-8 10-11		Brown, fine to medium grained SAND, trace Silt, trace Gravel, well sorted, wet (SP).		1	
48	25	24/18	48-50	4-11 18-21		Brown, fine to medium grained SAND, trace Silt, trace Gravel, well sorted, wet (SP).			
50	26	24/18	50-52	5-11 14-17		Brown, fine to medium grained SAND, trace Silt, trace Gravel, well sorted, wet (SP).			
52	27	24/11	52-54	3-9 18-21		Brown, fine to medium grained SAND, trace Silt, trace Gravel, well sorted, wet (SP).			Bentonite Seal

REMARKS

1. Groundwater was encountered at approximately 46.0 feet below ground surface.

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Boring No.: SB-6/MW-6S

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
55	28	24/20	54-56	3-8 14-15		Brown, fine to medium grained SAND, trace Silt, trace Gravel, well sorted, wet (SP).	SAND (SP)		
56	29	24/8	56-58	2-4 12-12		Brown, fine to medium grained SAND, trace Silt, trace Gravel, well sorted, wet (SP).			
57									Top of Well Screen Silica Sand Filter Pack
58	30	24/12	58-60	3-7 12-11		Brown, fine to medium grained SAND, trace Silt, trace Gravel, well sorted, wet (SP).			
59									
60	31	24/7	60-62	1-1 3-7		Brown, fine to medium grained SAND, trace Silt, trace Gravel, well sorted, wet (SP).			2-Inch Dia. 5-Foot PVC Screen (0.010" Slot)
61									
62						Bottom of Borehole at 62.0 Feet	62'	2	Bottom of Well Screen
63									
64									
65									
66									
67									

REMARKS

2. Monitoring well was installed in borehole upon completion. Well screen set from approximately 57.1 to 61.8 feet below ground surface.

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

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Boring No.: SB-6D/MW-6D
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File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: Julie Groenleer
Date Start/Finish: 10-31-17 / 11-2-17
Boring Location:
GS Elev.: 770.60' **Datum:**

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1						See SB-6/MW-6S for soil description from 0.0 to 70.0 feet.			PROTECTIVE CASING
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									

REMARKS

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

Boring No.: SB-6D/MW-6D

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Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data				
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									
41									
42									
43									
44									
45									
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54									
55									
56									
57									
58									
59									
60									
61									
62									
63									
64									

REMARKS

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

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
66									
67									
68									
69									
70	1	24/18	70-72	1-2 4-12		Loose, brown, fine to medium SAND, trace Silt, wet (SP).	SAND (SP)		
71									
72	2	24/13	72-74	2-3 11-17		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
73									
74	3	24/1	74-76	7-11 19-18		Medium dense, light brown, fine Silty SAND, wet (SM).	74' Silty SAND (SM)		
75									
76	4	24/4	76-78	2-3 3-8		Loose, brown, fine to medium SAND, trace Silt, wet (SP).	76' SAND (SP)		Bentonite/Grout
77									
78	5	24/12	78-80	4-7 15-18		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
79									
80	6	24/20	80-82	2-6 17-25		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
81									
82	7	24/16	82-84	2-2 4-8		Loose, brown, fine to medium SAND, trace Silt, wet (SP).			
83									
84	8	24/12	84-86	2-2 2-7		Very loose, brown, fine to medium SAND, trace Silt, wet (SP).			
85									
86	9	24/20	86-88	5-16 37-35		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).			
87									
88	10	24/13	88-90	5-6 56-50		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).			
89									
90	11	24/24	90-92	6-17 60-30		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).			
91									
92	12	24/0	92-94	4-7 10-11		NO RECOVERY.	92' NO RECOVERY		
93									
94	13	24/0	94-96	2-3 4-11		NO RECOVERY.			
95									
96	14	24/24	96-98	2-7 9-24		Medium dense, brown, fine SAND, trace medium Sand, trace Silt, wet (SP).	96' SAND (SP)		
97									
98	15	24/24	98-100	3-6 13-22		Medium dense, brown, fine SAND, trace medium Sand, trace Silt, wet (SP). Changing at 99.6 feet to: Medium dense,	99.6'		
99							100'		

REMARKS

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

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
1855 House Street NE
Belmont, Michigan

Boring No.: SB-6D/MW-6D
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File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
101	16	24/11	100-102	3-8 20-31		brown, fine Silty SAND, wet (SM). Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).	Silty SAND (SM)/ SAND (SP)		
102–103	17	24/18	102-104	2-3 10-15		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
104							104'		
104–105	18	24/6	104-106	5-10 23-22		Dense, brown, fine Silty SAND, wet (SM).	Silty SAND (SM)		
106–107	19	24/17	106-108	9-19 29-29		Dense, brown, fine Silty SAND, wet (SM).			
108							108'		
108–109	20	24/12	108-110	5-12 18-18		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).	SAND (SP)		
110–111	21	24/13	110-112	2-3 5-17		Loose, brown, fine to medium SAND, trace Silt, wet (SP).			
112							112'		
112–113	22	24/0	112-114	3-4 7-12		NO RECOVERY.	NO RECOVERY		
114–115	23	24/0	114-116	3-5 15-17		NO RECOVERY.			
116							116'		
116–117	24	24/0	116-118	4-13 30-45		NO RECOVERY (bailed for sample description: Brown, fine to medium SAND, trace Silt, moist (SP)).	NO RECOVERY (bailed for sample description: SAND (SP))		
118							118'		
118–119	25	24/10	118-120	9-29 46-54		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).	SAND (SP) with Silty SAND in spoon at 120.0 feet		
120–121	26	24/8	120-122	6-7 9-19		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
122–123	27	24/24	122-124	10-22 37-39		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).			
124–125	28	24/24	124-126	6-21 28-28		Dense, brown, fine to medium SAND, trace Silt, wet (SP).			
126–127	29	24/24	126-128	11-19 33-24		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).			
128–129	30	24/12	128-130	3-3 3-10		Loose, brown, fine to medium SAND, trace Silt, wet (SP).			
130–131	31	24/24	130-132	8-25 35-17		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).			
132–133	32	24/14	132-134	12-29 44-50		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).			
134	33	24/20	134-136	2-7 30-50		Dense, brown, fine to medium SAND, trace			

REMARKS

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BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

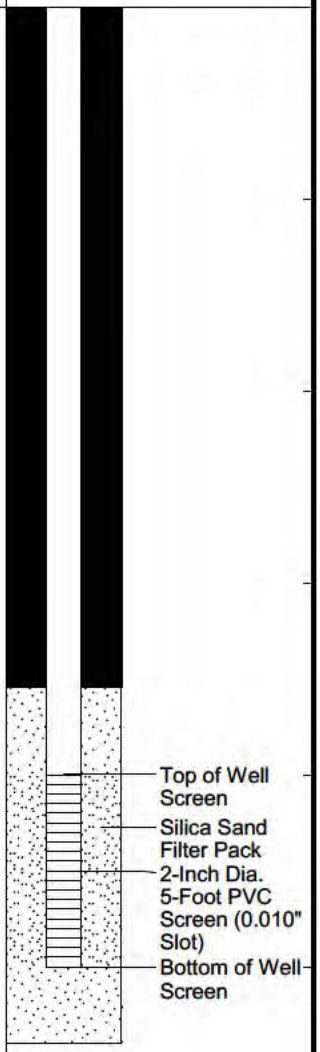
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1855 House Street NE
Belmont, Michigan

Boring No.: SB-6D/MW-6D
Page: 5 of 5
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks
136						Silt, wet (SP).	SAND (SP) with Silty SAND in spoon at 120.0 feet	
137	34	24/19	136-138	2-4 12-21		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).		
138								
139	35	24/14	138-140	8-11 11-14		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).		
140								
141	36	24/12	140-142	5-11 23-24		Dense, brown, fine to medium SAND, trace Silt, trace fine Gravel, wet (SP).		
142								
143	37	24/12	142-144	4-8 12-18		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).		
144								
145	38	24/10	144-146	1-3 12-17		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).		
146								
147	39	24/8	146-148	1-2 4-8		Loose, brown, fine to medium SAND, trace Silt, wet (SP).		
148								
149	40	24/9	148-150	1-3 7-14		Loose, brown, fine to medium SAND, trace Silt, wet (SP).		
150								
151	41	24/7	150-152	1-2 5-7		Loose, brown, fine to medium SAND, trace Silt, wet (SP).		
152							152'	
153	42	24/0	152-154	3-7 20-32		NO RECOVERY.	NO RECOVERY	
154							154'	
155	43	24/24	154-156	3-8 18-32		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).	SAND (SP)	
156								
157	44	24/14	156-158	5-12 47-24		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).		
158								
159	45	24/24	158-160	3-12 29-36		Dense, brown, fine to medium SAND, trace Silt, wet (SP). Changing at 160.0 feet (in shoe) to: Very stiff, gray, CLAY & SILT, some fine Sand, moist (CL).		
160	46	24/24	160-162	1-9 23-36	3.75 tsf >4.0 tsf	Hard, gray, CLAY & SILT, some fine to coarse Sand, moist (CL).	160' CLAY & SILT (CL)	
161								
162						Bottom of Borehole at 162.0 Feet	162'	
163								
164								
165								
166								
167								
168								
169								

Equipment Installed



REMARKS

Pocket penetrometer readings were measured in tons per square foot (tsf) and are used to evaluate consistency of cohesive soil.
Monitoring well was installed in borehole upon completion. Well screen set from approximately 155.0 to 160.0 feet below ground surface.

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Belmont, Michigan

Boring No.: SB-7/MW-7S
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File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: John Morehouse
Date Start/Finish: 9-19-17 / 9-20-17
Boring Location:
GS Elev.: 788.90' Datum:

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/18	0-2	2-1 2-1		Very loose, dark brown to yellowish-brown, fine grained SAND, some Silt, moderately sorted, dry (TOPSOIL). Changing at 0.5 feet to: Brownish-yellow, fine grained SAND, little Silt, well sorted, dry (SM).	SAND (TOPSOIL) 0.5' SAND (SM)		PROTECTIVE CASING Backfill/Cement Pad
2	2	24/12	2-4	2-3 3-4		Loose, yellowish-brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).	2' SAND (SP)		
4	3	24/18	4-6	2-2 3-2		Loose, yellowish-brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).			
6	4	24/5	6-8	2-2 2-2		Loose, yellowish-brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP) with fractured rock at 6.1 feet. Changing at 6.3 feet to: Dark brown, CLAY & SILT, some Sand, trace Gravel, plastic, cohesive, mmoist (CL).	6.3' CLAY & SILT (CL)		
8	5	24/12	8-10	2-2 3-4		Loose dark grayish-brown to dark brown, coarse grained SAND, little Gravel, trace Silt, poorly sorted, moist (SP).	8' SAND (SP)		
10	6	24/11	10-12	4-6 4-4		Loose dark grayish-brown to dark brown, coarse grained SAND, little Gravel, trace Silt, poorly sorted, moist (SP).			

REMARKS

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Boring No.: SB-7/MW-7S

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Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	7	24/19	12-14	4-7 5-5		Loose dark grayish-brown to dark brown, coarse grained SAND, little Gravel, trace Silt, poorly sorted, moist (SP). Changing at 12.6 feet to: Stiff, brown, CLAY & SILT, some Sand, trace Gravel, plastic, cohesive, poorly sorted, moist (CL). Changing at 13.2 feet to: Stiff, dark brown, CLAY & SILT, some Sand, trace Gravel, plastic, cohesive, poorly sorted, moist (CL).	SAND (SP) 12.6' CLAY & SILT (CL) 13' 13.2' SAND (SM) CLAY & SILT (CL)		
13									
14	8	24/0	14-16	8-8 9-10		NO RECOVERY.			
15									
16	9	24/17	16-18	3-4 3-5		Loose, brown, fine grained SAND, trace Silt, very well sorted, moist (SP). Changing at 16.4 feet to: Medium brown, CLAY & SILT, some Sand, trace Gravel, moderately plastic, cohesive, poorly sorted, moist (CL). Changing at 16.7 feet to: Loose, dark yellowish-brown, fine grained SAND, trace Silt, well sorted, moist (SP). Changing at 17.0 feet to: Medium mottled yellowish-brown, CLAY & SILT, plastic, cohesive, well sorted, moist (CL).	16' SAND (SP) 16.4' 16.7' CLAY & SILT (CL) 17' SAND (SP) CLAY & SILT (CL)		
17									
18	10	24/22	18-20	4-4 5-6					
19						Medium mottled yellowish-brown, CLAY & SILT, plastic, cohesive, well sorted, moist (CL). Changing at 18.6 feet to: Stiff mottled yellowish-brown, CLAY & SILT, plastic, cohesive, well sorted, moist (CL). Changing at 18.9 feet to: Loose, light yellowish-brown to brownish-yellow, fine grained SAND, very well sorted, moist (SP). Changing at 19.0 feet to: Stiff, mottled yellowish-brown, CLAY & SILT, plastic, cohesive, well sorted, moist (CL).	18.9' 19' SAND (SP) CLAY & SILT (CL)		
20	11	24/14	20-22	3-3 4-5					
21							20.6' SAND (SP)		
22	12	24/16	22-24	1-1 2-3		Stiff, mottled yellowish-brown, CLAY & SILT, plastic, cohesive, well sorted, moist (CL). Loose to medium dense, very pale brown, fine grained SAND, trace Silt, very well sorted (bedded), moist (SP).			
23									
24	13	24/22	24-26	2-3 3-2		Loose to medium dense, very pale brown, fine grained SAND, trace Silt, very well sorted (bedded), moist (SP).			
25									

REMARKS

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Boring No.: SB-7/MW-7S

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
27	14	24/22	26-28	2-3 3-3		Loose to medium dense, very pale brown, fine grained SAND, trace Silt, very well sorted (bedded), moist (SP).	SAND (SP)		
28	15	24/22	28-30	2-3 4-3		Loose to medium dense, very pale brown, fine grained SAND, trace Silt, very well sorted (bedded), moist (SP).			
29									
30	16	24/20	30-32	1-3 6-8		Loose to medium dense, very pale brown, fine grained SAND, trace Silt, very well sorted (bedded), moist (SP). Changing at 30.3 feet to: Stiff, yellowish-brown, SILT, little Clay, plastic, cohesive, well sorted, moist to wet (ML). Changing at 30.7 feet to: Medium dense, very pale brown, fine to medium grained SAND, trace Silt, very well sorted (bedded), moist (SP).	30.3' SILT (ML) 30.7' SAND (SP)		
31									
32	17	24/23	32-34	5-5 7-8		Medium dense, very pale brown, fine to medium grained SAND, trace Silt, very well sorted (bedded), moist (SP). Changing at 32.7 feet to: Soft, dark yellowish-brown, CLAY & SILT, plastic, cohesive, moist (CL). Changing at 32.8 feet to: Medium dense, very pale brown, fine to coarse grained SAND, some Gravel, trace Silt, poorly sorted, moist (SP).	32.7' 32.8' CLAY & SILT (CL) SAND (SP)		Bentonite/Grout
33									
34	18	24/20	34-36	4-8 9-8		Medium dense, very pale brown, fine to coarse grained SAND, some Gravel, trace Silt, moderately sorted, moist (SP).			
35									
36	19	24/18	36-38	5-6 7-8		Medium dense, very pale brown, fine to coarse grained SAND, some Gravel, trace Silt, moderately sorted, moist (SP). Changing at 36.1 feet to: Brown to yellowish-brown, CLAY & SILT, plastic, cohesive, well sorted (bedded), moist (CL). Changing at 36.2 feet to: Medium dense, very pale brown, fine to coarse grained SAND, some Gravel, trace Silt, moderately sorted, moist (SP).	36.1' 36.2' CLAY & SILT (CL) SAND (SP)		
37									
38	20	24/18	38-40	3-5 5-7		Medium dense, very pale brown, fine to coarse grained SAND, some Gravel, trace Silt, moderately sorted, moist (SP). Changing at 38.5 feet to: Medium dense, light yellowish-brown to very pale brown, fine to medium grained SAND, trace Silt,			
39									

REMARKS

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BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Belmont, Michigan

Boring No.: SB-7/MW-7S
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File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	21	24/20	40-42	2-4 7-8		very well sorted, moist (SP). Medium dense, light yellowish-brown to very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).	SAND (SP)		
41									
42	22	24/16	42-44	4-4 6-10		Medium dense, light yellowish-brown to very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP). Changing at 42.9 feet to: Medium dense, light yellowish-brown, fine to coarse grained SAND, some Gravel, trace Silt, poorly sorted, moist (SP).			
43									
44	23	24/20	44-46	3-5 6-9		Medium dense, light yellowish-brown, fine to coarse grained SAND, trace Silt, poorly sorted, moist (SP). Changing at 45.3 feet to: Stiff to very stiff yellowish-brown grading to dark gray, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, poorly sorted, moist (CL).			
45							45.3' CLAY & SILT (CL)		
46	24	24/12	46-48	3-6 7-10		Stiff to very stiff yellowish-brown grading to dark gray, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, poorly sorted, moist (CL).			
47									
48	25	24/18	48-50	10-11 29-17		Stiff to very stiff yellowish-brown grading to dark gray, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, poorly sorted, moist (CL). Changing 48.6 feet to: Dense to very dense, very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).	48.6' SAND (SP)		
49									
50	26	24/6	50-52	21-39 48-25		Dense to very dense, very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).			
51									
52	27	24/23	52-54	6-12 16-20		Dense to very dense, very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).			
53									

REMARKS

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BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
55	28	24/20	54-56	6-16 17-23		Dense to very dense, very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).	SAND (SP)		
56	29	24/23	56-58	6-13 17-21		Dense to very dense, very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).			
58	30	24/20	58-60	8-16 20-31		Dense to very dense, very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).			
60	31	24/24	60-62	9-17 18-24		Dense to very dense, very pale brown, fine to medium grained SAND, trace Silt, very well sorted, moist (SP).			
62	32	24/18	62-64	4-8 10-11		Medium dense, yellowish-brown, fine to medim grained SAND, trace Silt, well sorted, wet (SP).		1	
64	33	24/23	64-66	2-3 7-10		Medium dense, yellowish-brown, fine to medim grained SAND, trace Silt, well sorted, wet (SP).			
66	34	24/1	66-68	1-3 5-9		Medium dense, yellowish-brown, fine to medim grained SAND, trace Silt, well sorted, wet (SP).			Bentonite Seal

REMARKS

1. Groundwater was encountered at approximately 62.0 feet below ground surface.

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Boring No.: SB-7/MW-7S

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Boring No.: SB-7/MW-7S
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Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
69	35	24/23	68-70	1-4 7-7		Medium dense, yellowish-brown, fine to medim grained SAND, trace Silt, well sorted, wet (SP).	SAND (SP)		
70	36	24/8	70-72	2-7 11-11		Medium dense, yellowish-brown, fine to medim grained SAND, trace Silt, well sorted, wet (SP).			Top of Well Screen
71									Silica Sand Filter Pack
72	37	24/5	72-74	1-2 5-9		Medium dense, yellowish-brown, fine to medim grained SAND, trace Silt, well sorted, wet (SP).			2-Inch Dia. 5-Foot PVC Screen (0.010" Slot)
73									
74						Bottom of Borehole at 74.0 Feet	74'	2	Bottom of Well Screen
75									
76									
77									
78									
79									
80									
81									

REMARKS

2. Monitoring well was installed in borehole upon completion. Well screen set from approximately 70.1 to 74.7 feet below ground surface.

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BORING_WELL 623550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Wolverine World Wide, Inc.
1855 House Street NE
Belmont, Michigan

Boring No.: WB-1
Page: 1 of 2
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jim/Bryan
Logged by: John Morehouse
Date Start/Finish: 11-30-17 / 11-30-17
Boring Location:
GS Elev.: Datum:

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/19	0-2	1-2 4-5		Very dark grayish brown, poorly sorted, SILT, some fine grained Sand, trace Gravel, trace Clay, cohesive, slightly plastic, moist (FILL). Changing at 0.4 feet to: Mottled, dark yellowish-brown, poorly sorted, CLAY & SILT, plastic, cohesive, moist (FILL).	SILT (FILL) 0.4' CLAY & SILT (FILL)		None
2	2	24/14	2-4	4-4 8-8		Mottled, dark yellowish-brown, poorly sorted, CLAY & SILT, plastic, cohesive, moist (FILL). Changing at 3.0 feet to: Pale brown to light yellowish-brown, well sorted, fine to medium grained SAND, trace Silt, moist (FILL).	3' SAND (FILL)		
4	3	24/12	4-6	2-1 1-1		Pale brown to light yellowish-brown, well sorted, fine to medium grained SAND, trace Silt, moist (FILL). Changing at 4.6 feet to: Black to dark blue WASTE (FILL). Changing at 5.0 feet to: Brown to dark yellowish-brown, CLAY & SILT, some Sand, trace Gravel, mixed with black and dark blue Waste, moist (FILL).	4.6' WASTE (FILL) 5' SAND (FILL)	1	
6	4	24/15	6-8	0-0 0-0		Brown to dark yellowish-brown, CLAY & SILT, some Sand, trace Gravel, mixed with black and dark blue Waste, moist (FILL).			
8	5	24/18	8-10	0-0 1-1		Brown to dark yellowish-brown, CLAY & SILT, some Sand, trace Gravel, mixed with black and dark blue Waste, moist (FILL). Changing at 8.9 feet to: Black to dark blue WASTE, moist (FILL). Changing at 9.0 feet to: Brown to dark yellowish-brown, CLAY & SILT, some Sand, trace Gravel, mixed with black and dark blue Waste, moist (FILL).	8.9' 9' WASTE (FILL) CLAY & SILT (FILL)		

REMARKS

1. Composite sample was collected from approximately 4.6 to 14.3 feet below ground surface and submitted for laboratory analytical testing.

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

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
1855 House Street NE
Belmont, Michigan

Boring No.: WB-1
Page: 2 of 2
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	6	24/24	10-12	0-0 3-5		Brown to dark yellowish-brown, CLAY & SILT, some Sand, trace Gravel, mixed with black and dark blue Waste, moist (FILL). Changing at 11.3 feet to: Black to dark blue WASTE, moist (FILL). Changing at 11.4 feet to: Brown to yellowish brown, CLAY & SILT, some Sand, trace Gravel, mixed with black to dark blue Waste, moist (FILL). Changing at 11.5 feet to: Dark brown to pale brown, poorly sorted, fine to medium SAND, some Silt, little Clay, moderately plastic, moderately cohesive, moist (FILL).	CLAY & SILT (FILL)		
11							11.3' WASTE (FILL) 11.4' CLAY & SILT (FILL) 11.5' SAND (FILL)		
12	7	24/24	12-14	3-3 4-5		Dark brown to pale brown, poorly sorted, fine to medium SAND, some Silt, little Clay, moderately plastic, moderately cohesive, moist (FILL).			
13									
14	8	24/8	14-16			Dark brown to pale brown, poorly sorted, fine to medium SAND, some Silt, little Clay, moderately plastic, moderately cohesive, moist (FILL). Changing at 14.3 feet to: Black to dark blue WASTE, moist (FILL). Changing at 14.4 feet to: Dark brown, poorly sorted, fine to medium SAND, some Silt, little Clay, moderately plastic, moderately cohesive, moist (FILL).	14.3' WASTE (FILL) 14.4' SAND (FILL)		
15									
16	9	24/22	16-18			Brown to pale brown, poorly sorted, fine to coarse grained SAND, trace Silt, trace Gravel, moist (SW). Changing at 16.2 feet to: Grayish brown to dark gray, Silty CLAY, plastic, cohesive, moist (CL). Changing at 16.3 feet to: Very pale brown, very well sorted, fine to medium grained SAND, trace Silt, moist (SP).	16' SAND (SW) 16.2' Silty CLAY (CL) 16.3' SAND (SP)	2	
17									
18						Bottom of Borehole at 18.0 Feet	18'	3 4	
19									
20									
21									

REMARKS

2. Soil sample was collected from approximately 16.3 to 17.9 feet below ground surface and submitted for laboratory analytical testing.
3. No groundwater was encountered during drilling or upon completion.
4. Borehole was backfilled with bentonite grout and tremie pipe placed.

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

Boring No.: WB-1

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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1855 House Street NE
Belmont, Michigan

Boring No.: WB-2
Page: 1 of 3
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jim/Bryan
Logged by: John Morehouse
Date Start/Finish: 11-30-17 / 11-30-17
Boring Location:
GS Elev.: **Datum:**

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/18	0-2	3-2 2-3		Very dark grayish-brown, poorly sorted, SILT, some fine grained Sand, trace Gravel, trace Clay, cohesive, silghty plastic moist (FILL). Changing at 0.4 feet to: Mottled, dark yellowish brown, poorly sorted, CLAY & SILT, plastic, cohesive, moist (FILL). Changing at 1.0 feet to: Pale brown to light yellowish brown, well sorted, fine to medium grained SAND, trace Silt, moist (FILL). Changing at 1.3 feet to: Dark yellowish brown, poorly sorted, fine to medium grained SAND, some Silt, trace Clay, trace Gravel, non plastic, moderately cohesive, moist (FILL).	SILT (FILL) 0.4' CLAY & SILT (FILL) 1' SAND (FILL)		None
2	2	24/18	2-4	2-2 1-1		Dark yellowish brown, poorly sorted, fine to medium grained SAND, some Silt, trace Clay, trace Gravel, non plastic, moderately cohesive, moist (FILL). Changing at 2.6 feet to: Mottled, brown to dark brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, plastic, cohesive, moist (FILL).	2.6' CLAY & SILT (FILL)		
3									
4	3	24/19	4-6	2-2 2-3		Mottled, brown to dark brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, plastic, cohesive, moist (FILL).			
5									

REMARKS

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

Boring No.: WB-2

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Wolverine World Wide, Inc.
1855 House Street NE
Belmont, Michigan

Boring No.: WB-2
Page: 2 of 3
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
7	4	24/20	6-8	1-2 2-2		Mottled, brown to dark brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, plastic, cohesive, moist (FILL). Changing at 6.5 feet to: Brown to dark yellowish brown, CLAY & SILT, some Sand, trace Gravel, mixed with black to dark blue Waste, moist (FILL). Changing at 7.1 feet to: Black to dark blue WASTE, moist (FILL). Changing at 7.3 feet to: Brown to dark yellowish brown, CLAY & SILT, some Sand, trace Gravel, mixed with black to dark blue Waste, moist (FILL). Changing at 7.6 feet to: Black to dark blue WASTE, moist (FILL).	CLAY & SILT (FILL) 7.1' WASTE (FILL) 7.3' CLAY & SILT (FILL) 7.6' WASTE (FILL)	1	
8	5	24/21	8-10	0-0 2-1		Black to dark blue WASTE, moist (FILL).			
9									
10	6	24/9	10-12	1-4 8-7		Black to dark blue WASTE, moist (FILL). Changing at 10.7 feet to: Brown, poorly sorted, medium to coarse grained SAND, trace Gravel, trace Silt, moist (SW).	10.7' SAND (SW)		
11									
12	7	24/21	12-14	3-4 8-10		Very pale brown, very well sorted, fine to medium grained SAND, trace Silt, moist (SP).	12' SAND (SP)		

REMARKS

1. Composite sample was collected from approximately 7.1 to 10.7 feet below ground surface and submitted for laboratory analytical testing.

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

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Boring No.: WB-2
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File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
							SAND (SP)		
14	8	24/21	14-16	4-6 7-11		Very pale brown, very well sorted, fine to medium grained SAND, trace Silt, moist (SP).		2	
15									
16							16'	3	
						Bottom of Borehole at 16.0 Feet		4	
17									
18									
19									

REMARKS

2. Soil sample was collected from approximately 14.0 to 15.8 feet below ground surface and submitted for laboratory analytical testing.
3. No groundwater was encountered during drilling or upon completion.
4. Borehole was backfilled with bentonite grout and tremie pipe placed.

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

Boring No.: WB-2

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Wolverine World Wide, Inc.
1855 House Street NE
Belmont, Michigan

Boring No.: WB-3
Page: 1 of 3
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jim/Bryan
Logged by: John Morehouse
Date Start/Finish: 11-30-17 / 11-30-17
Boring Location:
GS Elev.: **Datum:**

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/16	0-2	2-1 1-2		Very dark grayish brown, poorly sorted, SILT, some fine grained Sand, trace Gravel, trace Clay, cohesive, slightly plastic, moist (FILL). Changing at 0.3 feet to: Dark yellowish brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, plastic, cohesive, moist (FILL).	SILT (FILL) 0.3' CLAY & SILT (FILL)		None
2	2	24/19	2-4	2-3 3-4		Dark yellowish brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, plastic, cohesive, moist (FILL).			
3									
4	3	24/20	4-6	2-2 4-5		Dark yellowish brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, plastic, cohesive, moist (FILL). Changing at 4.5 feet to: Dark yellowish brown, well sorted, coarse grained, SAND, trace Silt, moist (FILL). Changing at 4.6 feet to: Dark yellowish brown, poorly sorted, CLAY & SILT, some Sand, some Sand, trace Gravel, plastic, cohesive, moist (FILL).	4.5' 4.6' SAND (FILL) CLAY & SILT (FILL)		
5									

REMARKS

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

Boring No.: WB-3

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Boring No.: WB-3
Page: 2 of 3
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data				
	4	24/24	6-8	3-4 5-6		Dark yellowish brown, poorly sorted, CLAY & SILT, some Sand, some Sand, trace Gravel, plastic, cohesive, moist (FILL).	CLAY & SILT (FILL)		
7									
8	5	24/24	8-10	3-3 5-6		Dark yellowish brown, poorly sorted, CLAY & SILT, some Sand, some Sand, trace Gravel, plastic, cohesive, moist (FILL).			
9									
10	6	24/24	10-12	2-4 6-10		Dark yellowish brown, poorly sorted, CLAY & SILT, some Sand, some Sand, trace Gravel, plastic, cohesive, moist (FILL).			
11									
12	7	24/24	12-14	4-7 13-39		Dark yellowish brown grading to dark grayish brown to dark brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, plastic, cohesive, moist (FILL).			

REMARKS

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

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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1855 House Street NE
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Boring No.: WB-3
Page: 3 of 3
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
							CLAY & SILT (FILL)		
14	8	24/21	14-16	6-12 31-32		Dark brown, poorly sorted, medium to coarse grained SAND, little Gravel, trace Silt, moist (FILL). Changing at 14.4 feet to: Dark yellowish brown grading to dark grayish brown to dark brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, plastic, cohesive, moist (FILL). Changing at 14.6 feet to: Dark brown, poorly sorted, medium to coarse grained SAND, little Gravel, trace Silt, moist (SW).	14' SAND (FILL) 14.4' CLAY & SILT (FILL) 14.6' SAND (SW)		
15									
16						Bottom of Borehole at 16.0 Feet	16'	1 2	
17									
18									
19									

REMARKS

1. No groundwater was encountered during drilling or upon completion.
2. Borehole was backfilled with bentonite grout and tremie pipe placed.

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

Boring No.: WB-3

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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1855 House Street NE
Belmont, Michigan

Boring No.: WB-4
Page: 1 of 3
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jim/Bryan
Logged by: John Morehouse
Date Start/Finish: 11-29-17 / 11-29-17
Boring Location:
GS Elev.: **Datum:**

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/19	0-2	2-3 4-4		Very dark grayish brown, poorly sorted, SILT, some fine grained Sand, trace Gravel, trace Clay, cohesive, slightly plastic, moist (FILL). Changing at 0.2 feet to: Dark yellowish brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, plastic, cohesive, moist (FILL). Changing at 1.4 feet to: Dark yellowish brown, moderately sorted, fine to coarse grained SAND, little Gravel, trace Silt, moist (FILL).	SILT (FILL) 0.2' CLAY & SILT (FILL) 1.4' SAND (FILL)		None
2	2	24/24	2-4	1-2 3-4		Dark yellowish brown, moderately sorted, fine to coarse grained SAND, little Gravel, trace Silt, moist (FILL). Changing at 2.5 feet to: Dark yellowish brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, plastic, cohesive, moist (FILL). Changing at 2.9 feet to: Dark yellowish brown, moderately sorted, fine to coarse grained SAND, little Gravel, trace Silt, moist (SW). Changing at 3.1 feet to: Dark yellowish brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, plastic, cohesive, mosit (FILL). Changing at 3.2 feet to: Dark yellowish brown, moderately sorted, fine to coarse grained SAND, little Gravel, trace Silt, moist (FILL). Changing at 3.9 feet to: Dark yellowish brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, plastic, cohesive, moist (FILL).	2.5' CLAY & SILT (FILL) 2.9' SAND (FILL) 3.1' 3.2' CLAY & SILT (FILL) SAND (FILL) 3.9'		
3									
4	3	24/15	4-6	1-2 2-2		Dark yellowish brown, moderately sorted, fine to coarse SAND, little Gravel, trace Silt, moist (FILL). Changing at 4.3 feet to: Dark yellowish brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, plastic, cohesive, moist (FILL). Changing at 4.7 feet to: Dark yellowish brown, moderately sorted, fine to coarse grained SAND, little Gravel, trace Silt, moist (FILL).	4' CLAY & SILT (FILL) SAND (FILL) 4.3' CLAY & SILT (FILL) 4.7' SAND (FILL) 6'		
5									

REMARKS

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

Boring No.: WB-4

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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1855 House Street NE
Belmont, Michigan

Boring No.: WB-4
Page: 2 of 3
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	4	24/20	6-8	3-1 2-1		Dark yellowish brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, plastic, cohesive, moist (FILL). Changing at 6.5 feet to: Black to dark blue WASTE, moist (FILL). Changing at 6.6 feet to: Brown to yellowish brown, well sorted, fine to medium SAND, trace Silt, moist (FILL).	CLAY & SILT (FILL) 6.5' 6.6WASTE (FILL) SAND (FILL)		
7									
8	5	24/15	8-10	2-3 3-2		Brown to yellowish brown, well sorted, fine to medium SAND, trace Silt, moist (FILL). Changing at 8.3 feet to: Black to dark gray, WASTE, moist (FILL). Changing at 8.7 feet to: Brown to yellowish brown, well sorted, fine to medium SAND, trace Silt, with black to dark gray, Waste, moist (FILL).	8.3' WASTE (FILL) 8.7' SAND (FILL)	1 2	
9									
10	6	24/20	10-12	0-0 2-4		Brown to dark yellowish brown, CLAY & SILT, some Sand, trace Gravel, mixed with black to dark blue Waste, moist (FILL). Changing at 10.4 feet to: Black to dark gray WASTE, moist (FILL). Changing at 10.7 feet to: Dark blue to purple WASTE, moist (FILL). Changing at 11.3 feet to: Very pale brown, very well sorted, fine to medium SAND, trace Silt, moist (SP).	10' CLAY & SILT (FILL) 10.4' WASTE (FILL) 11.3' SAND (SP)		
11									
12	7	24/15	12-14	2-4 6-3		Very pale brown, very well sorted, fine to medium SAND, trace Silt, moist (SP).			

REMARKS

1. Strong odor noted in sample.
2. Composite sample was collected from approximately 8.3 to 10.7 feet below ground surface and submitted for laboratory analytical testing.

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

Boring No.: WB-4

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Boring No.: WB-4
Page: 3 of 3
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
							SAND (SP)		
14	8	24/21	14-16	1-1 3-4		Very pale brown, very well sorted, fine to medium SAND, trace Silt, moist (SP).		3	
15									
16							16'	4	
						Bottom of Borehole at 16.0 Feet		5	
17									
18									
19									

REMARKS

3. Soil sample was collected from approximately 14.0 to 15.8 feet below ground surface and submitted for laboratory analytical testing.
4. No groundwater was encountered during drilling or upon completion.
5. Borehole was backfilled with bentonite grout and tremie pipe placed.

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

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Boring No.: WB-5
Page: 1 of 3
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jim/Bryan
Logged by: John Morehouse
Date Start/Finish: 11-29-17 / 11-29-17
Boring Location:
GS Elev.: Datum:

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/22	0-2	2-3 3-4		Very dark grayish brown, poorly sorted, SILT, some fine grained Sand, trace Gravel, trace Clay, cohesive, slightly plastic, moist (FILL). Changing at 0.2 feet to: Yellowish brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL).	SILT (FILL) 0.2' CLAY & SILT (CL)		None
2	2	24/16	2-4	3-5 5-6		Yellowish brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL). Changing at 2.9 feet to: Dark yellowish brown, poorly sorted, fine to coarse grained SAND, little Gravel, little Silt, trace Clay, non to slightly plastic, moderately cohesive, moist (SW).	2.9' SAND (SW)		
3									
4	3	24/19	4-6	5-5 6-6		Brown, poorly sorted, fine to coarse grained SAND, little Gravel, trace Silt, moist (SW). Changing at 4.3 feet to: Dark yellowish brown, poorly sorted, fie to coarse grained SAND, little Gravel, little Silt, trace Clay, non to slightly plastic, moderately cohesive, moist (SW). Changing at 4.4 feet to: Brown, poorly sorted, fine to coarse grained SAND, little Gravel, trace Silt, moist (SW).			
5									

REMARKS

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

Boring No.: WB-5

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Engineers and Scientists

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1855 House Street NE
Belmont, Michigan

Boring No.: WB-5
Page: 2 of 3
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
7	4	24/16	6-8	3-8 6-4		Brown, poorly sorted, fine to coarse grained SAND, little Gravel, trace Silt, moist (SW). Changing at 6.5 feet to: Dark yellowish brown, poorly sorted, fine to coarse grained SAND, little Gravel, little Silt, trace Clay, non to slightly plastic, moderately cohesive, moist (SW). Changing at 6.6 feet to: Brown, poorly sorted, fine to coarse grained SAND, little Gravel, trace Silt, moist (SW). Changing at 6.7 feet to: Dark yellowish brown, poorly sorted, fine to coarse grained SAND, little Gravel, trace Silt, moist (SW). Changing at 6.8 feet to: Brown, poorly sorted, fine to coarse grained SAND, little Gravel, trace Silt, moist (SW).	SAND (SW)		
8	5	24/21	8-10	2-3 5-5		Brown, poorly sorted, fine to coarse grained SAND, little Gravel, trace Silt, moist (SW). Changing at 8.4 feet to: Brown, moderately sorted, CLAY & SILT, little Sand, plastic, cohesive, moist (CL). Changing at 9.5 feet to: Brown, poorly sorted, CLAY & SILT, little Sand, little Gravel, plastic, cohesive, moist (CL).	8.4' CLAY & SILT (CL)		
10	6	24/16	10-12	3-2 5-7		Yellowish brown, moderately sorted, fine to coarse grained SAND, trace Gravel, trace Silt, moist (SW). Changing at 10.8 feet to: Pale brown to light yellowish brown, well sorted, fine to medium grained SAND, trace Silt, moist (SP).	10' SAND (SW) 10.8' SAND (SP)		
12							12'		

REMARKS

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

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Belmont, Michigan

Boring No.: WB-5
Page: 3 of 3
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
14									
15									
16						Bottom of Borehole at 16.0 Feet		1 2	
17									
18									
19									

REMARKS

1. No groundwater was encountered during drilling or upon completion.
2. Borehole was backfilled with bentonite grout and tremie pipe placed.

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

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Boring No.: WB-6
Page: 1 of 2
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jim/Bryan
Logged by: John Morehouse
Date Start/Finish: 11-29-17 / 11-29-17
Boring Location:
GS Elev.: Datum:

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/20	0-2	1-2 2-2		Yellowish brown, poorly sorted, SILT & CLAY, some Sand, trace Gravel, plastic, cohesive, with occasional very thin seams of dark yellowish brown, moderately well sorted, fine to medium grained Sand, moist (FILL).	SILT & CLAY (CL)		None
2	2	24/23	2-4	3-4 5-7		Yellowish brown, poorly sorted, SILT & CLAY, some Sand, trace Gravel, plastic, cohesive, with occasional very thin seams of dark yellowish brown, moderately well sorted, fine to medium grained Sand, moist (FILL).			
3									
4	3	24/19	4-6	2-3 2-5		Yellowish brown, poorly sorted, SILT & CLAY, some Sand, trace Gravel, plastic, cohesive, with occasional very thin seams of dark yellowish brown, moderately well sorted, fine to medium grained Sand, moist (FILL).			
5									

REMARKS

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

Boring No.: WB-6

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Boring No.: WB-6
Page: 2 of 2
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
7	4	24/24	6-8	3-4 5-6		Yellowish brown, poorly sorted, SILT & CLAY, some Sand, trace Gravel, plastic, cohesive, with occasional very thin seams of dark yellowish brown, moderately well sorted, fine to medium grained Sand, moist (FILL). Changing at 7.0 feet to: Brown, well sorted, fine to medium grained SAND, trace Silt, moist (FILL).	SILT & CLAY (CL) 7' SAND (FILL)		
8	5	24/24	8-10	2-4 4-3		Dark yellowish brown, poorly sorted, SILT & CLAY, some Sand, trace Gravel, plastic, cohesive, moist (FILL). Changing at 8.6 feet to: Brown, well sorted, fine to medium SAND, trace Silt, moist (FILL). Changing at 9.5 feet to: Light yellowish brown, very well sorted, fine to medium grained SAND, trace Silt, moist (SP).	8' SILT & CLAY (FILL) 8.6' SAND (FILL) 9.5' SAND (SP)		
10						Bottom of Borehole at 10.0 Feet	10'	1 2	
11									
12									

REMARKS

1. No groundwater was encountered during drilling or upon completion.
2. Borehole was backfilled with bentonite grout and tremie pipe placed.

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

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Boring No.: WB-7
Page: 1 of 2
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jim/Bryan
Logged by: John Morehouse
Date Start/Finish: 11-28-17 / 11-28-17
Boring Location:
GS Elev.: Datum:

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/24	0-2	1-2 2-2		Very dark grayish brown, poorly sorted, SILT, some fine grained Sand, trace Gravel, trace Clay, cohesive, slightly plastic, moist (FILL). Changing at 1.3 feet to: Yellowish brown, poorly sorted, SILT & CLAY, some Sand, trace Gravel, moderately plastic, moderately cohesive, with occasional very thin fine Sand lenses, moist (FILL).	SILT (FILL)		None
2	2	24/21	2-4	3-4 4-4		Yellowish brown, poorly sorted, SILT & CLAY, some Sand, trace Gravel, moderately plastic, moderately cohesive, with occasional very thin fine Sand lenses, moist (FILL).	1.3' SILT & CLAY (FILL)		
3									
4	3	24/20	4-6	2-4 4-3		Yellowish brown, poorly sorted, SILT & CLAY, some Sand, trace Gravel, moderately plastic, moderately cohesive, with occasional very thin fine Sand lenses, moist (FILL). Changing at 4.5 feet to: Dark yellowish brown, fine to coarse grained SAND, little Silt, trace Clay, trace Gravel, moderately cohesive, non to slightly plastic, moist (FILL). Changing at 4.8 feet to: Brown to dark brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (FILL).	4.5' SAND (FILL)		
5							4.8' CLAY & SILT (FILL)		

REMARKS

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

Boring No.: WB-7

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Boring No.: WB-7
Page: 2 of 2
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	4	24/24	6-8	1-3 4-5		Brown to dark brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (FILL). Changing at 7.1 feet to: Soft, brown to dark brown, poorly sorted CLAY & SILT, little Sand, little Gravel, moderately plastic, moderately cohesive, moist (FILL).	CLAY & SILT (FILL)		
8	5	24/24	8-10	4-6 6-7		Dark yellowish brown, moderately sorted, fine grained SAND, little Silt, trace Clay, slightly plastic, moderately cohesive, moist (FILL). Changing at 8.6 feet to: Dark yellowish brown, moderately well sorted, fine to medium grained SAND, trace Silt, moist (FILL). Changing at 8.8 feet to: Dark yellowish brown, moderately sorted, fine grained SAND, little Silt, trace Clay, slightly plastic, moderately cohesive, moist (FILL). Changing at 9.8 feet to: Dark yellowish brown, poorly sorted, CLAY & SILT, some Sand, little Gravel, plastic, cohesive, moist (FILL).	8' SAND (FILL) 9.8' CLAY & SILT (FILL)		
10						Bottom of Borehole at 10.0 Feet	10'	1 2	

REMARKS

1. No groundwater was encountered during drilling or upon completion.
2. Borehole was backfilled with bentonite grout and tremie pipe placed.

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

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Boring No.: WB-8
Page: 1 of 2
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jim/Bryan
Logged by: John Morehouse
Date Start/Finish: 11-28-17 / 11-28-17
Boring Location:
GS Elev.: **Datum:**

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/20	0-2	1-1 2-2		Very dark grayish brown, poorly sorted, SILT, some fine grained Sand, trace Gravel, trace Clay, cohesive, slightly plastic, moist (FILL). Changing at 1.2 feet to: Dark yellowish brown, poorly sorted, CLAY & SILT, little Sand, little Gravel, plastic, cohesive, moist (FILL). Changing at 1.5 feet to: Yellowish brown grading to brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, moderately plastic, moderately cohesive, moist (FILL).	SILT (FILL) 1.2' CLAY & SILT (FILL)		None
2	2	24/24	2-4	3-3 3-5		Yellowish brown grading to brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, moderately plastic, moderately cohesive, moist (FILL). Changing at 2.4 feet to: Brown, well sorted, fine to medium SAND, trace Silt, moist (FILL). Changing at 2.5 feet to: Dark yellowish brown, poorly sorted, fine grained SAND, some Silt, little Clay, slightly to moderately plastic, moderately cohesive, moist (SP). Changing at 2.9 feet to: Mottled, brown, moderately well sorted, CLAY & SILT, trace Sand, plastic, cohesive, moist (CL).	2.4' 2.5' SAND (FILL) SAND (SP) 2.9' CLAY & SILT (CL)		
3									
4	3	24/24	4-6	2-4 7-8		Mottled, brown, moderately well sorted, CLAY & SILT, trace Sand, plastic, cohesive, moist (CL). Changing at 5.3 feet to: Dark yellowish brown, poorly sorted, SILT & CLAY, some Sand, trace Gravel, non to slightly plastic, moderately cohesive, moist (ML). Changing at 5.9 feet to: Dark yellowish brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL).			
5							5.3' SILT & CLAY (ML) 5.9' 6' CLAY & SILT		

REMARKS

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

Boring No.: WB-8

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Boring No.: WB-8
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File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	4	24/21	6-8	2-3 4-5		Dark yellowish brown, moderately sorted, fine grained SAND, little Silt, trace Clay, moist (SM). Changing at 6.4 feet to: Mottled, brown, moderately well sorted, CLAY & SILT, trace Sand, plastic, cohesive, moist (CL). Changing at 7.0 feet to: Yellowish brown, very well sorted, fine to medium grained SAND, trace Silt, moist (SP). Changing at 7.2 feet to: Mottled, brown, moderately well sorted, CLAY & SILT, trace Sand, plastic, cohesive, moist (CL). Changing at 7.3 feet to: Yellowish brown, very well sorted, fine to medium grained SAND, trace Silt, moist (SP).	(CL) SAND (SM) 6.4' CLAY & SILT (CL) 7' SAND (SP) 7.2' 7.3' CLAY & SILT (CL) SAND (SP)		
8	5	24/21	8-10	2-4 3-3		Dark yellowish brown, moderately sorted, SILT & CLAY, some Sand, moderately plastic, cohesive, moist (ML). Changing at 8.6 feet to: Yellowish brown, well sorted, fine to medium grained SAND, little Silt, moist to wet (SM). Changing at 9.4 feet to: Slightly mottled, brown to dark brown, moderately well sorted, CLAY & SILT, trace Sand, plastic, cohesive, bedded, moist (CL).	8' SILT & CLAY (ML) 8.6' SAND (SM) 9.4' CLAY & SILT (CL)		
10						Bottom of Borehole at 10.0 Feet	10'	1 2	

REMARKS

1. No groundwater was encountered during drilling or upon completion.
2. Borehole was backfilled with bentonite grout and tremie pipe placed.

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

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Belmont, Michigan

Boring No.: WB-9
Page: 1 of 2
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jim/Bryan
Logged by: John Morehouse
Date Start/Finish: 11-28-17 / 11-28-17
Boring Location:
GS Elev.: Datum:

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/24	0-2	1-1 2-4		Very dark grayish brown, poorly sorted, fine to medium gained SAND, some Silt, trace Clay, trace Gravel, slightly plastic, moderately coheisve, moist (FILL) Changing at 0.5 feet to: Mottled, dark yellowish brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, grades coarser with depth, moist (FILL).	SAND (FILL) 0.5' CLAY & SILT (CL)		None
2	2	24/24	2-4	3-4 4-6		Mottled, dark yellowish brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, grades coarser with depth, moist (FILL).			
4	3	24/20	4-6	1-2 4-5		Mottled, dark yellowish brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, grades coarser with depth, moist (FILL). Changing at 4.9 feet to: Dark yellowish brown, very well sorted, fine to medium SAND, trace Silt, moist (FILL). Changing at 5.1 feet to: Mottled, dark yellowish brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, grades coarser with depth, moist (FILL). Changing at 5.6 feet to: Dark yellowish brown, poorly sorted, fine to medium grained SAND, some Silt, little Clay, moderately plastic, cohesive, moist (SM).	4.9' 5.1' SAND (FILL) CLAY & SILT (FILL) 5.6' SAND (SM)		
6	4	24/24	6-8	3-2 4-4		Dark yellowish brown, poorly sorted, fine to medium grained SAND, some Silt, little Clay, moderately plastic, cohesive, moist (SM). Changing at 6.4 feet to: Dark brown, moderately well sorted, fine to medium SAND, little Silt, trace Clay, slightly plastic, slightly to moderately cohesive, moist (SM). Changing at 6.6 feet to: Dark yellowish brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, with occasional very thin fine Sand lenses, moist (CL).	6.6' CLAY & SILT (CL)		
8	5	24/24	8-10	3-5 6-7		Dark yellowish brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, with occasional very thin fine	8.7' SAND (SP)		

REMARKS

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

Boring No.: WB-9

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Boring No.: WB-9
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File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
11	6	24/24	10-12	4-4 3-3		Sand lenses, moist (CL). Changing at 8.7 feet to: Yellowish brown, very well sorted, fine to medium SAND, trace Silt, moist (SP). Yellowish brown, very well sorted, fine to medium SAND, trace Silt, moist (SP). Changing at 11.0 feet to: Brown to dark brown, well sorted, CLAY & SILT, trace Sand, plastic, cohesive, moist (CL).	SAND (SP) 11' CLAY & SILT (CL)		
12	7	24/24	12-14	3-5 5-5		Brown to dark brown, well sorted, CLAY & SILT, trace Sand, plastic, cohesive, moist (CL). Changing at 12.5 feet to: Light yellowish brown to very pale brown, very well sorted, fine to medium grained SAND, trace Silt, moist (SP).	12.5' SAND (SP)		
14	8	24/21	14-16	2-3 4-4		Light yellowish brown to very pale brown, very well sorted, fine to medium grained SAND, trace Silt, moist (SP).			
16	9	24/22	16-18	2-4 5-6		Light yellowish brown to very pale brown, very well sorted, fine to medium grained SAND, trace Silt, moist (SP).			
18	10	24/24	18-20	3-4 5-5		Light yellowish brown to very pale brown, very well sorted, fine to medium grained SAND, trace Silt, moist (SP). Changing at 19.9 feet to: Dark brown, poorly sorted, fine to coarse grained SAND, little Silt, moist (SM).	19.9' 20' SAND (SM)		
20						Bottom of Borehole at 20.0 Feet		1 2	

REMARKS

1. No groundwater was encountered during drilling or upon completion.
2. Borehole was backfilled with bentonite grout and tremie pipe placed.

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

Boring No.: WB-9

BORING_WELL_6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Boring No.: WB-10
Page: 1 of 2
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jim/Bryan
Logged by: John Morehouse
Date Start/Finish: 11-27-17 / 11-27-17
Boring Location:
GS Elev.: **Datum:**

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/20	0-2	1-1 2-3		Very dark grayish brown, poorly sorted, fine to medium SAND, some Silt, trace Clay, trace Gravel, slightly plastic, moderately cohesive, moist (FILL). Changing at 0.4 feet to: Brown to dark yellowish brown, CLAY & SILT, some Sand, trace Gravel, mixed with black to dark blue Waste, moist (FILL). Changing at 1.1 feet to: Dark brown, poorly sorted, fine to medium SAND, some Silt, trace Clay, trace Gravel, slightly plastic, moderately cohesive, moist (FILL). Changing at 1.5 feet to: Brown to dark yellowish brown, CLAY & SILT, some Sand, trace Gravel, mixed with black to dark blue Waste, moist (FILL).	SAND (FILL) 0.4' CLAY & SILT (FILL) 1.1' SAND (FILL) 1.5' CLAY & SILT (FILL)		None
2	2	24/24	2-4	1-2 2-4					
3							3.4'		
4	3	24/19	4-6	2-3 3-2		Brown to dark yellowish brown, CLAY & SILT, some Sand, trace Gravel, mixed with black to dark blue Waste, moist (FILL). Changing at 3.4 feet to: Yellowish brown, moderately sorted, SILT & CLAY, some Sand, moderately plastic, moderately cohesive, moist (FILL). Changing at 3.5 feet to: Brown to dark yellowish brown, CLAY & SILT, some Sand, trace Gravel, mixed with black to dark blue Waste, moist (FILL).	3.5' SILT & CLAY (FILL) CLAY & SILT (FILL) 4.4' SAND (FILL)		
5									
6	4	24/24	6-8	3-4 7-8		Brown to dark yellowish brown, CLAY & SILT, some Sand, trace Gravel, mixed with black to dark blue Waste, moist (FILL). Changing at Changing at 4.4 feet to: Yellowish brown, moderately sorted, fine to medium grained SAND, some Silt, little Clay, moderately plastic, cohesive, moist (FILL)			
7									
8	5	24/24	8-10	5-8 12-16		Brown, moderately sorted, fine to medium grained SAND, little Silt, trace Clay, trace Gravel, non plastic, slightly cohesive, moist (FILL). Changing at 6.4 feet to: Yellowish brown, moderately sorted, fine to medium grained SAND, some Silt, little Clay, trace Gravel, non plastic, slightly cohesive, moist (FILL). Changing at 7.8 feet to: Brown, moderately sorted, fine to medium grained SAND, little Sand, trace Clay, trace Gravel, non plastic, slightly cohesive, moist (FILL).	8' SILT & CLAY (ML)		
9									
10	6	24/24	10-12	4-10 9-9		Mottled, yellowish brown, moderately sorted, SILT & CLAY, little Sand, trace Gravel, plastic, cohesive, with occasional very thin fine thin Sand lenses, moist (CL). Mottled, yellowish brown, moderately sorted, SILT & CLAY, little Sand, trace Gravel,	10.9' SAND (SP)		
11									

REMARKS

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Boring No.: WB-10

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Boring No.: WB-10
Page: 2 of 2
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	7	24/24	12-14	2-5 7-16		plastic, cohesive, with occasional very fine Sand lenses, moist (ML). Changing at 10.9 feet to: Pale brown, well sorted, fine to medium grained SAND, trace Silt, moist (SP).	SAND (SP)		
13						Pale brown, well sorted, fine to medium grained SAND, trace Silt, moist (SP). Changing at 13.1 feet to: Dark yellowish brown, moderately sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL). Changing at 13.2 feet to: Dark yellowish brown to yellowish brown, poorly sorted, fine to coarse SAND, little Gravel, trace Silt, moist (SW).	13.1' 13.2' CLAY & SILT (CL) SAND (SW)		
14	8	24/24	14-16	8-6 8-14			14.6' CLAY & SILT (CL)		
15							15.1' 15.2' SAND (SP) 15.3' CLAY & SILT (CL) SAND (SP)		
16	9	24/24	16-18	4-5 6-7		Dark yellowish brown to yellowish brown, poorly sorted, fine to coarse SAND, little Gravel, trace Silt, moist (SW). Changing at 14.6 feet to: Dark yellowish brown, moderately sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL). Changing at 15.1 feet to: Pale brown, very well sorted, fine grained SAND, trace Silt, moist to wet (SP). Changing at 15.2 feet to: Dark yellowish brown, moderately sorted, CLAY & SILT, little Sand, trace			
17									
18	10	24/24	18-20	4-7 7-10		Gravel, plastic, cohesive, moist (CL). Changing at 15.3 feet to: Very pale brown, very well sorted, fine grained SAND, trace Silt, bedded, moist (SP).			
19						Very pale brown, very well sorted, fine grained SAND, trace Silt, bedded, moist (SP).			
20						Very pale brown, very well sorted, fine grained SAND, trace Silt, bedded, moist (SP).	20'	1 2	
						Bottom of Borehole at 20.0 Feet			
21									
22									
23									
24									
25									

REMARKS

1. No groundwater was encountered during drilling or upon completion.
2. Borehole was backfilled with bentonite grout and tremie pipe placed.

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

Boring No.: WB-10

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
1855 House Street NE
Belmont, Michigan

Boring No.: WB-11
Page: 1 of 2
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jim/Bryan
Logged by: John Morehouse
Date Start/Finish: 11-27-17 / 11-27-17
Boring Location:
GS Elev.: **Datum:**

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	24/24	0-2	2-1 2-3		Very dark grayish brown, poorly sorted, fine to medium grained SAND, some Silt, trace Clay, trace Gravel, slightly plastic, moderately coheisve, moist (FILL). Changing at 0.6 feet to: Dark yellowish brown, moderately sorted, fine to coarse SAND, trace Silt, trace Gravel, moist (FILL). Changing at 1.1 feet to: Brown to dark brown, CLAY & SILT, some Sand, trace, trace Gravel, mixed with black to dark blue Waste, moist (FILL). Changing at 1.2 feet to: Dark yellowish brown, moderately sorted, fine to coarse SAND, trace Silt, trace Gravel, moist (FILL). Changing at 1.3 feet to: Brown to dark yellowish brown, CLAY & SILT, some Sand, trace Gravel, mixed with black to dark blue Waste, moist (FILL). Changing at 1.4 feet to: Dark yellowish brown, moderately sorted, fine to coarse SAND, trace Silt, trace Gravel, moist (FILL). Dark yellowish brown, moderately sorted, fine to coarse SAND, trace Silt, trace Gravel, moist (FILL). Changing at 3.1 feet to: Black to dark blue WASTE, moist (FILL). Changing at 3.2 feet to: Dark yellowish brown, moderately sorted, fine to coarse SAND, trace Silt, trace Gravel, moist (FILL). Dark yellowish brown, moderately sorted, fine to coarse SAND, trace Silt, trace Gravel, moist (FILL). Changing at 5.1 feet to: Black to dark blue WASTE, moist (FILL). Dark yellowish brown, moderately well sorted, fine to coarse SAND, trace Silt, trace Gravel, moist (FILL).	SAND (FILL) 1.1' 1.2' CLAY & SILT (FILL) 1.3' 1.4' SAND (FILL) CLAY & SILT (FILL) SAND (FILL) 3.1' 3.2' WASTE (FILL) SAND (FILL) 5.1' WASTE (FILL) 6' SAND (FILL)		None
1									
2	2	24/24	2-4	2-1 1-1					
3								1	
4	3	24/19	4-6	1-1 1-1					
5									
6	4	24/16	6-8	2-1 1-2					
7									
8	5	24/19	8-10	1-1 2-1		Dark yellowish brown, moderately well sorted, fine to coarse SAND, trace Silt, trace Gravel, moist (FILL). Changing at 8.7 feet to: Light yellowish brown, moderately well sorted, fine to coarse grained SAND, trace Silt, trace Gravel, grades finer with depth, moist (SW).	8.7' SAND (SW)		
9								2	

REMARKS

1. Composite sample was collected from approximately 2.8 to 5.6 feet below ground surface and submitted for laboratory analytical testing.
2. Soil sample was collected from approximately 9.0 to 9.6 feet below ground surface and submitted for laboratory analytical testing.

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

Boring No.: WB-11

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Belmont, Michigan

Boring No.: WB-11
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File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
11	6	24/19	10-12	1-1 1-1		Light yellowish brown, moderately well sorted, fine to coarse grained SAND, trace Gravel, grades finer with depth, moist (SW). Changing at 10.9 feet to: Light yellowish brown, moderately well sorted, fine to medium grained SAND, trace Silt, trace Gravel, moist (SP).	SAND (SW) 10.9' SAND (SP)		
12	7	24/16	12-14	2-2 2-2		Light yellowish brown, moderately well sorted, fine to medium grained SAND, trace Silt, trace Gravel, moist (SP). Changing at 12.4 feet to: Dark brown, poorly sorted, SILT & CLAY, some Sand, trace Gravel, slightly plastic, moderately cohesive, moist (ML). Changing at 12.8 feet to: Mottled, brown to grayish brown, well sorted, CLAY & SILT, with lenses of light brownish gray, Clay & Silt, plastic, cohesive, moist (CL).	12.4' SILT & CLAY (ML) 12.8' CLAY & SILT (CL) 14'		
14	8	24/13	14-16	1-1 2-2		Pale brown to very pale brown, very well sorted, fine SAND, trace Silt, moist (SP).	SAND (SP)		
16	9	24/18	16-18	2-2 4-4		Pale brown to very pale brown, very well sorted, fine SAND, trace Silt, moist (SP).			
18	10	24/21	18-20	3-3 4-4		Pale brown to very pale brown, very well sorted, fine SAND, trace Silt, moist (SP).	20'		
20						Bottom of Borehole at 20.0 Feet		3 4	
21									

REMARKS

3. No groundwater was encountered during drilling or upon completion.
4. Borehole was backfilled with bentonite grout and tremie pipe placed.

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

Boring No.: WB-11

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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1855 House Street NE
Belmont, Michigan

Boring No.: WB-12
Page: 1 of 2
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jim/Bryan
Logged by: John Morehouse
Date Start/Finish: 11-28-17 / 11-28-17
Boring Location:
GS Elev.: Datum:

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/22	0-2	0-2 2-2		Very dark grayish brown, poorly sorted, fine to medium grained SAND, some Silt, trace Clay, trace Gravel, slightly plstic, moderately cohesive, moist (FILL). Changing at 0.5 feet to: Mottled, dark yellowish brown to grayish brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, with occasional decaying wood, plastic, cooheisve, moist (FILL).	SAND (FILL) 0.5' CLAY & SILT (FILL)		None
2	2	24/16	2-4	3-3 3-2		Mottled, dark yellowish brown to grayish brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, with occasional decaying wood, plastic, cooheisve, moist (FILL). Changing at 2.4 feet to: Dark brown, poorly sorted,fine to medium grained SAND, some Silt, trace Clay, trace Gravel, non to slightly plastic, slightly cohesive, former topsoil layer with decaying vegatation and roots at approximately 2.7 feet, moist (SP). Changing at 3.1 feet to: Very pale brown to yellow grading darker, moderately sorted, CLAY & SILT, little Sand, plastic, cohesive, bedded, with decaying vegetation and roots, moist (CL).	2.4' SAND (SP) 3.1' CLAY & SILT (CL)		
4	3	24/22	4-6	2-2 6-8		Very pale brown to yellow grading darker, moderately sorted, CLAY & SILT, little Sand, plastic, cohesive, bedded, with decaying vegetation and roots, moist (CL). Changing at 4.5 feet to: Mottled, brown to dark yellowish brown to red, CLAY & SILT, trace Sand, plastic, cohesive, bedded, moist (CL). Changing at 4.6 feet to: Yellowish brown, moderately sorted, CLAY & SILT, little Sand, plastic, cohesive, bedded, moist (CL).			
5									

REMARKS

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

Boring No.: WB-12

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Boring No.: WB-12
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File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	4	24/20	6-8	6-7 8-8		Yellowish brown, moderately sorted, CLAY & SILT, little Sand, plastic, cohesive, bedded, moist (CL).	CLAY & SILT (CL)		
7									
8	5	24/20	8-10	4 5-5		Yellowish brown, moderately sorted, CLAY & SILT, little Sand, plastic, cohesive, bedded, moist (CL). Changing at 8.4 feet to: Light yellowish brown, very well sorted, fine to medium grained SAND, trace Silt, moist (SP).	8.4' SAND (SP)		
9									
10						Bottom of Borehole at 10.0 Feet	10'	1 2	
11									
12									

REMARKS

1. No groundwater was encountered during drilling or upon completion.
2. Borehole was backfilled with bentonite grout and tremie pipe placed.

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

Boring No.: WB-12

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Belmont, Michigan

Boring No.: WB-13
Page: 1 of 2
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jim/Bryan
Logged by: John Morehouse
Date Start/Finish: 11-28-17 / 11-28-17
Boring Location:
GS Elev.: Datum:

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/16	0-2	0-2 2-3		Dark brown, poorly sorted, fine to medium grained SAND, some Silt, trace Clay, trace Gravel, slightly plastic, moderately cohesive, moist (FILL).	SAND (FILL)		None
2	2	24/24	2-4	3-3 4-3		Very dark grayish brown to dark yellowish brown, poorly sorted, fine to medium grained SAND, little Silt, trace Clay, trace Gravel, moderately plastic, moderately cohesive, moist (FILL).			
3									
4	3	24/21	4-6	2-3 4-4		Very dark grayish brown to dark yellowish brown, poorly sorted, fine to medium grained SAND, little Silt, trace Clay, trace Gravel, moderately plastic, moderately cohesive, moist (FILL).			
5									

REMARKS

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

Boring No.: WB-13

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Boring No.: WB-13
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Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
7	4	24/24	6-8	3-5 7-9		Very dark grayish brown to dark yellowish brown, poorly sorted, fine to medium grained SAND, little Silt, trace Clay, trace Gravel, moderately plastic, moderately cohesive, moist (FILL).	SAND (FILL)		
8	5	24/20	8-10	5-8 11-15		Yellowish brown, poorly sorted, SILT & CLAY, some Sand, trace Gravel, moderately plastic, moderately cohesive, moist (FILL).	8' SILT & CLAY (FILL)		
9									
10						Bottom of Borehole at 10.0 Feet	10'	1 2	
11									
12									

REMARKS

1. No groundwater was encountered during drilling or upon completion.
2. Borehole was backfilled with bentonite grout and tremie pipe placed.

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

Boring No.: WB-13

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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1855 House Street NE
Belmont, Michigan

Boring No.: WB-14
Page: 1 of 2
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jim/Bryan
Logged by: John Morehouse
Date Start/Finish: 11-30-17 / 11-30-17
Boring Location:
GS Elev.: **Datum:**

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/21	0-2	1-3 4-3		Dark brown, poorly sorted, fine to medium grained SAND, some Silt, trace Clay, trace Gravel, slightly plastic, moderately cohesive, moist (FILL). Changing at 0.3 feet to: Dark yellowish brown to brown, poorly sorted, CLAY & SILT, plastic, cohesive, moist (FILL).	SAND (FILL) 0.3' CLAY & SAND (FILL)		None
2	2	24/21	2-4	3-3 3-5		Dark yellowish brown to brown, poorly sorted, CLAY & SILT, plastic, cohesive, moist (FILL). Changing at 3.6 feet to: Dark yellowish brown to brown, moderately well sorted, medium to coarse SAND, trace Silt, moist (FILL). Changing at 3.7 feet to: Very soft dark grayish brown to brown, poorly sorted, CLAY & SILT, plastic, cohesive, moist (FILL).			
3									
4	3	24	4-6	1-2 2-3		Very soft dark grayish brown to brown, poorly sorted, CLAY & SILT, plastic, cohesive, moist (FILL).	3.6' 3.7' SAND (FILL) CLAY & SILT (FILL)		
5									
6	4	24/20	6-8	0-0 0-2		Very soft, dark grayish brown to brown, poorly sorted, CLAY & SILT, plastic, cohesive, moist (FILL). Changing at 7.1 feet to: Brown to dark yellowish brown, CLAY & SILT, some Sand, trace Gravel, mixed with black to dark blue Waste, moist (FILL). Changing at 7.3 feet to: Black to dark blue WASTE, moist (FILL).		1	
7									
8	5	24/13	8-10	0-0 0-2		Brown to dark yellowish brown, CLAY & SILT, some Sand, trce Gravel, mixed with black to dark blue Waste, moist (FILL). Changing at 8.4 feet to: Black to dark blue WASTE, moist (FILL). Changing at 8.5 feet to: Brown to dark yellowish brown, CLAY & SILT, some Sand, trce Gravel, mixed with black to dark blue Waste, moist (FILL).			
9									

REMARKS

1. Composite sample was collected from approximately 7.3 to 10.6 feet below ground surface and submitted for laboratory analytical testing.

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

Boring No.: WB-14

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Engineers and Scientists

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1855 House Street NE
Belmont, Michigan

Boring No.: WB-14
Page: 2 of 2
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
11	6	24/24	10-12	0-0 3-6		Brown to dark yellowish brown, CLAY & SILT, some Sand, trce Gravel, mixed with black to dark blue Waste, moist (FILL). Changing at 10.3 feet to: Black to dark blue WASTE, moist (FILL). Changing at 10.6 feet to: Brown to dark yellowish brown, CLAY & SILT, some Sand, trace Gravel, mixed with black to dark blue Waste, moist (FILL). Changing at 11.3 feet to: Dark brown, poorly sorted, medium to coarse grained SAND, little Gravel, trace Silt, moist (FILL).	10.3' WASTE (FILL) 10.6' CLAY & SILT (FILL) 11.3' SAND (FILL)		
12	7	24/20	12-14	3-3 3-4		Dark yellowish brown to brown, poorly sorted, CLAY & SILT, plastic, cohesive, moist (FILL). Changing at 12.1 feet to: Dark brown, poorly sorted, medium to coarse grained SAND, little Gravel, trace Silt, trace Clay, moist (SW). Changing at 12.3 feet to: Dark yellowish brown to brown, poorly sorted, CLAY & SILT plastic, cohesive, moist (CL). Changing at 12.7 feet to: Dark brown, poorly sorted, medium to coarse grained SAND, little Gravel, trace Silt, trace Clay, moist (SW). Changing at 12.9 feet to: Dark yellowish brown to brown, poorly sorted, CLAY & SILT, plastic, cohesive, moist (CL). Changing at 13.1 feet to: Dark yellowish brown, grading to brown, well sorted, fine to medium SAND, trace Silt, moist (SP).	12' 12.1' CLAY & SILT (FILL) 12.3' SAND (SW) 12.7' CLAY & SILT (CL) 12.9' SAND (SW) 13.1' CLAY & SILT (CL) SAND (SP)		
14	8	24/24	14-16	2-2 3-4					
15								2	
16						Dark yellowish brown, grading to brown, well sorted, fine to medium SAND, trace Silt, moist (SP). Bottom of Borehole at 16.0 Feet	16'	3 4	
17									
18									
19									
20									
21									

REMARKS

2. Soil sample was collected from approximately 15.0 to 16.0 feet below ground surface and submitted for laboratory analytical testing.
3. No groundwater was encountered during drilling or upon completion.
4. Borehole was backfilled with bentonite grout and tremie pipe placed.

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

Boring No.: WB-14

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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1855 House Street NE
Belmont, Michigan

Boring No.: WB-15
Page: 1 of 2
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jim/Bryan
Logged by: John Morehouse
Date Start/Finish: 12-1-17 / 12-1-17
Boring Location:
GS Elev.: **Datum:**

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/24	0-2	1-1 2-2		Dark brown, poorly sorted, fine to medium grained SAND, some Silt, trace Clay, trace Gravel, slightly plastic, moderately cohesive, moist (TOPSOIL/FILL). Changing at 0.2 feet to: Dark brown to dark yellowish brown, poorly sorted, CLAY & SILT, little Sand, plastic, cohesive, moist with Topsoil with decaying vegetation at 1.0 foot (FILL).	SAND (TOPSOIL/FILL) 0.2 CLAY & SILT (FILL)		None
2	2	24/21	2-4	2-2 5-5		Dark yellowish brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (FILL).			
3									
4	3	24/24	4-6	1-2 5-7		Dark yellowish brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (FILL).			
5									

REMARKS

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

Boring No.: WB-15

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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1855 House Street NE
Belmont, Michigan

Boring No.: WB-15
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File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	4	24/20	6-8	3-4 3-3		Dark yellowish brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (FILL). Changing at 7.1 feet to: Dark yellowish brown, moderately sorted, fine to coarse grained SAND, trace Silt, moist (SW). Changing at 7.3 feet to: Dark yellowish brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL). Changing at 7.7 feet to: Dark yellowish brown, moderately sorted, fine to coarse grained SAND, trace Silt, moist (SW). Changing at 7.8 feet to: Dark yellowish brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL). Changing at 7.9 feet to: Dark yellowish brown, moderately sorted, fine to coarse grained SAND, trace Silt, moist (SW).	CLAY & SILT (FILL)		
7							7.1' SAND (SW) 7.3' CLAY & SILT (CL) 7.7' 7.8' SAND (SW) 7.9' CLAY & SILT (CL) SAND (SW)		
8	5	24/20	8-10	2-2 2-2		Dark yellowish brown, moderately sorted, fine to coarse grained SAND, trace Silt, moist (SW). Changing at 9.3 feet to: Dark yellowish brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL). Changing at 9.5 feet to: Dark yellowish brown, moderately sorted, fine to coarse grained SAND, trace Silt, moist (SW).			
9							9.3' CLAY & SILT 9.5' (CL) SAND (SW)		
10	6	24/18	10-12	2-2 4-2		Dark yellowish brown, moderately sorted, fine to coarse grained SAND, trace Silt, moist (SW). Changing at 11.0 feet to: Dark yellowish brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, coheisve, moist (CL). Changing at 11.1 feet to: Dark yellowish brown, moderately sorted, fine to coarse grained SAND, trace Silt, moist (SW).			
11							11' 11.1' CLAY & SILT (CL) SAND (SW)		
12						Bottom of Borehole at 12.0 Feet	12'	1 2	

REMARKS

1. No groundwater was encountered during drilling or upon completion.
2. Borehole was backfilled with bentonite grout and tremie pipe placed.

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

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

GZA
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Engineers and Scientists

Wolverine World Wide, Inc.
1855 House Street NE
Belmont, Michigan

Boring No.: WB-16
Page: 1 of 2
File No.: 16.0062335.52
Check: J Cai

Contractor: Stearns Drilling Company
Foreman: Jim/Bryan
Logged by: John Morehouse
Date Start/Finish: 12-1-17 / 12-1-17
Boring Location:
GS Elev.: **Datum:**

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30.0"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	1	24/21	0-2	0-1 1-2		Dark yellowish brown, well sorted, fine grained SAND, little Silt, moist (SM). Changing at 0.2 feet to: Light yellowish brown grading to pale brown, very well sorted, fine grained SAND, trace Silt, banded, moist (SP).	SAND (SM) 0.2' SAND (SP)		None
2	2	24/24	2-4	2-3 3-4		Light yellowish brown grading to pale brown, very well sorted, fine grained SAND, trace Silt, banded, moist (SP).			
4	3	24/16	4-6	2-3 3-4		Light yellowish brown grading to pale brown, very well sorted, fine grained SAND, trace Silt, banded, moist (SP).			

REMARKS

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

BORING WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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1855 House Street NE
Belmont, Michigan

Boring No.: WB-16
Page: 2 **of** 2
File No.: 16.0062335.52
Check: J Cai

Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data				
	4	24/21	6-8	3-4 5-6		Light yellowish brown grading to pale brown, very well sorted, fine grained SAND, trace Silt, banded, moist (SP).	SAND (SP)		
7									
8	5	24/20	8-10	4-6 7-7		Light yellowish brown grading to pale brown, very well sorted, fine grained SAND, trace Silt, banded, moist (SP).			
9									
10							10'	1	
						Bottom of Borehole at 10.0 Feet		2	
11									
12									

REMARKS

1. No groundwater was encountered during drilling or upon completion.
2. Borehole was backfilled with bentonite grout and tremie pipe placed.

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

Boring No.: WB-16

BORING_WELL 6233550 WWW HOUSE STREET NE.GPJ GZA_CORP.GDT 2/8/18

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Wolverine World Wide, Inc.
1758 House Street NE
Belmont, Michigan

Boring No.: SB-8/MW-8
Page: 1 of 3
File No.: 16.0062335.52
Check: Jim Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: John Morehosue
Date Start/Finish: 10-30-17 / 10-30-17
Boring Location:
GS Elev.: 742.20' Datum:

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/20	0-2	1-1 1-3		Very loose, very dark grayish-brown, well sorted, fine grained SAND, little silt, slightly cohesive, moist (SM). Changing at 0.9 feet to: Very loose, yellowish-brown, well sorted, fine to medium grained SAND, trace Silt, moist (SP).	SAND (SM) 0.9' SAND (SP)		PROTECTIVE CASING
2	2	24/6	2-4	2-2 2-1		Very loose, yellowish-brown, well sorted, fine to medium grained SAND, trace Silt, moist (SP).			
4	3	24/15	4-6	2-2 2-1		Very loose, yellowish-brown, well sorted, fine to medium grained SAND, trace Silt, moist (SP).			
6	4	24/17	6-8	2-3 4-6		Loose, yellowish-brown, well sorted, fine to medium grained SAND, trace Silt, moist (SP).			
8	5	24/19	8-10	3-5 5-7		Loose, yellowish-brown, well sorted, fine to medium grained SAND, trace Silt, moist (SP). Changing at 8.5 feet to: Loose, dark yellowish-brown, well sorted, fine grained SAND, little Silt, slightly cohesive, moist (SM). Changing at 8.8 feet to: Loose, light yellowish-brown to brownish-yellow, well sorted, fine to medium grained SAND, trace Silt, moist (SP). Changing at 8.9 feet to: Dark yellowish-brown, moderately well sorted, CLAY & SILT, little Sand, moderately plastic, cohesive, moist (CL). Changing at 9.1 feet to: Loose, light yellowish-brown to brownish-yellow, well sorted, fine to medium grained SAND, trace Silt, moist (SP). Changing at 9.3 feet to: Dark yellowish-brown, moderately well sorted, CLAY & SILT, little Sand, moderately plastic, cohesive, moist (CL). Medium dense, brown, well sorted, fine to medium grained SAND, little Silt, slightly cohesive, moist (SM). Changing at 10.8 feet to: Medium dense, dark yellowish-brown,	8.5' 8.8' SAND (SM) 8.9' SAND (SP) 9.1' CLAY & SILT (CL) 9.3' SAND (SP) 10' CLAY & SILT (CL) SAND (SM) 10.8' SAND (SP)		Grout
10	6	24/18	10-12	6-6 5-5					
12	7	24/17	12-14	3-3 4-4					
14	8	24/17	14-16	3-3 4-5					

REMARKS

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

Boring No.: SB-8/MW-8

BORING WELL 6233552 WWW 1758 HOUSE STREET NE.GPJ GZA_CORP.GDT 1/25/18

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1758 House Street NE
Belmont, Michigan

Boring No.: SB-8/MW-8
Page: 2 of 3
File No.: 16.0062335.52
Check: Jim Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
						very well sorted, fine to medium grained SAND, trace Silt, moist (SP).	SAND (SP)		
16	9	24/18	16-18	3-4 5-5		Loose, dark yellowish-brown, very well sorted, fine to medium grained SAND, trace Silt, moist (SP).			
17						Loose, yellowish-brown, very well sorted, fine to medium grained SAND, trace Silt, moist (SP).			
18	10	24/19	18-20	4-4 4-4		Loose, dark yellowish-brown, very well sorted, fine to medium grained SAND, trace Silt, moist (SP).			
19						Dark yellowish-brown, very well sorted, fine to medium grained SAND, trace Silt, moist (SP).			
20	11	24/16	20-22	2-2 2-3		Very loose, brown to yellowish-brown, well sorted, fine to medium grained SAND, trace Silt, wet (SP).		1	
21									
22	12	24/18	22-24	1-3 2-2		Very loose, brown to yellowish-brown, well sorted, fine to medium grained SAND, trace Silt, wet (SP).			
23									
24	13	24/19	24-26	1-0 0-0		Very loose, brown to yellowish-brown, well sorted, fine to medium grained SAND, trace Silt, wet (SP).			
25									
26	14	24/18	26-28	0-0 0-1		Very loose, brown to yellowish-brown, well sorted, fine to medium grained SAND, trace Silt, wet (SP).			
27									
28	15	24/6	28-30	0-0 0-3		Very loose, brown to yellowish-brown, well sorted, fine to medium grained SAND, trace Silt, wet (SP).			Top of Well Screen
29									
30	16	24/18	30-32	0-1 0-1		Very loose, brown to yellowish-brown, well sorted, fine to medium grained SAND, trace Silt, wet (SP).			Silica Sand Filter Pack 2-Inch Dia. 5-Foot PVC Screen (0.010" Slot)
31									
32	18	24/15	32-34	1-1 2-3		Very loose, brown to yellowish-brown, well			

REMARKS

1. Groundwater was encountered at approximately 20.0 feet below ground surface.

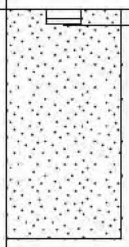
Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING_WELL 6233552 WWW 1758 HOUSE STREET NE.GPJ GZA_CORP.GDT 1/25/18

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Engineers and Scientists

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1758 House Street NE
Belmont, Michigan

Boring No.: SB-8/MW-8
Page: 3 **of** 3
File No.: 16.0062335.52
Check: Jim Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
33						sorted, fine to medium grained SAND, trace Silt, wet (SP).	SAND (SP)		 Bottom of Well Screen
34	19	24/17	34-36	0-1 2-3		Very loose, brown to yellowish-brown, well sorted, fine to medium grained SAND, trace Silt, wet (SP).			
35									
36						Bottom of Borehole at 36.0 Feet	36'	2	
37									
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									
48									
49									

REMARKS

2. Monitoring well was installed in borehole upon completion. Well screen set from 27.7 to 32.7 feet below ground surface.

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

Boring No.: SB-8/MW-8

BORING_WELL 6233552 WWW 1758 HOUSE STREET NE.GPJ GZA_CORP.GDT 1/25/18

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Wolverine World Wide, Inc.
US 131
Belmont, Michigan

Boring No.: MW-10M
Page: 1 of 2
File No.: 16.0062335.52
Check: Jim Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: Joe Workman
Date Start/Finish:
Boring Location:
GS Elev.: Datum:

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1–79						See SB-10/MW-10D boring log for sample description and classification.			PROTECTIVE CASING; Grout

REMARKS

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

BORING_WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

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Belmont, Michigan

Boring No.: MW-10M
Page: 2 of 2
File No.: 16.0062335.52
Check: Jim Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
81–172						Bottom of Borehole at 131.0 Feet		1	Bentonite Seal; Top of Well Screen; Silica Sand Filter Pack; 2-Inch Dia. 5-Foot PVC Screen (0.010" Slot); Bottom of Well Screen

REMARKS

1. Monitoring well was installed in borehole upon completion. Well screen set from 125.0 to 130.0 feet below ground surface.

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

BORING_WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

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US 131
Belmont, Michigan

Boring No.: MW-10S
Page: 1 of 2
File No.: 16.0062335.52
Check: Jim Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: Joe Workman
Date Start/Finish:
Boring Location:
GS Elev.: **Datum:**

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1–29						See SB-10/MW-10D boring log for sample description and classification.			PROTECTIVE CASING; Grout

REMARKS

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

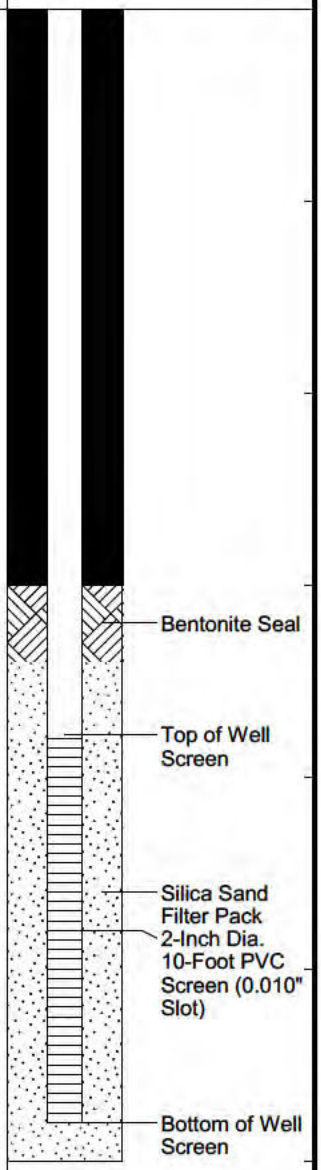
BORING_WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

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US 131
Belmont, Michigan

Boring No.: MW-10S
Page: 2 of 2
File No.: 16.0062335.52
Check: Jim Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
60						Bottom of Borehole at 60.0 Feet		1	



REMARKS

1. Monitoring well was installed in borehole upon completion. Well screen set from 49.0 to 59.0 feet below ground surface.

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

Boring No.: MW-10S

BORING_WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

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Engineers and Scientists

Wolverine World Wide, Inc.
US 131
Belmont, Michigan

Boring No.: MW-11M
Page: 1 of 2
File No.: 16.0062335.52
Check: Jim Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: Julie Groenleer/Joe Workman
Date Start/Finish: 11-8-17 / 11-9-17
Boring Location:
GS Elev.: 742.30' Datum:

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30"	NA
TOC Elev.:	NA	NA

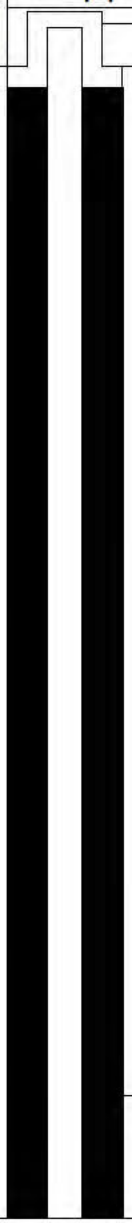
GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks
1–51						See SB-11/MW-11D boring log for sample description and classification.		

Equipment Installed



REMARKS

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

Boring No.: MW-11M

BORING WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

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Wolverine World Wide, Inc.
US 131
Belmont, Michigan

Boring No.: MW-11M
Page: 2 of 2
File No.: 16.0062335.52
Check: Jim Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
100						Bottom of Borehole at 100.0 Feet		1	Top of Well Screen; Silica Sand Filter Pack; 2-Inch Dia. 5-Foot PVC Screen (0.010" Slot); Bottom of Well Screen

REMARKS

1. Monitoring well was installed in borehole upon completion. Well screen set from 95.0 to 10.0 feet below ground surface.

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

Boring No.: MW-11M

BORING WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

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Wolverine World Wide, Inc.
US 131
Belmont, Michigan

Boring No.: MW-11S
Page: 1 of 1
File No.: 16.0062335.52
Check: Jim Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: Joe Workman
Date Start/Finish: 11-9-17 / 11-9-17
Boring Location:
GS Elev.: 742.10' **Datum:**

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30"	NA
TOC Elev.:	NA	NA

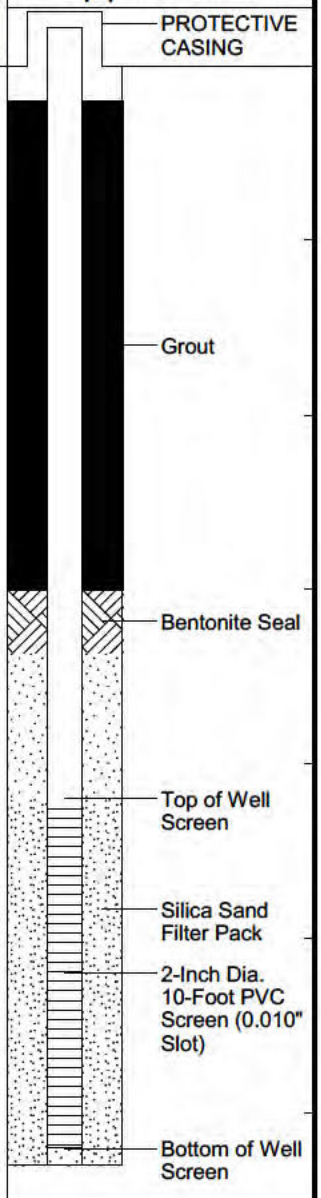
GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks
1–31						See SB-11/MW-11D boring log for sample description and classification.		
32						Bottom of Borehole at 31.5 Feet		1

Equipment Installed



REMARKS

1. Monitoring well was installed in borehole upon completion. Well screen set from 21.0 to 31.0 feet below ground surface.

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

Boring No.: MW-11S

BORING_WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

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Engineers and Scientists

Wolverine World Wide, Inc.
US 131
Belmont, Michigan

Boring No.: MW-9M
Page: 1 of 4
File No.: 16.0062335.52
Check: Jim Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: John Morehouse
Date Start/Finish: 11-17-17 / 11-17-17
Boring Location:
GS Elev.: 817.90' Datum:

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1						See SB-9/MW-9D boring log for sample description and classification.			PROTECTIVE CASING
2									
3									
4									
5									
6									
7									
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29									

REMARKS

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

BORING_WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

GZA
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Engineers and Scientists

Wolverine World Wide, Inc.
US 131
Belmont, Michigan

Boring No.: MW-9M
Page: 2 **of** 4
File No.: 16.0062335.52
Check: Jim Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
31–64									Grout

REMARKS

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

BORING_WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

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US 131
Belmont, Michigan

Boring No.: MW-9M
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File No.: 16.0062335.52
Check: Jim Cai

Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data				
66									
67									
68									
69									
70									
71									
72									
73									
74									
75									
76									
77									
78									
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88									
89									
90									
91									
92									
93									
94									
95									
96									
97									
98									
99									

REMARKS

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

Boring No.: MW-9M

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File No.: 16.0062335.52
Check: Jim Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
131						Bottom of Borehole at 131.0 Feet		1	Top of Well Screen; Silica Sand Filter Pack; 2-Inch Dia. 5-Foot PVC Screen (0.010" Slot); Bottom of Well Screen

REMARKS

1. Monitoring well was installed in borehole upon completion. Well screen set from 126.0 to 131.0 feet below ground surface.

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Boring No.: MW-9M

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Belmont, Michigan

Boring No.: MW-9S
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File No.: 16.0062335.52
Check: Jim Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: John Morehouse
Date Start/Finish: 11-17-17 / 11-17-17
Boring Location:
GS Elev.: 817.80' **Datum:**

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30"	NA
TOC Elev.:	NA	NA

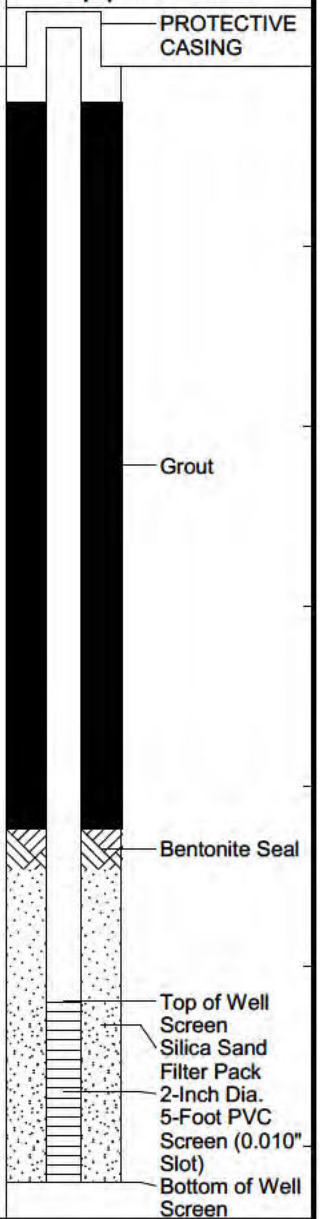
GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks
1–31						See SB-9/MW-9D boring log for sample description and classification.		
31						Bottom of Borehole at 31.0 Feet		1

Equipment Installed



REMARKS

1. Monitoring well was installed in borehole upon completion. Well screen set from 26.0 to 31.0 feet below ground surface.

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Boring No.: MW-9S

BORING WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

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Wolverine World Wide, Inc.
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Belmont, Michigan

Boring No.: SB-10/MW-10D
Page: 1 of 10
File No.: 16.0062335.52
Check: Jim Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: Julie Groenleer/Joe Workman
Date Start/Finish: 11-20-17 / 11-28-17
Boring Location:
GS Elev.: 778.10' **Datum:**

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/17	0-2	2-2 3-2		TOPSOIL. Changing at 0.6 feet to: Loose, brown, fine to medium SAND, trace Silt, damp (SP).	TOPSOIL 0.6' SAND (SP)		PROTECTIVE CASING
2	2	24/16	2-4	2-3 8-7		Medium dense, brown, fine to medium SAND, trace Silt, damp (SP).			
4	3	24/0	4-6	4-5 6-8		NO RECOVERY.	4' NO RECOVERY		
6	4	24/18	6-8	3-3 4-4		Loose, brown, fine to medium SAND, trace Silt, damp (SP).	6' SAND (SW)		
8	5	24/14	8-10	2-4 4-4		Loose, brown, fine to medium SAND, trace Silt, damp (SP).			
10	6	24/20	10-12	2-5 7-5		Medium dense, brown, fine to medium SAND, trace Silt, damp (SP).			
12	7	24/12	12-14	3-2 3-3		Loose, brown, fine to medium SAND, trace Silt, damp (SP).			
14	8	24/21	14-16	3-3 3-4		Loose, brown, fine to medium SAND, trace Silt, damp (SP).			
16	9	24/20	16-18	2-4 4-6		Loose, brown, fine to medium SAND, trace Silt, damp (SP).			

REMARKS

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Check: Jim Cai

Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data				
19	10	24/18	18-20	3-6 6-6		Medium dense, brown, fine to medium SAND, trace Silt, damp (SP).	SAND (SW)		
20	11	24/17	20-22	3-4 6-7		Loose, brown, fine to medium SAND, trace Silt, damp (SP).			
22	12	24/19	22-24	3-5 6-7		Medium dense, brown, fine to medium SAND, trace Silt, damp (SP).			
24	13	24/22	24-26	4-6 8-8		Medium dense, brown, fine to medium SAND, trace Silt, damp (SP).			
26	14	24/18	26-28	6-13 13-18		Medium dense, brown, fine to medium SAND, trace Silt, damp (SP).			
28	15	24/20	28-30	10-13 21-20		Dense, brown, fine to medium SAND, trace Silt, damp (SP).			
30	16	24/20	30-32	10-16 21-24		Dense, brown, fine to medium SAND, trace Silt, damp (SP).			
32	17	24/22	32-34	11-16 24-27		Dense, brown, fine to medium SAND, trace Silt, damp (SP).			
34	18	24/18	34-36	10-16 26-32		Dense, brown, fine to medium SAND, trace Silt, damp (SP).			
36	19	24/19	36-38	12-21 25-29		Dense, brown, fine to medium SAND, trace Silt, damp (SP).			
38	20	24/16	38-40	8-18 21-27		Dense, brown, fine to medium SAND, trace Silt, damp (SP).			

REMARKS

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Check: Jim Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
							SAND (SW)		
40–41	21	24/23	40-42	14-20 22-25		Dense, brown, fine to medium SAND, trace Silt, damp (SP).			
42–43	22	24/20	42-44	8-12 17-21		Medium dense, brown, fine to medium SAND, trace Silt, damp (SP).			
44–45	23	24/24	44-46	7-10 10-9		Medium dense, brown, fine to medium SAND, trace Silt, damp (SP).			
46–47	24	24/18	46-48	7-13 14-14		Medium dense, brown, fine to medium SAND, trace Silt, trace Gravel, damp (SP).			
48–49	25	24/24	48-50	9-11 11-12		Medium dense, brown, fine to medium SAND, trace Silt, trace Gravel, damp (SP).			
50–51	26	24/16	50-52	9-11 13-10		Medium dense, brown, fine to medium SAND, trace Silt, moist (SP).			
52–53	27	24/24	52-54	9-11 11-7		Medium dense, brown, fine to medium SAND, trace Silt, moist (SP). Changing at 53.0 feet to: Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).		1	
54–55	28	24/17	54-56	3-3 6-8		Loose, brown, fine to medium SAND, trace Silt, wet (SP).			
56–57	29	24/18	56-58	2-3 7-7		Loose, brown, fine to coarse SAND, trace Silt, trace fine Gravel, wet (SW).			
58–59	30	24/13	58-60	4-8 8-10		Medium dense, brown, fine to coarse SAND, trace Silt, trace fine Gravel, wet (SW).			

REMARKS

1. Groundwater was encountered at approximately 53.0 feet below ground surface.

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
61	31	24/6	60-62	2-4 6-9		Loose, brown, fine to coarse SAND, trace Silt, trace fine Gravel, wet (SW).	SAND (SW)		
62	32	24/3	62-64	6-8 13-20		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).	62' SAND (SP)		
63									
64	33	24/12	64-66	4-9 10-15		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
65									
66	34	24/12	66-68	2-5 8-11		Medium dense, brown, fine to medium SAND, little Silt, wet (SM).	66' SAND (SM)		
67									
68	35	24/8	68-70	5-7 13-15		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).	68' SAND (SP)		
69									
70	36	24/11	70-72	3-3 7-8		Loose, brown, fine to medium SAND, trace Silt, wet (SP).			
71									
72	37	24/13	72-74	2-4 10-10		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
73									
74	38	24/20	74-76	2-3 5-12		Loose, brown, fine to medium SAND, trace Silt, wet (SP).			
75									
76	39	24/17	76-78	3-8 10-13		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
77									
78	40	24/12	78-80	4-5 8-15		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
79									
80	41	24/21	80-82	4-12 19-22		Dense, brown, fine to medium SAND, trace Silt, wet (SP).			

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
							SAND (SP)		
82–83	42	24/13	82-84	4-12 21-25		Dense, brown, fine to medium SAND, trace Silt, wet (SP).			
84–85	43	24/22	84-86	6-10 15-15		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
86–87	44	24/18	86-88	3-7 7-15		Medium dense, brown, fine to medium SAND, trace Silt, trace coarse Sand, wet (SP).			
88–89	45	24/19	88-90	5-11 15-16		Medium dense, brown, fine to medium SAND, trace Silt, trace coarse Sand, wet (SP).			
90–91	46	24/16	90-92	4-8 20-22		Medium dense, brown, fine to medium SAND, trace Silt, trace coarse Sand, wet (SP).			Grout
92–93	47	24/20	92-94	4-7 15-19		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
94–95	48	20/20	94-95.7	4-12 38-50/4"		Dense, brown, fine to medium SAND, trace Silt, wet (SP).			
96–97	49	24/22	96-98	7-14 22-30		Dense, brown, fine to medium SAND, trace Silt, wet (SP).			
98–99	50	24/4	98-100	5-8 15-22		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
100–101	51	24/18	100-102	3-8 13-21		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
103	52	24/20	102-104	4-5 15-19		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).	SAND (SP)		
104	53	24/18	104-106	6-7 13-21		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
105									
106	54	24/13	106-108	5-13 29-45		Dense, brown, fine to medium SAND, trace Silt, wet (SP).			
107									
108	55	24/17	108-110	5-11 21-35		Dense, brown, fine to medium SAND, little Silt, wet (SM).	108' SAND (SM)		
109									
110	56	24/20	110-112	4-13 32-56		Dense, brown, fine to medium SAND, trace Silt, wet (SP).	110' SAND (SP)		
111									
112	57	24/7	112-114	5-11 18-31		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
113									
114	58	24/18	114-116	3-7 18-35		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
115									
116	59	24/8	116-118	2-2 3-5		Loose, brown, fine to medium SAND, trace Silt, wet (SP).			
117									
118	60	24/17	118-120	2-8 36-50		Dense, brown, fine to medium SAND, trace Silt, wet (SP).			
119									
120	61	17/8	120-121.4	14-37-50/5"		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).			
121									
122	62	22/20	122-123.8	11-26 34-50/4"		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).			

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Check: Jim Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
							SAND (SP)		
124	63	24/11	124-126	1-1 15-25		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
125									
126	64	24/0	126-128	2-3 8-21		NO RECOVERY.	126' NO RECOVERY		
127									
128	65	24/21	128-130	6-6 16-23		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).	128' SAND (SP)		
129									
130	66	24/13	130-132	1-10 12-15		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
131									
132	67	24/4	132-134	8-9 23-50		Dense, brown, fine to medium SAND, trace Silt, wet (SP).			
133									
134	68	20/12	134-135.7	5-12 26-50/4"		Dense, brown, fine to medium SAND, trace Silt, wet (SP).			
135									
136	69	20/13	136-137.7	3-7 31-50/2"		Dense, brown, fine to medium SAND, trace Silt, wet (SP).			
137									
138	70	16/11	138-139.3	12-21-50/4"		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).			
139									
140	71	15/15	140-141.3	4-25-50/3"		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).			
141									
142	72	12/12	142-143	19-50/6"		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).			
143									

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
145	73	24/21	144-146	9-13 28-27		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).	SAND (SP)		
146	74	18/16	146-147.5	11-29-50/6"		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).			
147									
148	75	24/20	148-150	6-13 32-50		Dense, brown, fine to medium SAND, trace Silt, wet (SP). Changing at 149.7 feet to: Dense, brown, fine SAND, little Silt, wet (SM).			
149							149.7' SAND (SM)		
150	76	15/13	150-151.3	6-21-50/3"		Dense, brown, fine SAND, little Silt, wet (SM). Changing at 150.6 feet to: Very dense, brown, fine to medium SAND, trace Silt, wet (SP).	150.6' SAND (SP)		
151									
152	77	11/11	152-152.9	11-50/5"		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).			
153									
154	78	14/13	154-155.2	8-41-50/2"		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).			
155									
156	79	24/17	156-158	8-15 27-50		Dense, brown, fine to medium SAND, trace Silt, wet (SP).			
157									
158	80	12/12	158-159	6-14		Dense, brown, fine to medium SAND, trace Silt, wet (SP).			
159									
160	81	24/11	160-162	3-5 10-16		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
161									
162	82	16/11	162-163.3	17-43-50/4"		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).			
163									
164	83	16/16	164-165.3	12-50-50/4"		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).			

REMARKS

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
							SAND (SP)		
166	84	23/15	166-167.9	10-28 34-50/5"		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).			
167									
168	85	24/24	168-170	7-17 23-20		Dense, brown, fine to medium SAND, trace Silt, wet (SP).			
169									
170	86	23/23	170-171.9	6-12 19-50/5"		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP). Changing at 171.0 feet to: Very dense, gray, fine to medium SAND, little Clay & Silt, trace coarse Sand, trace fine Gravel, wet (SC).	171' SAND (SC)		
171									
172	87	24/24	172-174	16-28 48-36		Very dense, gray, fine to medium SAND, trace Silt, wet (SP). Changing at 173.0 feet to: Very dense, gray, fine to coarse SAND, little Clay & Silt, little fine Gravel, wet (SC). Changing at 173.5 feet to: Very dense, gray, fine to medium SAND, trace Silt, wet (SP). Changing at 173.9 feet to: Very dense, gray, fine to coarse SAND, little Clay & Silt, little fine Gravel, moist (SC).	172' SAND (SP) 173' SAND (SC) 173.5' SAND (SP) 173.9' SAND (SC)		
173									
174	88	7/7	174-174.6	50-50/1"			174' SAND (SP)		
175									
176	89	24/24	176-178	12-29 31-35		Very dense, gray, fine to medium SAND, trace coarse Sand, trace Clay & Silt, wet (SP). Very dense, gray, fine to coarse SAND, some fine to coarse Gravel, trace Clay & Silt, wet (SW).	176' SAND (SW)		
177									
178	90	24/24	178-180	16-20 17-42		Very dense, gray, fine to coarse SAND, little fine Gravel, trace Clay & Silt, wet (SW).			
179									
180	91	17/17	180-181.4	3-16-50/5"		Medium dense, gray, fine to coarse SAND, little fine Gravel, trace Silt, wet (SW). Changing at 181.5 feet to: Very dense, gray, fine to medium SAND, little Silt, wet (SM).	181.5' SAND (SM)		
181									
182	92	10/10	182-182.8	11-50/4"		Very dense, fine to coarse SAND, little fine to coarse Gravel, trace Silt, wet (SW).	182' SAND (SW)		Bentonite Seal
183									
184	93	4/4	184-184.3	75/4"		Very dense, gray, fine to medium SAND, little Clay & Silt, trace coarse Sand, trace fine fine Gravel, moist (SC).	184' SAND (SC)		
185									Top of Well Screen
							186'		

REMARKS

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

BORING WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
US 131
Belmont, Michigan

Boring No.: SB-10/MW-10D
Page: 10 of 10
File No.: 16.0062335.52
Check: Jim Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
187	94	3/3	186-186.3	50/3"		Very dense, gray, fine to coarse SAND, some fine to coarse Gravel, trace Cobble, trace Silt, wet (SW).	SAND (SW)		Silica Sand Filter Pack
188	95	2/2	188-188.2	50/2"		Very dense, gray, fine to coarse SAND, some fine to coarse Gravel, trace Cobble, trace Silt, wet (SW).			2-Inch Dia. 5-Foot PVC Screen (0.010" Slot)
189									
190	96	3/1	190-190.3	50/3"		NO RECOVERY.	190' NO RECOVERY (Rock Fragment in Tip)		Bottom of Well Screen
191									
192						Bottom of Borehole at 192.0 Feet	192'	2	
193									
194									
195									
196									
197									
198									
199									
200									
201									
202									
203									
204									
205									
206									

REMARKS

2. Monitoring well installed upon completion.

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

Boring No.: SB-10/MW-10D

BORING WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
US 131
Belmont, Michigan

Boring No.: SB-11/MW-11D
Page: 1 of 5
File No.: 16.0062335.52
Check: Jim Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: Julie Groenleer
Date Start/Finish: 11-6-17 / 11-8-17
Boring Location:
GS Elev.: 742.10' **Datum:**

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1	1	24/22	0-2	0-1 1-1	1.5 tsf	TOPSOIL. Changing at 0.2 feet to: Very loose, brown, fine to medium SAND, little Silt, damp (SM). Changing at 0.8 feet to: Stiff, brown, CLAY & SILT, trace fine Sand, moist (CL). Changing at 1.4 feet to: Very loose, dark brown, fine to medium SAND, little Clay, little Silt, damp (SC).	0.2' TOPSOIL 0.8' SAND (SM) 1.4' CLAY & SILT (CL) 2' SAND (SC)	1	PROTECTIVE CASING
2	2	24/24	2-4	5-6 7-5					
3									
4	3	24/18	4-6	4-5 5-5		Medium dense, brown, fine to medium SAND, little Silt, moist (SM).			
5							5.5'		
6	4	24/24	6-8	1-1 2-2	1.0 tsf 1.0 tsf	Loose, brown, fine to medium SAND, little Silt, moist (SM). Changing at 5.5 feet to: Stiff, brown, CLAY & SILT, little fine to coarse Sand, moist (CL).	CLAY & SILT (CL)		
7									
8	5	24/22	8-10	2-3 2-2		Stiff, brown, CLAY & SILT, little fine Sand, moist (CL).	8' SAND (SM)		
9						Loose, brown, fine to medium SAND, little Silt, moist (SM).			
10	6	24/22	10-12	2-2 2-2		Very loose, brown, fine to medium SAND, little Silt, moist (SM). Changing at 11.9 feet to: Sitff, brown, CLAY & SILT, little fine to medium Sand, moist (CL).			
11									
12	7	24/22	12-14	2-5 9-11	2.0 tsf >4.0 tsf		11.9' CLAY & SILT (CL)		
13						Hard, brown with gray mottling, CLAY & SILT, trace fine to coarse Sand, damp (CL).			
14	8	24/24	14-16	7-14 15-12	>4.0 tsf	Hard, brown with gray mottling, CLAY & SILT, trace fine to coarse Sand, damp (CL).			
15									
16	9	24/14	16-18	1-3 3-3		Loose, brown, fine to medium SAND, little Silt, moist (SM).	16' SAND (SM)		
17									
18	10	24/16	18-20	1-4 3-2	2.25 tsf	Very stiff, brown, CLAY & SILT, trace fine to coarse Sand, moist (CL). Changing at 19.5 feet to: Loose, brown, fine to medium SAND, little Silt, moist (SM).	18' CLAY & SILT (CL) 19.5' SAND (SM)		
19									
20	11	24/4	20-22	4-6 3-3		Loose, brown, fine to medium SAND, little Silt, moist (SM).			
21									
22	12	24/24	22-24	1-7 7-7		Medium dense, brown, fine to medium Silty SAND, moist (SM). Changing at 22.9 feet to: Very stiff, brown, CLAY & SILT, little fine Sand, damp (CL). Changing at 23.8 feet to: Medium dense, brown, fine to medium SAND, little Silt, moist (SM).	22.9' CLAY & SILT (CL) 23.8' SAND (SM)		
23					2.25 tsf				
24	13	24/12	24-26	1-1 1-1				2	
25									
26	14	24/24	26-28	1-5 7-10		Very loose, brown, fine to medium SAND, little Silt, wet (SM). Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).	26' SAND (SP)		
27									
28	15	24/18	28-30	8-9 10-11		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
29									

REMARKS

1. Pocket penetrometer readings were measured in tons per square foot (tsf) and are used to evaluate consistency of cohesive soil.
2. Groundwater was encountered at approximately 24.0 feet below ground surface.

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BORING_WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
US 131
Belmont, Michigan

Boring No.: SB-11/MW-11D
Page: 2 of 5
File No.: 16.0062335.52
Check: Jim Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
31	16	24/10	30-32	2-5 8-14		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).	SAND (SP)		
32 33	17	24/15	32-34	2-7 8-9		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
34 35	18	24/10	34-36	3-8 13-11		Medium dense, brown, fine to medium SAND, trace coarse Sand, trace Silt, wet (SP).			
36 37	19	24/18	36-38	7-8 10-10		Medium dense, brown, fine to medium SAND, trace coarse Sand, trace Silt, wet (SP). Changing at 37.4 feet to: Medium dense, brown, fine SAND, little Silt, wet (SM).	37.4'		
38 39	20	24/18	38-40	2-2 5-6			38' SAND (SM)		
40 41	21	24/12	40-42	2-2 5-12		Loose, brown, fine SAND, trace Silt, wet (SP). Loose, brown, fine SAND, trace Silt, wet (SP).	SAND (SP)		
42 43	22	24/16	42-44	2-4 5-7		Loose, brown, fine SAND, trace Silt, wet (SP).			
44 45	23	24/18	44-46	3-8 9-10		Medium dense, brown, fine SAND, trace Silt, wet (SP).			
46 47	24	24/24	46-48	2-7 7-9		Medium dense, brown, fine to coarse SAND, trace fine Gravel, trace Silt, wet (SW).	46' SAND (SW)		
48 49	25	24/24	48-50	2-7 10-12		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP). Changing at 49.2 feet to: Medium dense, brown, fine to coarse SAND, trace fine Gravel, trace Silt, wet (SW).	48' SAND (SP) 49.2'		
50 51	26	24/10	50-52	2-11 14-22		Medium dense, brown, fine SAND, trace Silt, wet (SP).	50' SAND (SW) SAND (SP)		
52 53	27	24/6	52-54	4-8 15-22		Medium dense, brown, fine SAND, trace Silt, wet (SP).		3	
54 55	28	24/14	54-56	2-4 7-11		Medium dense, brown, fine SAND, trace Silt, wet (SP).			
56 57	29	24/24	56-58	2-4 6-6		Loose, brown, fine SAND, little Silt, wet (SM).	56' SAND (SM)		
58 59	30	24/24	58-60	2-4 7-11		Medium dense, brown, fine SAND, trace Silt, wet (SP).	58' SAND (SP)		
60 61	31	24/18	60-62	5-8 13-22		Medium dense, brown, fine SAND, some Silt, wet (SM).	60' SAND (SM)		
62 63	32	24/20	62-64	3-6 8-10		Medium dense, brown, fine SAND, some Silt, wet (SM).			
64	33	24/18	64-66	3-5 6-6		Medium dense, brown, fine SAND, some			

REMARKS

3. Rock in tip.

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BORING_WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
US 131
Belmont, Michigan

Boring No.: SB-11/MW-11D
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File No.: 16.0062335.52
Check: Jim Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
66						Silt, wet (SM).	SAND (SM)		
67	34	24/22	66-68	3-7 13-11		Medium dense, brown, fine SAND, some Silt, wet (SM). Changing at 67.1 feet to:	67.1'		
68						Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).	SAND (SP)		
69	35	24/22	68-70	3-5 8-6		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP). Changing at	68.8'		
70						68.8 feet to: Medium dense, brown, fine SAND, little Silt, wet (SM).	SAND (SM)		
71	36	24/23	70-72	2-3 4-5		Loose, brown, fine SAND, trace Silt, wet (SP).	70' SAND (SP)		
72	37	24/20	72-74	3-4 6-8		Loose, brown, fine SAND, trace Silt, wet (SP).			
73									Grout
74	38	24/24	74-76	3-3 5-9		Loose, brown, fine SAND, trace Silt, wet (SP).			
75							76'		
76	39	24/0	76-78	6-10 15-13		NO RECOVERY.	NO RECOVERY		
77							78'		
78	40	24/17	78-80	2-2 5-11		Loose, brown, fine SAND, trace Silt, wet (SP).	SAND (SP)		
79									
80	41	24/12	80-82	2-4 9-10		Medium dense, brown, fine SAND, trace Silt, wet (SP).			
81									
82	42	24/24	82-84	3-3 5-6		Loose, brown, fine SAND, trace Silt, wet (SP).			
83							84'		
84	43	24/0	84-86	2-4 5-9		NO RECOVERY.	NO RECOVERY		
85							86'		
86	44	24/18	86-88	1-2 5-12		Loose, brown, fine SAND, trace Silt, wet (SP).	SAND (SP)		
87									
88	45	24/8	88-90	6-5 8-11		Medium dense, brown, fine SAND, trace Silt, wet (SP).			
89									
90	46	24/18	90-92	2-4 7-11		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
91									
92	47	24/0	92-94	2-3 6-10		NO RECOVERY.	92' NO RECOVERY		
93							94'		
94	48	24/16	94-96	2-4 4-8		Loose, brown, fine to medium SAND, trace Silt, wet (SP). Changing at 95.8 feet to:	SAND (SP)		
95						Loose, brown fine SAND, little Silt, wet (SM).	95.8'		
96	49	24/12	96-98	2-3 4-5		Loose, brown fine SAND, little Silt, wet (SM).	SAND (SM)		
97							98'		
98	50	24/16	98-100	2-3 6-8		Loose, brown, fine SAND, trace Silt, wet (SP).	SAND (SP)		
99									

REMARKS

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BORING WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
US 131
Belmont, Michigan

Boring No.: SB-11/MW-11D
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File No.: 16.0062335.52
Check: Jim Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
101	51	24/4	100-102	2-5 10-14		Medium dense, brown, fine SAND, trace Silt, wet (SP).	SAND (SP)		
102 103	52	24/12	102-104	2-7 13-15		Medium dense, brown, fine SAND, trace Silt, wet (SP).			
104 105	53	24/0	104-106	7-14 15-20		NO RECOVERY.	104' NO RECOVERY		
106 107	54	24/19	106-108	1-3 8-13		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).	106' SAND (SP)		
108 109	55	24/18	108-110	2-4 6-8		Loose, brown, fine to medium SAND, trace Silt, wet (SP).			
110 111	56	24/10	110-112	7-14 18-17		Dense, brown, fine to medium SAND, trace Silt, wet (SP).			
112 113	57	24/0	112-114	4-8 10-13		NO RECOVERY.	112' NO RECOVERY		
114 115	58	24/10	114-116	8-10 11-15		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).	114' SAND (SP)		
116 117	59	24/10	116-118	1-2 2-2		Very loose, brown, fine to medium SAND, trace Silt, wet (SP).			
118 119	60	24/19	118-120	2-2 5-7		Loose, brown, fine to medium SAND, trace Silt, wet (SP).			
120 121	61	24/21	120-122	2-2 5-7		Loose, brown, fine to medium SAND, trace Silt, wet (SP).			
122 123	62	24/23	122-124	2-2 7-8		Loose, brown, fine to medium SAND, trace Silt, wet (SP).			
124 125	63	24/20	124-126	6-7 10-13		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
126 127	64	24/20	126-128	3-3 4-4		Loose, brown, fine to medium SAND, trace Silt, wet (SP). Changing at 127.5 feet to:	127.5'		
128 129	65	24/12	128-130	3-4 12-14	<0.25 tsf <0.25 tsf	Soft, gray, CLAY & SILT, little fine to medium Sand, moist (CL). Soft, gray, CLAY & SILT, little fine to medium Sand, moist (CL). Changing at 128.2 feet to: Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).	128.2' CLAY & SILT (CL) SAND (SP)		
130 131	66	24/9	130-132	2-5 13-15		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
132 133	67	24/15	132-134	4-10 18-21		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
134	68	24/16	134-136	6-13 18-23	0.25 tsf	Medium dense, brown, fine to medium SAND, trace Silt, wet (SP). Changing at 133.2 feet to: Soft, gray, CLAY & SILT, some fine to medium Sand, moist (CL). Changing at 133.9 feet to: Medium dense,	133.2' 133.9' CLAY & SILT (CL) SAND (SP)		

REMARKS

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

BORING_WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

GZA GeoEnvironmental, Inc.
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Wolverine World Wide, Inc.
US 131
Belmont, Michigan

Boring No.: SB-11/MW-11D
Page: 5 of 5
File No.: 16.0062335.52
Check: Jim Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
136						brown, fine to medium SAND, trace Silt, wet (SP).	SAND (SP)		
137	69	24/14	136-138	2-4 12-15		Dense, brown, fine to medium SAND, trace Silt, wet (SP).			
138	70	24/8	138-140	3-10 20-21		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
139						Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
140	71	24/18	140-142	3-4 15-18		Medium dense, brown, fine to medium SAND, trace Silt, wet (SP).			
141									
142	72	24/16	142-144	4-11 19-24		Medium dense, brown, fine to medium SAND, trace Silt, trace fine Gravel, wet (SP).			
143							144'		
144	73	24/18	144-146	11-13 23-33		Dense, brown, fine to coarse SAND, trace Silt, trace Gravel, wet (SW).	SAND (SW)		
145							146'		
146	74	24/10	146-148	9-13 30-30		Dense, brown, fine to medium SAND, trace Silt, trace coarse Sand, wet (SP).	SAND (SP)		
147									
148	75	24/10	148-150	9-18 26-34		Dense, brown, fine to medium SAND, trace Silt, trace coarse Sand, wet (SP).			
149									
150	76	24/21	150-152	9-23 29-40		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).			
151									
152	77	18/18	152-153.5	25-42-50		Very dense, brown, fine to medium SAND, trace Silt, wet (SP).		4	
153							154'		
154	78	24/24	154-156	11-13 15-18		Medium dense, brown, fine to medium SAND, some Silt, wet (SM).	SAND (SM)		
155									
156	79	24/24	156-158	7-17 37-30		Very dense, brown, fine SAND, some Silt, wet (SM). Changing at 157.7 feet to: Hard, gray, CLAY & SILT, little fine Sand, moist (CL).	157.7'		
157							CLAY & SILT (CL)		
158	80	24/24	158-160	8-18 27-26	>4.0 tsf >4.0 tsf	Hard, gray, CLAY & SILT, little fine Sand, moist (CL). Changing at 159.1 feet to: Dense, gray, fine SAND, some Silt, wet (SM). Changing at 159.9 feet to: Hard, gray, CLAY & SILT, little fine Sand, moist (CL).	159.1'		
159							SAND (SM)		
160	81	24/24	160-162	6-10 18-20	>4.0 tsf >4.0 tsf		159.9'		
161							CLAY & SILT (CL)		
162						Hard, gray, CLAY & SILT, some fine Sand, moist (CL).	162'	5	
163						Bottom of Borehole at 162.0 Feet			
164									
165									
166									
167									
168									
169									

Top of Well Screen
Silica Sand Filter Pack
2-Inch Dia. 5-Foot PVC Screen (0.010" Slot)
Bottom of Well Screen

REMARKS

4. Only drove spoon 18 inches due to high blow counts.
5. Monitoring well was installed in borehole upon completion. Well screen set from 150.0 to 155.0 feet below ground surface.

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Boring No.: SB-11/MW-11D

BORING WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
US 131
Belmont, Michigan

Boring No.: SB-9/MW-9D
Page: 1 of 16
File No.: 16.0062335.52
Check: Jim Cai

Contractor: Stearns Drilling Company
Foreman: Jerry Huntoon
Logged by: Joe Workman/John Morehouse
Date Start/Finish: 11-10-17 / 11-17-17
Boring Location:
GS Elev.: 818.20' Datum:

	Auger/ Casing	Sampler
Type:	Hollow Stem Auger	Split Spoon
O.D. / I.D.:	8.0" / 4.25"	2.0" / 1 3/8"
Hammer Wt.:	140lbs	NA
Hammer Fall:	30"	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks
0	1	24/13	0-2	2-2 1-2	1.0 tsf	Stiff, brown, CLAY & SILT, trace fine to medium Sand, trace Organic Matter, damp (CL).	CLAY & SILT (CL)	1
2	2	24/6	2-4	1-2 3-5	1.5 tsf	Stiff, brown, CLAY & SILT, trace fine to coarse Sand, trace fine Gravel, damp (CL).		
4	3	24/24	4-6	2-4 7-8	3.5 tsf	Very stiff, brown, CLAY & SILT, trace fine Sand, damp (CL).		
6	4	24/24	6-8	4-5 9-11	3.0 tsf	Very stiff, brown, CLAY & SILT, trace fine Sand, damp (CL).		
8	5	24/24	8-10	2-4 7-9	2.5 tsf 3.5 tsf	Very stiff, brown, CLAY & SILT, trace fine Sand, damp (CL). Changing at 9.0 feet to: Very stiff, brown, CLAY & SILT, little fine to coarse Sand, trace fine Gravel, damp (CL).		
10	6	24/24	10-12	4-5 13-12	1.0 tsf 3.5 tsf	Stiff, brown, CLAY & SILT, little fine to coarse Sand, trace fine Gravel, damp (CL). Changing at 11.0 feet to: Very stiff, brown and gray, CLAY & SILT with intermittent 1/8 inch seams of fine to medium Sand, damp (CL).		

Equipment Installed: PROTECTIVE CASING

REMARKS

1. Pocket penetrometer readings were measured in tons per square foot (tsf) and are used to evaluate consistency of coheisve soil.

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US 131
Belmont, Michigan

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
13	7	24/24	12-14	4-8 12-10	3.5 tsf 3.0 tsf	Very stiff, brown and gray, CLAY & SILT with intermittent 1/8 inch seams of fine to medium Sand, damp (CL). Changing at 13.2 feet to: Very stiff, gray, CLAY & SILT, little fine to coarse Sand, trace fine Gravel, damp (CL).	CLAY & SILT (CL)		
14	8	24/24	14-16	3-4 7-11	3.0 tsf	Very stiff, gray, CLAY & SILT, little fine to coarse Sand with intermittent 1/16" seams of fine to medium Sand, damp (CL).			
16	9	24/24	16-18	3-5 9-12	3.0 tsf	Very stiff, brown and gray CLAY & SILT, trace fine to medium Sand, damp (CL). Changing at 17.7 feet to: Medium dense, brown, fine to medium SAND, trace Silt, damp (SP).	17.7' SAND (SP)		
18	10	24/13	18-20	2-6 7-8		Medium dense, brown, fine to medium SAND, trace coarse Sand, trace Silt, damp (SP).			
20	11	24/8	20-22	6-13 12-11	3.0 tsf	Very stiff, brown, CLAY & SILT, little fine to coarse Sand, damp (CL). Changing at 21.0 feet to: Medium dense, brown, fine to coarse SAND, little fine to coarse Gravel, trace Silt, damp (SW).	20' CLAY & SILT (CL) 21' SAND (SP)		
22	12	24/20	22-24	5-5 7-8		Medium dense, brown, fine to medium SAND, trace coarse Sand, trace fine to coarse Gravel, trace Silt, damp (SP).			
24	13	24/20	24-26	2-2 2-3		Medium dense, brown, fine to medium SAND, trace coarse Sand, trace fine to coarse Gravel, trace Silt, wet (SP).		2	

REMARKS

2. Groundwater was encountered at approximately 24.0 feet below ground surface.

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	14	24/13	26-28	1-1 3-2		Loose, brown, fine to medium SAND, trace coarse Sand, trace Silt, wet (SP).	SAND (SP)		
27									
28	15	24/14	28-30	1-1 2-3		Loose, brown, fine to medium SAND, trace coarse Sand, trace Silt, wet (SP).			
29									
30	16	24/24	30-32	3-1 3-4		Loose, brown, fine to medium SAND, trace coarse Sand, trace Silt, wet (SP). Changing at 31.0 feet to: Stiff, brown, CLAY & SILT, little fine to coarse Sand, moist (CL).	31'		
31					1.0 tsf		CLAY & SILT (CL)		
32	17	24/8	32-34	2-5 4-4	0.25 tsf	Very soft, brown, CLAY & SILT, some fine to coarse Sand, little fine Gravel, moist (CL).			
33									
34	18	24/14	34-36	6-3 6-7	1.5 tsf	Stiff, brown, CLAY & SILT, some fine to coarse Sand, little fine Gravel, damp (CL).			
35									
36	19	24/15	36-38	6-8 12-14	2.5 tsf	Very stiff, brown, CLAY & SILT, little fine to coarse Sand, trace fine Gravel, damp (CL).			
37									
38	20	24/14	38-40	8-16 12-12	3.5 tsf	Very stiff, gray, CLAY & SILT, some fine to coarse Sand, trace Cobbles (based on fragments), damp (CL).			
39									

REMARKS

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
41	21	24/16	40-42	2-9 31-17	>4.0 tsf	Hard, gray, CLAY & SILT, some fine to coarse Sand, trace fine to coarse Gravel, damp (CL).	CLAY & SILT (CL)		
42	22	24/22	42-44	3-4 10-14	2.5 tsf	Very stiff, gray, CLAY & SILT, little fine to coarse Sand, trace fine Gravel, damp (CL).			
44	23	24/19	44-46	4-6 15-18	3.0 tsf	Very stiff, gray, CLAY & SILT, little fine to coarse Sand, trace fine to coarse Gravel, damp (CL).			
46	24	24/20	46-48	3-15 32-28	>4.0 tsf	Hard, gray, CLAY & SILT, little fine to coarse Sand, trace fine to coarse Gravel, damp (CL).			
48	25	24/20	48-50	4-18 22-30	>4.0 tsf	Hard, gray, CLAY & SILT, little fine to coarse Sand, damp (CL).			
50	26	24/0	50-52	25-29 35-45		NO RECOVERY.	50' NO RECOVERY		
52	27	24/20	52-54	26-24 30-31	>4.0 tsf	Hard, gray, CLAY & SILT, some fine to coarse Sand, little fine to coarse Gravel, trace Cobbles (based on fragments), damp (CL).	52' CLAY & SILT (CL)		

REMARKS

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
55	28	24/24	54-56	10-17 20-30	4.0 tsf	Hard, gray, CLAY & SILT, little fine to coarse Sand, trace fine Gravel, damp (CL).	CLAY & SILT (CL)		
56	29	24/0	56-58	24-40 49-54		NO RECOVERY.	56' NO RECOVERY		
58	30	24/24	58-60	8-18 20-31	>4.0 tsf	Hard, gray, CLAY & SILT, little fine to coarse Sand, trace fine Gravel, damp (CL).	58' CLAY & SILT (CL)		
60	31	24/24	60-62	5-4 18-24	4.0 tsf	Hard, gray, CLAY & SILT, little fine to coarse Sand, trace fine Gravel, damp (CL).			
62	32	24/24	62-64	6-14 14-15		Brown, poorly sorted, SILT & CLAY, little Sand, trace gravel, plastic, cohesive, moist (ML).	62' SILT & CLAY (ML)		
64	33	24/24	64-66	6-12 15-17		Brown, poorly sorted, SILT & CLAY, little Sand, trace gravel, plastic, cohesive, moist (ML).			
66	34	24/24	66-68	5-9 14-25		Brown, poorly sorted, SILT & CLAY, little Sand, trace gravel, plastic, cohesive, moist (ML).			

REMARKS

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
69	35	24/24	68-70	9-14 19-26		Brown, poorly sorted, SILT & CLAY, little Sand, trace gravel, plastic, cohesive, moist (ML).	SILT & CLAY (ML)		
70	36	24/23	70-72	5-15 20-26		Brown grading to dark grayish-brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL).	70' CLAY & SILT (CL)		
71									
72	37	24/24	72-74	7-14 23-28		Brown grading to dark grayish-brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL).			
73									
74	38	24/24	74-76	9-11 15-20		Brown grading to dark grayish-brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL).			
75									
76	39	24/14	76-78	10-13 33-39		Brown grading to dark grayish-brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL).			
77									
78	40	24/24	78-80	5-25 19-23		Brown grading to dark grayish-brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL).			
79									
80	41	24/24	80-82	6-11 15-21		Brown grading to dark grayish-brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL).			
81									

REMARKS

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	42	24/24	82-84	10-15 23-25		Brown grading to dark grayish-brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL).	CLAY & SILT (CL)		
83									
84	43	24/12	84-86	7-14 21-20		Brown grading to dark grayish-brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL).			
85									
86	44	24/24	86-88	8-18 23-25		Brown grading to dark grayish-brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL).			
87									
88	45	24/15	88-90	5-38 33-33		Brown grading to dark grayish-brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL).			
89									
90	46	24/24	90-92	8-14 15-28		Brown grading to dark grayish-brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL).			
91									
92	47	24/24	92-94	15-16 25-33		Brown grading to dark grayish-brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL). Changing at 92.1 feet to: Dark grayish-brown, well sorted, Silty CLAY, plastic, cohesive, moist (CL).	92.1' Silty CLAY (CL)		
93									
94	48	24/24	94-96	13-22 37-43		Dark grayish-brown, well sorted, Silty CLAY, plastic, cohesive, moist (CL). Changing at 94.4 feet to: Dark grayish-brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL).	94.4' CLAY & SILT (CL)		
95									

REMARKS

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97	49	24/24	96-98	8-18 30-23		Dark grayish-brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL).	CLAY & SILT (CL)		
98	50	24/24	98-100	14-24 33-45		Dark grayish-brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL).			Grout
99									
100	51	24/21	100-102	19-29 47-50/3.5"		Dark grayish-brown, poorly sorted, CLAY & SILT, little Sand, trace Gravel, plastic, cohesive, moist (CL). Changing at 101.5 feet to: Dark grayish-brown, very well sorted, SILT, trace Clay, cohesive, non to slighty plastic, moist with occasional very thin lenses of Clayey Silt, moist (ML).	101.5' SILT (ML)		
101									
102	52	24/24	102-104	13-26 38-44		Dark grayish-brown, very well sorted, SILT, trace Clay, cohesive, non to slighty plastic, moist with occasional very thin lenses of Clayey Silt, moist (ML).			
103									
104	53	24/24	104-106	20-30 41-39		Dark grayish-brown, very well sorted, SILT, trace Clay, cohesive, non to slighty plastic, moist with occasional very thin lenses of Clayey Silt, moist (ML).			
105									
106	54	24/24	106-108	22-33 37-50		Dark grayish-brown, very well sorted, SILT, trace Clay, cohesive, non to slighty plastic, moist with occasional very thin lenses of Clayey Silt, moist (ML).			
107									
108	55	24/14	108-110	7-9 27-28		Dark grayish-brown, very well sorted, SILT, trace Clay, cohesive, non to slighty plastic, moist with occasional very thin lenses of Clayey Silt, moist (ML). Changing at 108.8 feet to: Dark grayish-brown, well sorted, CLAY, plastic, cohesive, moist (CL).	108.8' CLAY (CL)		
109									

REMARKS

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	56	24/14	110-112	20-41-50		Dark grayish-brown, well sorted, CLAY, plastic, cohesive, moist (CL). Changing at 110.3 feet to: Dark grayish-brown, very well sorted, SILT, trace Clay, cohesive, non to slightly plastic, moist with occasional very thin lenses of Clayey Silt, moist (ML).	110.3' CLAY (CL) / SILT (ML)		
111									
112	57	24/15	112-114	9-30-50/5"		Dark grayish-brown, well sorted, CLAY, plastic, cohesive, moist (CL). Changing at 112.8 feet to: Dark grayish-brown, very well sorted, SILT, trace Clay, cohesive, non to slightly plastic, moist with occasional very thin lenses of Clayey Silt (ML).	112' CLAY (CL) / 112.8' SILT (ML)		
113									
114	58	24/24	114-116	15-20 36-50		Dark grayish-brown, well sorted, CLAY, plastic, coesive, moist (CL). Changing at 114.4 feet to: Dark grayish-brown, very well sorted, SILT, trace Clay, cohesive, non to slightly plastic, moist with occasional very thin lenses of Clayey Silt, moist (ML). Changing at 114.6 feet to: Dark grayish-brown, well sorted, CLAY, plastic, cohesive, moist (CL). Changing at 115.2 feet to: Dark grayish-brown, well sorted, CLAY, plastic, cohesive, moist (CL).	114' CLAY (CL) / 114.4' SILT (ML) / 114.6' CLAY (CL) / 115.1' SILT (ML) / 115.2' CLAY (CL) / 116' SILT (ML)		
115									
116	59	24/15	116-118	1-1 2-5					
117						Dark grayish-brown, very well sorted, SILT, trace Clay, cohesive, non to slightly plastic, moist with occasional very thin lenses of Clayey Silt (ML). Changing at 116.3 feet to: Grayish-brown, very well sorted, SILT, trace Clay, cohesive, non to slightly plastic, moist with occasional very thin lenses of Clayey Silt (ML).			
118	60	24/13	118-120	4-11 23-42					
119						Grayish-brown, very well sorted, SILT, trace Clay, cohesive, non to slightly plastic, moist with occasional very thin lenses of Clayey Silt (ML).			
120	61	24/0	120-122	17-55		NO RECOVERY.	120' NO RECOVERY		
121									
122	62	24/12	122-124	26-44-50/3"		Very dense, grayish-brown to brown, very well sorted, fine to medium grained SAND, trace Silt, wet (SP). Changing at 122.8 feet to: Very dense, grayish-brown to brown, very well sorted, fine grained SAND, some Silt, wet (SM).	122' SAND (SP) / 122.8' SAND (SM) / 124'	3	
123									

REMARKS

3. Groundwater was encountered at approximately 122.0 feet below ground surface.

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	63	24/12	124-126	27-50/4"		Very dense, grayish-brown to brown, very well sorted, fine to medium SAND, trace Silt, wet (SP). Changing at 124.4 feet to: Dark gray, poorly sorted, SILT & CLAY, little Sand, trace Gravel, plastic, cohesive, moist (ML). Changing at 124.6 feet to: Very dense, grayish-brown to brown, very well sorted, fine to medium grained SAND, trace Silt, wet (SP).	SAND (SP) 124.4' 124.6' SILT & CLAY (CL) SAND (SP)		
125									
126	64	24/18	126-128	5-14-50/5"		Very dense, grayish-brown to brown, very well sorted, fine to medium grained SAND, trace Silt, wet (SP). Changing at 126.3 feet to: Dark grayish-brown, very well sorted, Silty CLAY, plastic, cohesive, bedded, moist (CL). Changing at 127.0 feet to: Very dense, brown to grayish-brown, very well sorted, fine to medium grained SAND, trace Silt, wet (SP).	126.3' Silty CLAY (CL) 127' SAND (SP)		
127									
128	65	24/14	128-130	8-46-50/2"		Very dense, brown to grayish-brown, well sorted, fine to medium grained SAND, little Silt, wet (SM).	128' SAND (SM)		
129									
130	66	24/6	130-132	36-50/4"		Very dense, brown to grayish-brown, well sorted, fine to medium grained SAND, little Silt, wet (SM).			
131									
132	67	24/9	132-134	26-50/4.5"		Very dense, brown to grayish-brown, well sorted, fine to medium grained SAND, little Silt, wet (SM). Changing at 132.3 feet to: Very dense, brown to dark brown, moderately sorted, coarse to fine grained SAND, trace Silt, wet (SW). Changing at 132.5 feet to: Very dense, brown to grayish-brown, well sorted, fine to medium SAND, little Silt, wet (SM).	132.3' 132.5' SAND (SW) SAND (SP)		
133									
134	68	24/3	134-136	5-10 39-50/4"		Dense, brown to grayish-brown, well sorted, fine to medium SAND, little Silt, wet (SM).			
135									
136	69	24/6	136-138	9-32-50/5"		Very dense, brown to grayish-brown, well sorted, fine to medium SAND, little Silt, wet (SM).			
137									

REMARKS

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	70	24/4	138-140	50/5"		Very dense, grayish-brown, moderately sorted, fine to medium grained SAND, little Silt, trace Clay, trace Gravel, slightly cohesive, wet (SM).	SAND (SP)		
139									
140	71	24/6	140-142	50/5.5"		Very dense, grayish-brown, well sorted, fine grained SAND, trace Silt, non to slightly cohesive, wet with occasional very thin seams of Silty Clay (SP-SC).			
141									
142	72	24/4	142-144	50/4.5"		Very dense, brown to dark brown, moderately sorted, fine to coarse grained SAND, trace Silt, trace Clay, trace Gravel, wet (SW).	142' SAND (SW)		
143									
144	73	24/8	144-146	12-37-50/2"		Very dense, dark grayish-brown, poorly sorted, fine to coarse grained SAND, trace Gravel, trace Silt, trace Clay, wet (SW). Changing at 144.4 feet to: Very dense, pale brown grading to brown, moderately sorted, fine to coarse grained SAND, trace Silt, trace Gravel, non to slightly cohesive, wet (SW).			
145									
146	74	24/10	146-148	32-50/3.5"		Very dense, pale brown grading to brown, moderately sorted, fine to coarse grained SAND, trace Silt, trace Gravel, non to slightly cohesive, wet (SW).			
147									
148	75	24/9	148-150	35-50/3"		Very dense, pale brown grading to brown, moderately sorted, fine to coarse grained SAND, trace Silt, trace Gravel, non to slightly cohesive, wet (SP). Changing at 148.6 feet to: Very dense, pale brown, very well sorted, fine to medium SAND, trace Silt, wet (SP).	148.6' SAND (SP)		
149									
150	76	24/4	150-152	50/5"		Very dense, pale brown, moderately sorted, fine to coase grained SAND, trace Silt, trace Gravel, wet (SW).	150' SAND (SW)		
151							152'		

REMARKS

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Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	77	24/0	152-154	50/4"		NO RECOVERY.	NO RECOVERY		
153									
154	78	24/4	154-156	50/5.5"		Very dense, pale brown, moderately sorted, fine to coarse SAND, trace Silt, trace Gravel, wet (SW).	154' SAND (SW)		
155									
156	79	24/7	156-158	34-50/4"		Very dense, pale brown, moderately sorted, fine to coarse grained SAND, trace Silt, trace Gravel, wet (SW). Changing at 156.5 feet to: Pale brown, very well sorted, SILT, trace Clay, moderately cohesive, slightly plastic, wet (ML).	156.5' SILT (ML)		
157									
158	80	24/4	158-160	40-50/2.5"		Very dense, grayish-brown, very well sorted, fine grained SAND, little Silt, wet (SM).	158' SAND (SM)		
159									
160	81	24/3	160-162	50/5"		Very dense, grayish-brown, very well sorted, fine grained SAND, little Silt, wet (SM).			
161									
162	82	24/4	162-164	41-50/5"		Very dense, brown to dark brown, moderately well sorted, fine grained SAND, little Silt, wet (SM).			
163									
164	83	24/4	164-166	50/6"		Very dense, brown to dark brown, moderately well sorted, fine grained SAND, little Silt, wet (SM).			
165									

REMARKS

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

Boring No.: SB-9/MW-9D

BORING_WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
US 131
Belmont, Michigan

Boring No.: SB-9/MW-9D
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File No.: 16.0062335.52
Check: Jim Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	84	24/3	166-168	43-50/3"		Very dense, brown to dark brown, moderately well sorted, fine grained SAND, little Silt, wet (SM).	SAND (SM)		
167									
168	85	24/2	168-170	47-50/3"		Very dense, brown, well sorted, fine to medium SAND, little Silt, trace Clay, slightly cohesive, non to slightly plastic, wet (SM).			
169									
170	86	24/7	170-172	36-50/4"		Very dense, brown, well sorted, fine to medium SAND, little Silt, trace Clay, slightly cohesive, non to slightly plastic, wet (SM).			
171									
172	88	24/0	172-174	43-50/3"		Very dense, brown, well sorted, fine to medium SAND, little Silt, trace Clay, slightly cohesive, non to slightly plastic, wet (SM).			
173									
174	89	24/10	174-176	35-50		Very dense, brown, well sorted, fine to medium SAND, little Silt, trace Clay, slightly cohesive, non to slightly plastic, wet (SM). Changing at 174.2 feet to: Grayish-brown, very well sorted, SILT, little fine grained Sand, trace Clay, slightly cohesive, slightly plastic, moist to wet (ML).	174.2' SILT (ML)		
175									
176	90	24/0	176-178	28-50		NO RECOVERY.	176' NO RECOVERY		
177									
178	91	24/4	178-180	45-50/3.5"		Grayish-brown, very well sorted, SILT, little fine grained Sand, trace Clay, slightly cohesive, slightly plastaic, moist to wet (ML).	178' SILT (ML)		
179									
							180'		

REMARKS

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BORING_WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
US 131
Belmont, Michigan

Boring No.: SB-9/MW-9D
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File No.: 16.0062335.52
Check: Jim Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	92	24/1	180-182	45-50/3.5"		Very dense, brown, well sorted, fine to medium SAND, little Silt, trace Clay, slightly cohesive, non to slightly plastic, wet (SM).	SAND (ML)		
181									
182	93	24/6	182-184	50		Very dense, brown to dark brown, moderately well sorted, fine grained SAND, little Silt, wet (SM). Changing at 182.1 feet to: Brown to dark brown, very well sorted, SILT, moderately cohesive, wet (ML). Changing at 182.2 feet to: Brown to dark brown, moderately well sorted, fine grained SAND, little Silt, wet (SM). Changing at 182.4 feet to: Brown to dark brown, very well sorted, SILT, moderately cohesive, wet (ML).	182.1' SILT (ML) 182.2' SAND (SM) 182.4' SILT (ML)		
183									
184	94	24/0	184-186	50/5.5"		NO RECOVERY.	184' NO RECOVERY		
185									
186	95	24/6	186-188	58/6"		Very dense, grayish-brown, very well sorted, fine to medium SAND, trace Silt, trace Clay, slightly cohesive, wet (SP).	186' SAND (SP)		
187									
188	96	24/5	188-190	75/6"		Very dense, grayish-brown, very well sorted, fine to medium SAND, trace Silt, trace Clay, slightly cohesive, wet (SP).			
189									
190	97	24/4	190-192	50/6"		Very dense, grayish-brown, very well sorted, fine to medium SAND, trace Silt, trace Clay, slightly cohesive, wet (SP).			
191									
192	98	24/2	192-194	50/5"		Very dense, grayish-brown, very well sorted, fine to medium SAND, trace Silt, trace Clay, slightly cohesive, wet (SP).			
193									

REMARKS

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Boring No.: SB-9/MW-9D

BORING WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

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Engineers and Scientists

Wolverine World Wide, Inc.
US 131
Belmont, Michigan

Boring No.: SB-9/MW-9D
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File No.: 16.0062335.52
Check: Jim Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	99	24/9	194-196	42-50/3"		Grayish-brown, very well sorted, fine to medium SAND, trace Silt, trace Clay, slightly cohesive, wet (SP). Changing at 194.3 feet to: Grayish-brown, very well sorted, SILT, cohesive, moist to wet (ML).	194.3' SAND (SP) / SILT (ML)		
195									
196	100	24/9	196-198	15-38-50/3"		Grayish-brown, very well sorted, SILT, cohesive, moist to wet (ML).			
197									
198	101	24/9	198-200	24-50/5"		Grayish-brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, slightly plastic, moderately cohesive, moist (CL). Changing at 198.2 feet to: Grayish-brown, very well sorted, SILT, cohesive, moist to wet (ML).	198' / 198.2' CLAY & SILT (CL) / SILT (ML)		
199									
200	102	24/4	200-202	28-50/3"		Grayish-brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, slightly plastic, moderately cohesive, moist (CL).	200' CLAY & SILT (CL)		
201									Silica Sand Filter Pack
202	103	24/3	202-204	50/6"		Grayish-brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, slightly plastic, moderately cohesive, moist (CL).			
203									Top of Well Screen
204	104	24/7	204-206	50/6"		Grayish-brown, poorly sorted, CLAY & SILT, some Sand, trace Gravel, slightly plastic, moderately cohesive, moist (CL). Changing at 204.3 feet to: Grayish-brown, well sorted, fine to medium grained SAND, litle Silt, moderately cohesive, wet (SM). Changing at 204.4 feet to: Grayish-brown, moderately well sorted, fine to medium SAND, little Silt, trace Gravel, non-plastic, non-cohesive, moist to wet (SM).	204.3' SAND (SM)		
205									2-Inch Dia. 5-Foot PVC Screen (0.010" Slot)
206	105	24/12	206-208	30-50/4"		Grayish-brown, moderately well sorted, fine to medium SAND, little Silt, trace Gravel, non-plastic, non-cohesive, moist to wet (SM). Changing at 206.4 feet to: Grayish-brown, well sorted, SILT, trace Clay, slightly coheisive, moderately	206.4' / 206.5' SILT (ML) / SAND (SM)		
207									

REMARKS

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Boring No.: SB-9/MW-9D

BORING_WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

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US 131
Belmont, Michigan

Boring No.: SB-9/MW-9D
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File No.: 16.0062335.52
Check: Jim Cai

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	106	24/9	208-210	19-24 23-25		cohesive, moist to wet (ML). Changing at 206.5 feet to: Dense, grayish-brown, moderately well sorted, fine to medium SAND, little Silt, trace Gravel, non-plastic, non-cohesive, moist to wet (SM).	SAND (SM) 208.4' SILT (ML) 208.8' Silty CLAY (CL)		Bottom of Well Screen
209									
210	107	24/8	210-212	14-18-75/6"		Dense, grayish-brown, moderately well sorted, fine to medium SAND, little Silt, trace Gravel, non-plastic, non-cohesive, moist to wet (SP). Changing at 208.4 feet to: Grayish-brown, well sorted, SILT, trace Clay, slightly cohesive, moderately cohesive, moist to wet (ML). Changing at 208.8 feet to: Grayish-brown, very well sorted, Silty CLAY, plastic, cohesive, moist (CL).			
211							211.3'		
212	108	24/15	212-214	19-45-50/3"		Grayish-brown, very well sorted, Silty CLAY, plastic, cohesive, moist (CL). Changing at 211.3 feet to: Grayish-brown, moderately well sorted, fine to medium SAND, little Silt, trace Gravel, non-plastic, non-cohesive, moist to wet (SM).	SAND (SM) 212' Silty CLAY (CL)		
213							212.9'		
214	109	24/12	214-216	34-50/3"		Grayish-brown, very well sorted, Silty CLAY, plastic, cohesive, moist (CL). Changing at 212.9 feet to: Grayish-brown, well sorted, fine to medium SAND, little Silt, trace Clay, wet with occasional very thin Silty Clay seams (SM).	SAND (SM)		
215						Grayish-brown, well sorted, fine to medium SAND, little Silt, trace Clay, wet with occasional very thin Silty Clay seams (SM). Changing at 214.7 feet to: Grayish-brown, moderately well sorted, fine to medium SAND, little Silt, trace Gravel, non-plastic, non-cohesive, moist to wet (SM). Changing at 214.9 feet to: Grayish-brown, well sorted, SILT, trace Clay, slightly to moderately coheisve, moist to wet (ML).	214.9' SILT (ML)		
216	110	24/18	216-218	18-27-50/5"			216' Silty CLAY (CL)		
217						Grayish-brown, very well sorted, Silty CLAY, plastic, cohesive, moist (CL). Changing at 217.4 feet to: Dark gray with reddish-yellow stains, poorly sorted, CLAY & SILT, some Sand, trace Gravel, wet (CL).	217.4' CLAY & SILT (CL)		
218	111	24/18	218-220	15-32-50/4"		Grayish-brown, very well sorted, Silty CLAY, plastic, cohesive, moist (CL).	218' Silty CLAY (CL)		
219									
220						Bottom of Borehole at 220.0 Feet	220'	4	
221									

REMARKS

4. Monitoring well was installed in borehole upon completion. Well screen set from 203.0 to 208.0 feet below ground surface.

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BORING_WELL 6233552 WWW US 131 SB-9 THROUGH SB-11.GPJ GZA_CORP.GDT 1/25/18

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
Packer Drive
Plainfield, Michigan

Boring No.: MW-15D
Page: 1 of 4
File No.: 16.0062335.52
Check:

Contractor: Cascade Drilling
Foreman: Jason
Logged by: Ken Oanes
Date Start/Finish: 12-19-18 / 12-21-17
Boring Location:
GS Elev.: Datum:

	Auger/ Casing	Sampler
Type:	Sonic	NA
O.D. / I.D.:	NA	NA
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

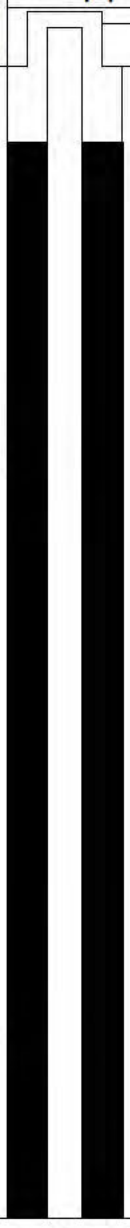
GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks
1	1	60/60	0-5		0.4 ppm	Loose, dark brown, Silty SAND with Organics (plant roots), moist (SM). Changing at 1.4 feet to: Loose, light brown, poorly graded, fine to medium SAND and GRAVEL, with Lithics, moist (SP).	SAND (SM)	1
2					0.3 ppm		1.4' SAND (SW)	
5	2	60/42	5-10		0.2 ppm	Loose, light brown, well graded, fine to medium SAND with GRAVEL, sub-angular to sub-rounded, moist (SW). Changing at 7.5 feet to: Loose, light brown, well graded, SAND with coarse GRAVEL, sub-rounded, moist (SW).		
8					0.3 ppm			
10	3	60/60	10-15		0.4 ppm	Loose, light brown, Silty SAND with Gravel, wet (SM). Changing at 11.7 feet to: Loose, light brown, well graded, medium to coarse SAND and GRAVEL, sub-angular to sub-rounded, moist (SW).	10' SAND (SM)	2
13					0.4 ppm		11.7' SAND (SW)	
15	4	60/60	15-20		0.4 ppm	Loose, light brown, poorly graded, medium SAND, some Lithics, trace Gravel, moist (SP).	15' SAND (SP)	
18					0.5 ppm			
20	5	60/60	20-25		0.5 ppm	Loose, light brown, poorly graded, medium SAND, some Lithics, trace Gravel, moist (SP).		
23					0.3 ppm			
25	6	60/60	25-30		0.3 ppm	Loose, tan, poorly graded, medium to coarse SAND, with lithics, sub-angular, moist (SP).		3
28					0.1 ppm			

Equipment Installed: PROTECTIVE CASING



REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings are shown in parts per million (ppm) of isobutylene. Background was measured at 0.0 ppm.
2. Groundwater was encountered at approximately 10.0 feet below ground surface.
3. Temporary well set at 25.0 to 30.0 feet below ground surface. Groundwater sample submitted for laboratory analysis.

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

Boring No.: MW-15D

BORING_WELL 6233552 WWW PACKER DR_PLAINFIELD MI.GPJ GZA_CORP.GDT 2/2/18

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
Packer Drive
Plainfield, Michigan

Boring No.: MW-15D
Page: 2 of 4
File No.: 16.0062335.52
Check:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
31	7	60/60	30-35			Loose, tan, poorly graded, medium to coarse SAND, with lithics, sub-angular, moist (SP).	SAND (SP)		
32									
33					0.4 ppm				
34									
35							35'		
35	8	60/60	35-40		0.3 ppm	Loose, brown, Silty fine SAND, sub-rounded, wet (SM). Changing at 35.5 feet to: Loose, brown, well graded, medium to coarse SAND and GRAVEL, sub-rounded to sub-angular, wet (SW). Changing at 37.5 feet: Loose, brown, well graded, coarse SAND, some fine to coarse Gravel, with Clay layers, wet (SW).	35.5'SAND (SM) SAND (SW)		
36									
37									
38					0.5 ppm				
39									
40	9	60/60	40-45		0.5 ppm	Loose, brown, well graded, fine to coarse SAND with fine GRAVEL, sub-angular, wet (SW). Changing at 43.3 feet to: Loose, light brown, poorly graded, medium SAND, some lithics, sub-angular, wet (SP).			
41									
42									
43					0.5 ppm		43.3' SAND (SP)		
44									
45	10	60/60	45-50		0.3 ppm	Loose, brown, well graded, medium SAND with Gravel, with layers of Silt and Cobbles, wet (SW).	45' SAND (SW)	4	
46									
47									
48					0.3 ppm				
49									
50							50'		
50	11	60/60	50-55			Loose, coarse GRAVEL and COBBLES up to 6.0 inch diameter, wet (GP). Changing at 51.0 feet to: Stiff, dark brown, SILT, little fine to coarse Gravel, rounded, moist (ML).	GRAVEL/COBBLES (GP) 51' SILT (ML)		
51									
52									
53					2.1 ppm				Grout
54									
55	12	60/60	55-60		3.7 ppm	Stiff, dark brown, SILT, little fine to coarse Gravel, rounded, moist (ML).			
56									
57									
58					2.7 ppm				
59									
60	13	60/60	60-65		1.6 ppm	Stiff, dark brown, SILT, little fine to coarse Gravel, rounded, moist (ML).		5	
61									
62									
63					2.7 ppm				
64							65'		

REMARKS

4. Temporary well set at 45.0 to 50.0 feet below ground surface. Heaving sands pushed casing to 47.5 feet only exposing lower 2.0 feet of well screen. Left overnight to purge after pumping dry.
5. Insufficient groundwater yield. No temporary well or sample.

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

BORING_WELL 6233552 WWW PACKER DR_PLAINFIELD MI.GPJ GZA_CORP.GDT 2/2/18

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
Packer Drive
Plainfield, Michigan

Boring No.: MW-15D
Page: 3 of 4
File No.: 16.0062335.52
Check:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
66	14	60/60	65-70		1.4 ppm	Stiff, dark gray, Silty fine SAND, trace fine Gravel, moist (SM).	Silty SAND (SM)		
67									
68					0.7 ppm				
69									
70	15	60/60	70-75		1.5 ppm	Stiff, dark gray, Silty fine SAND, moist (SM).			
71									
72									
73					1.2 ppm				
74									
75	16	60/60	75-80		1.2 ppm	Stiff, dark gray, Silty fine SAND, moist (SM).			
76									
77									
78					1.4 ppm				
79									
80	17	60/60	80-85		0.7 ppm	Stiff, dark gray, Silty fine SAND, moist (SM).			
81									
82									
83					0.5 ppm				
84									
85	18	60/60	85-90		0.1 ppm	Very stiff, dark gray, Silty fine SAND, trace medium to coarse Sand, trace coarse Gravel, moist (SM).			
86									
87									
88					0.1 ppm				
89									
90	19	60/60	90-95		0.7 ppm	Stiff, dark gray, SILT, trace Sand, moist (ML). Changing at 92.5 feet to: Stiff, dark gray, SILT transitioning to lean CLAY, moist (CL).	90' SILT (ML)		
91									
92							92.5' Lean CLAY (CL)		
93					0.9 ppm				
94									
95	20	60/60	95-100		1.3 ppm	Stiff, dark gray, lean CLAY, trace fine Gravel, sub-rounded, moist (CL).			
96									
97									
98					1.1 ppm				
99									

REMARKS

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BORING_WELL 6233552 WWW PACKER DR_PLAINFIELD MI.GPJ GZA_CORP.GDT 2/2/18

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Plainfield, Michigan

Boring No.: MW-15D
Page: 4 of 4
File No.: 16.0062335.52
Check:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
101	21	60/60	100-105		0.2 ppm	Stiff, dark gray, lean CLAY, trace fine Gravel, sub-rounded, moist (CL). Changing at 104.0 feet to: Stiff, dark gray, SILT, wet (ML).	Lean CLAY (CL)		
103					0.3 pm				Bentonite Seal
104							104' SILT (ML)		
105	22	60/60	105-110		1.0 ppm	Stiff, SILT with Gravel, small lenses (3-8mm) of white chystaline mineral, dry (ML). Changing at 107 feet to: Loose, dark brown, SILT with coarse Gravel,			
108					0.8 ppm	sub-rounded, wet (ML).			Top of Well Screen
110	23	60/60	110-115		112.5 ppm	Loose, SILT with coarse Gravel and Cobbles, sub-rounded, small lenses of white crystalline mineral, wet (ML).		6	
112									Silica Sand Filter Pack
113									2-Inch Dia. 10-Foot PVC Screen (0.010" Slot)
115	24	24/24	115-117		0.5 ppm	Loose, SILT with GRAVEL and COBBLES, sub-rounded, small lenses of white crystalline mineral, wet (ML).	117'		
117						Bottom of Borehole at 117.0 Feet		7	Bottom of Well Screen
134									

REMARKS

6. Temporary well set at 110.0 to 115.0 feet below ground surface. Groundwater sample submitted for laboratory analysis.
7. Monitoring well was installed in borehole upon completion. Well screen set from 108.0 to 118.0 feet below ground surface.

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Boring No.: MW-15D

BORING WELL 6233552 WWW PACKER DR_PLAINFIELD MI.GPJ GZA_CORP.GDT 2/2/18

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Engineers and Scientists

Wolverine World Wide, Inc.
Packer Drive
Plainfield, Michigan

Boring No.: MW-15M
Page: 1 of 2
File No.: 16.0062335.52
Check:

Contractor: Cascade Drilling
Foreman: Jason
Logged by: John Morehouse
Date Start/Finish: 1-17-18 / 1-17-18
Boring Location:
GS Elev.: Datum:

	Auger/ Casing	Sampler
Type:	Sonic	NA
O.D. / I.D.:	NA	NA
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1–29						See MW-15D boring log for sample description and classification.			PROTECTIVE CASING; Grout

REMARKS

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Boring No.: MW-15M

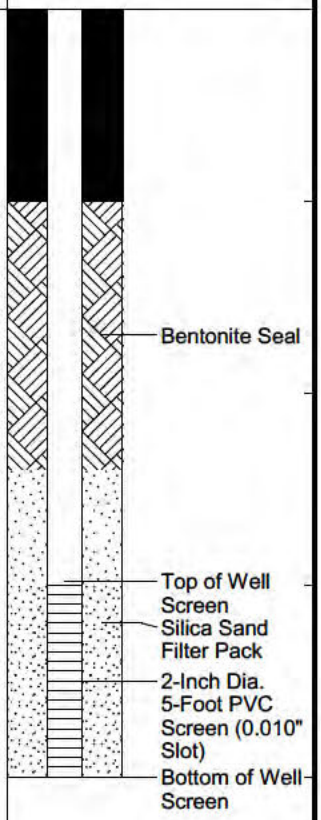
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Wolverine World Wide, Inc.
Packer Drive
Plainfield, Michigan

Boring No.: MW-15M
Page: 2 of 2
File No.: 16.0062335.52
Check:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
31–64									
50						Bottom of Borehole at 50.0 Feet		1	



REMARKS

1. Monitoring well was installed in borehole upon completion. Well screen set from 45.0 to 50.0 feet below ground surface.

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

Boring No.: MW-15M

BORING_WELL 6233552 WWW PACKER DR_PLAINFIELD MI.GPJ GZA_CORP.GDT 2/2/18

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Engineers and Scientists

Wolverine World Wide, Inc.
Packer Drive
Plainfield, Michigan

Boring No.: MW-15S
Page: 1 of 1
File No.: 16.0062335.52
Check:

Contractor: Cascade Drilling
Foreman: Jason
Logged by: John Morehouse
Date Start/Finish: 1-17-18 / 1-17-18
Boring Location:
GS Elev.: Datum:

	Auger/ Casing	Sampler
Type:	Sonic	NA
O.D. / I.D.:	NA	NA
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

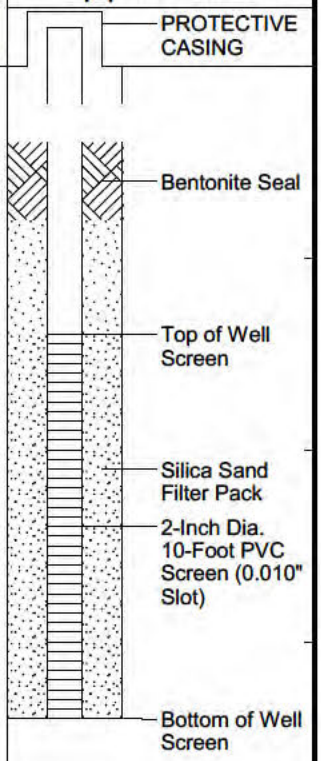
GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks
1–16						See MW-15D boring log for sample description and classification.		
17						Bottom of Borehole at 17.0 Feet		1

Equipment Installed



REMARKS

1. Monitoring well was installed in borehole upon completion. Well screen set from 7.0 to 17.0 feet below ground surface.

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

Boring No.: MW-15S

BORING_WELL 6233552 WWW PACKER DR_PLAINFIELD MI.GPJ GZA_CORP.GDT 2/2/18

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Wolverine World Wide, Inc.
Packer Drive
Plainfield, Michigan

Boring No.: MW-19D
Page: 1 of 4
File No.: 16.0062335.52
Check:

Contractor: Cascade Drilling
Foreman: Jason
Logged by: Ken Oanes
Date Start/Finish: 1-8-18 / 1-8-18
Boring Location:
GS Elev.: Datum:

	Auger/ Casing	Sampler
Type:	Sonic	NA
O.D. / I.D.:	NA	NA
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks
1	1	60/60	0-5		0.7 ppm <0.25 tsf	Very soft, black, SILT, contains Organics (topsoil), trace Gravel, moist (ML). Changing at 2.0 feet to: Loose, light brown, Silty fine to coarse GRAVEL, sub-angular, some Sand, moist (GM).	SILT (ML)	1 2
2							2' GRAVEL (GM)	
3					1.6 ppm			
4								
5	2	60/60	5-10		1.6 ppm	Loose, brown, well graded, fine to coarse SAND and GRAVEL, sub-angular to sub-rounded, some lithics, trace Silt, moist (SW).	5' SAND (SW)	
6								
7								
8					1.5 ppm			
9								
10	3	60/60	10-15		2.8 ppm	Loose, brown, well graded, fine to coarse SAND and GRAVEL, sub-angular to sub-rounded, some lithics, trace Silt, moist (SW).		
11								
12								
13								
14					2.7 ppm			
15	4	60/60	15-20		3.9 ppm	Stiff, light brown, Silty fine SAND, trace fine Gravel, moist (SM).	15' SAND (SM)	
16								
17								
18					4.3 ppm			
19								
20	5	60/60	20-25		5.8 ppm	Stiff, light brown, Silty fine SAND, trace fine Gravel, moist (SM).		
21								
22								
23					4.2 ppm			
24								
25	6	60/60	25-30		3.5 ppm >4.5 tsf	Stiff, dark gray, Silty CLAY, trace fine Sand, trace fine Gravel, moist (CL).	25' CLAY (CL)	
26								
27								
28					2.5 ppm			
29								

Equipment Installed: PROTECTIVE CASING



REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings are shown in parts per million (ppm) of isobutylene. Background was measured at 0.0 ppm.
2. Pocket penetrometer readings were measured in tons per square foot (tsf) and are used to evaluate consisency of cohesive soil.

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

Boring No.: MW-19D

BORING_WELL 6233552 WWW PACKER DR_PLAINFIELD MI.GPJ GZA_CORP.GDT 2/2/18

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
Packer Drive
Plainfield, Michigan

Boring No.: MW-19D
Page: 2 of 4
File No.: 16.0062335.52
Check:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
31	7	60/60	30-35		5.4 ppm >4.0 tsf	Stiff, dark gray, Silty CLAY, trace fine Sand, trace fine Gravel, moist (CL).	CLAY (CL)		
32									
33					3.3 ppm				
34									
35	8	60	35-40		5.8 ppm >4.0 tsf	Stiff, dark gray, Silty CLAY, trace fine Sand, trace fine Gravel, moist (CL).			
36									
37									
38					5.6 ppm				
39									
40	9	60/60	40-45		11.8 ppm >4.0 tsf	Stiff, dark gray, Silty CLAY, trace fine Sand, trace fine Gravel, moist (CL).			
41									
42									Grout
43					10.7 ppm				
44									
45	10	60/60	45-50		7.2 ppm >4.0 tsf	Stiff, dark gray, Silty CLAY, trace fine Sand, trace fine Gravel, moist (CL).			
46									
47									
48					11.9 ppm				
49									
50	11	60/60	50-55		2.6 ppm >4.5 tsf	Stiff, dark gray, Silty CLAY, trace fine Sand, trace fine Gravel, moist (CL).			
51									
52									
53					10.1 ppm				
54									
55	12	60/60	55-60		0.7 ppm >4.0 tsf	Hard, light gray, Silty CLAY, trace coarse Sand, trace fine Gravel, moist (CL).		3	
56								4	
57						Changing at 57.0 feet to: Loose, gray, poorly graded, fine SAND, some lithics, sub-rounded, little Silt, wet (SM). Changing at 59.0 feet to: Stiff, gray, SILT, trace fine Sand, trace fine Gravel, wet (ML).	57' SAND (SM)		
58									
59					1.5 tsf		59' SILT (ML)		
60	13	60/60	60-65		3.0 ppm >4.0 tsf	Hard, gray, Silty CLAY, trace coarse Sand, trace fine Gravel, sub-angular, moist (CL).	60' CLAY (CL)		
61									
62									
63					4.8 ppm				
64									

REMARKS

3. Groundwater was encountered 55.0 feet below ground surface.
4. Temporary well set at 55.0 to 60.0 feet below ground surface. Groundwater sample submitted for laboratory analysis.

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

Boring No.: MW-19D

BORING_WELL 6233552 WWW PACKER DR_PLAINFIELD MI.GPJ GZA_CORP.GDT 2/2/18

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Packer Drive
Plainfield, Michigan

Boring No.: MW-19D
Page: 3 of 4
File No.: 16.0062335.52
Check:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
66	14	60/60	65-70		4.2 ppm >4.0 tsf	Hard, gray, Silty CLAY, trace coarse Sand, trace fine Gravel, sub-angular, moist (CL).	CLAY (CL)		
67									
68					2.9 ppm				
69									
70	15	60/60	70-75		7.0 ppm >4.0 tsf	Hard, gray, Silty CLAY, trace coarse Sand, trace fine Gravel with confinement increasing with depth, sub-angular, moist (CL).			
71									
72									
73					6.5 ppm				
74									
75	16	60/60	75-80		10.8 ppm >4.0 tsf	Hard, gray, Silty CLAY, trace coarse Sand, trace fine Gravel with confinement increasing with depth, sub-angular, moist (CL).			
76									
77									
78					4.0 ppm				
79									
80	17	60/60	80-85		2.0 ppm	Loose, brown, Silty fine SAND, some medium to coarse Sand, trace Gravel, sub-angular, wet (SM). Changing at 81.0 feet to: Loose, brown, well graded, fine to coarse SAND and fine to coarse GRAVEL, sub-angular to agular gravel content increasing with depth, wet (SW).	80' SAND (SM)	5	
81							81' SAND (SW)	6	
82									Bentonite Seal
83					0.3 ppm				
84									
85	18	60/60	85-90		8.2 ppm	Loose, brown, well graded, fine to coarse SAND and fine to coarse GRAVEL, sub-angular to agular gravel content increasing with depth, wet (SW).			Top of Well Screen
86									
87									
88					0.2 ppm				
89									Silica Sand Filter Pack
90	19	60	90-95		0.4 ppm	Loose, dark gray, fine to coarse SAND and fine to coare GRAVEL, sub-angular, trace Silt, wet with 3 inch Cobble at 91.3 feet (SW).		7	2-Inch Dia. 5-Foot PVC Screen (0.010" Slot)
91									
92									
93					0.3 ppm				
94									
95	20	60/60	95-100		0.1 ppm >4.5 tsf	Hard, dark gray, CLAY, trace fine Sand, trace Gravel, easily rolls 1/8" ribbon, moist (CL).	95' CLAY (CL)		Bottom of Well Screen
96									
97									
98					0.1 ppm				
99									

REMARKS

5. Groundwater was encountered at approximately 80.0 feet below ground surface.
6. Temporary well set at 80.0 to 85.0 feet below ground surface. Groundwater sample submitted for laboratory analysis.
7. Temporary well set at 90.0 to 95.0 feet below ground surface. Groundwater sample submitted for laboratory analysis.

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

Boring No.: MW-19D

BORING_WELL 6233552 WWW PACKER DR_PLAINFIELD MI.GPJ GZA_CORP.GDT 2/2/18

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Packer Drive
Plainfield, Michigan

Boring No.: MW-19D
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File No.: 16.0062335.52
Check:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
101	21	60/60	100-105		0.3 ppm >4.5 tsf	Hard, dark gray, lean CLAY, low plasticity, moist (CL). Changing at 104.0 feet to: Stiff, dark gray, SILT with Clay, low plasticity, wet (ML).	CLAY (CL)		
102									
103					0.4 ppm 1.5 tsf				
104							104' SILT (ML)		
105	22	60/60	105-110		0.8 ppm 1.0 tsf	Stiff, dark gray, SILT with Clay, low plasticity, trace fine Sand increasing with depth, wet (ML).			
106									
107									
108					0.7 ppm				
109									
110	23	60/60	110-115		0.4 ppm 0.5 tsf	Soft, gray, poorly graded, fine SAND, trace Silt, wet (SP). Changing at 111.3 feet to: Hard, dark gray, CLAY with some Silt, moist (CL).	110' SAND (SP)	8	
111							111.3' CLAY (CL)		
112									
113					0.7 ppm >4.5 tsf				
114									
115	24	60/60	115-120		0.7 ppm 1.0 tsf	Medium stiff, dark gray, Silty CLAY, moist (CL).			
116									
117									
118					0.5 ppm				
119									
120	25	60/60	120-125		0.8 ppm 4.0 tsf	Hard, gray, CLAY, some Silt, trace Gravel, moist (CL). Changing at 121.3 feet to: Hard, red, CLAY, some Silt, Gypsum inclusions, dry (CL).			
121									
122									
123					1.0 ppm >4.5 tsf				
124									
125							125'		
125						Bottom of Borehole at 125.0 Feet		9	
126									
127									
128									
129									
130									
131									
132									
133									
134									

REMARKS

8. Insufficient groundwater yeild for temporary well.
9. Monitoring well was installed in borehole upon completion. Well screen set from 85.0 to 95.0 feet below ground surface.

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

Boring No.: MW-19D

BORING_WELL 6233552 WWW PACKER DR_PLAINFIELD MI.GPJ GZA_CORP.GDT 2/2/18

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Wolverine World Wide, Inc.
Packer Drive
Plainfield, Michigan

Boring No.: MW-19S
Page: 1 of 2
File No.: 16.0062335.52
Check:

Contractor: Cascade Drilling
Foreman: Jason
Logged by: John Morehouse
Date Start/Finish: 1-16-18 / 1-16-18
Boring Location:
GS Elev.: **Datum:**

	Auger/ Casing	Sampler
Type:	Sonic	NA
O.D. / I.D.:	NA	NA
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1						See MW-19D boring log for sample description and classification.			PROTECTIVE CASING
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									Grout
28									
29									

REMARKS

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

Boring No.: MW-19S

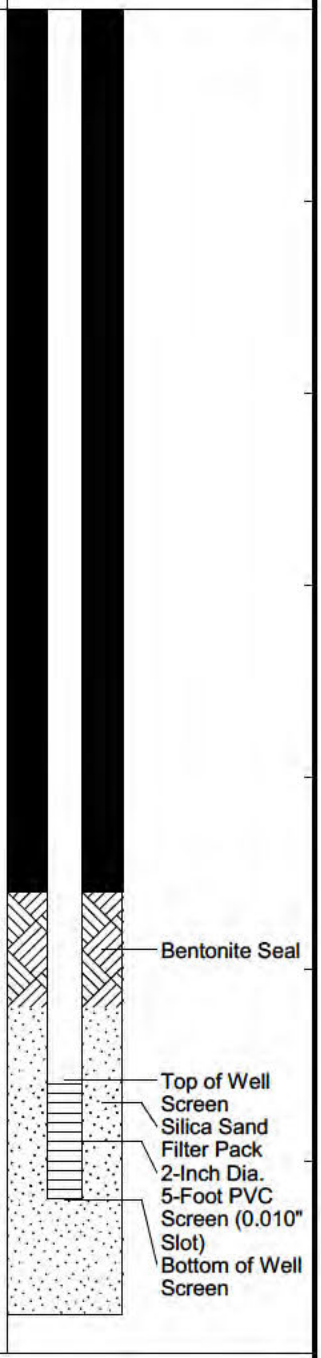
BORING_WELL 6233552 WWW PACKER DR_PLAINFIELD MI.GPJ GZA_CORP.GDT 2/2/18

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Plainfield, Michigan

Boring No.: MW-19S
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File No.: 16.0062335.52
Check:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
31–64						Bottom of Borehole at 61.0 Feet		1	



REMARKS

1. Monitoring well was installed in borehole upon completion. Well screen set from 58.0 to 61.0 feet below ground surface.

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

Boring No.: MW-19S

BORING WELL 6233552 WWW PACKER DR_PLAINFIELD MI.GPJ GZA_CORP.GDT 2/2/18

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Packer Drive
Plainfield, Michigan

Boring No.: MW-21D
Page: 1 of 3
File No.: 16.0062335.52
Check:

Contractor: Cascade Drilling
Foreman: Jason
Logged by: Ken Oanes
Date Start/Finish: 1-2-18 / 1-2-18
Boring Location:
GS Elev.: Datum:

	Auger/ Casing	Sampler
Type:	Sonic	NA
O.D. / I.D.:	NA	NA
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks
1	1	60/60	0-5		1.7 ppm	Loose, black, Silty SAND with Organic Matter (roots), moist (SM). Changing at 1.3 feet to: Loose, light brown, well graded, SAND, trace Gravel, sub-angular to sub-rounded, coarser at 4.5 feet (SM).	SAND (SM)	1
2							1.3' SAND (SW)	
3					0.8 ppm			
4								
5	2	60/60	5-10		1.0 ppm	Loose, light brown, poorly graded, SAND, some Silty Clumps, sub-angular to sub-rounded, moist (SM). Changing at 8.5 feet to: Loose, brown, well graded, SAND and Gravel, sub-angular to sub-rounded, wet (SW).	5' SAND (SP)	
6								
7								
8					0.9 ppm		8.5' SAND and GRAVEL (GW)	
9								
10	3	60/60	10-15		1.0 ppm	Loose, brown, well graded, SAND with Gravel, sub-rounded, wet (SW).	10' SAND (SW)	
11								
12								
13					0.5 ppm			
14								
15	4	60/60	15-20		0.7 ppm	Loose, brown, well graded, SAND with Gravel, sub-rounded, wet (SW).		
16								
17								
18					0.7 ppm			
19								
20	5	60/60	20-25		0.6 ppm	Loose, brown, well graded, SAND, sub-angular, wet (SW).		
21								
22								
23					0.7 ppm			
24								
25	6	60/60	25-30		0.5 ppm	Loose, brown, well graded, SAND, sub-angular, wet (SW). Changing at 27.0 feet to: Loose, brown, well graded, SAND, with Gravel and Cobble, sub-angular, wet (SW). Changing at 27.6 feet to: Soft, brown, SILT with Sand, wet (ML). Changing at 28.3 feet to: Loose, brown, poorly graded, SAND, little lithics, sub-rounded, wet (SP).		
26								
27							27.6'	
28					1.0 ppm		28.3' SILT (ML)	
29							SAND (SP)	

Equipment Installed: PROTECTIVE CASING



REMARKS

1. Field screening of samples for organic vapors was performed with a MiniRae 2000 photoionization detector equipped with a 10.6 eV lamp. Readings are shown in parts per million (ppm) of isobutylene. Background was measured at 0.0 ppm.

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

Boring No.: MW-21D

BORING_WELL 6233552 WWW PACKER DR_PLAINFIELD MI.GPJ GZA_CORP.GDT 2/2/18

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
Packer Drive
Plainfield, Michigan

Boring No.: MW-21D
Page: 2 of 3
File No.: 16.0062335.52
Check:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
31	7	60/60	30-35		0.8 ppm	Loose, brown, poorly graded, SAND, trace Gravel, little lithics, sub-angular, wet (SP).	SAND (SP)		
32									
33					0.6 ppm				
34									
35	8	60/60	35-40		0.4 ppm	Loose, brown, well graded, SAND with Gravel, sub-angular, some lithics, wet (SW). Changing at 37.5 feet to: Stiff, brown, SILT with Sand, trace Gravel, moist (ML).	35' SAND (SW)		
36									Grout
37							37.5'		
38					0.4 ppm 2.0 tsf		SILT (ML)	2	
39									
40	9	60/60	40-45		1.3 ppm	Hard, brown, Silty CLAY with Gravel, sub-rounded, becoming more Clay than Silt towards bottom, moist (OL).	40' CLAY (OL)		
41									
42									
43					1.7 ppm				
44									
45	10	60/60	45-50		1.1 ppm 3.5 tsf	Very stiff, brown, Silty CLAY with Gravel, sub-rounded, trace Sand, moist (CL).			
46									
47									
48					3.9 ppm				
49									
50	11	60/60	50-55		1.1 ppm 0.5 tsf	Soft, brown, Silty CLAY with Gravel, little Sand, sub-rounded, moist (OL). Changing at 51.0 feet to: Very stiff, brown, lean CLAY, trace Gravel, moist (CL). Changing at 53.5 feet to: Stiff, brown, SILT, trace Gravel, moist (ML).	51' CLAY (CL)		
51									
52									
53					1.3 ppm 3.0 tsf		53.5' SILT (ML)		
54					2.0 tsf				
55	12	60/60	55-60		0.9 ppm >4.0 tsf	Hard, brown, SILT, little Sand, trace Gravel, moist (ML). Changing at 56.8 feet to: Loose, brown, poorly graded SAND, sub-rounded, some lithetics, 2.0 " Cobbles at 58.9 feet, Wet (SP).			
56							56.8' SAND (SP)		
57									
58					1.8 ppm				
59									
60	13	60/60	60-65		1.1 ppm	Loose, brown, poorly graded, SAND, trace Gravel, sub-rounded, some lithics, wet (SP). Changing at 64.0 feet to: Hard, dark gray, SILT, trace Gravel, grading to Clay, wet (ML).			
61									
62									
63					>4.0 tsf 1.0 ppm				
64							64' SILT (SM) 65'		

REMARKS

2. Pocket penetrometer readings were measured in tons per square foot (tsf) and are used to evaluate consisency of cohesive soil.

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

Boring No.: MW-21D

BORING_WELL 6233552 WWW PACKER DR_PLAINFIELD MI.GPJ GZA_CORP.GDT 2/2/18

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Engineers and Scientists

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Plainfield, Michigan

Boring No.: MW-21D
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File No.: 16.0062335.52
Check:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
66	14	60/60	65-70		3.0 ppm 3.5 tsf	Very stiff, dark gray, CLAY, trace Gravel, trace Sand, moist (CL).	CLAY (CL)		
67									
68					1.7 ppm				
69									
70	15	60/60	70-75		0.3 ppm >4.0 tsf	Hard, dark brown, Clayey Gravel, dark brown, sub-round, moist (GL).	70' GRAVEL (GL)		
71									
72									Bentonite Seal
73					0.7 ppm				
74									
75	16	60/60	75-80		1.2 ppm >4.0 tsf	Hard, dark brown, lean CLAY, little Gravel, moist (CL). Changing at 79.0 feet to: Very stiff, dark brown, Clayey GRAVEL, some Sand, trace Cobbles, moist (GC).	75' CLAY (CL)		
76									Top of Well Screen
77									
78					1.7 ppm				
79							79' GRAVEL (GL)		
80	17	60/60	80-85		1.6 ppm	Medium dense, dark brown, Clayey SAND with Gravel, Cobbles at 81.0 feet, moist (SC).	80' SAND (SC)		Silica Sand Filter Pack
81									2-Inch Dia. 10-Foot PVC Screen (0.010" Slot)
82									
83					2.3 ppm				
84									
85	18	60/60	85-90		1.1 ppm	Loose, dark brown, SAND, trace Gravel, wet (SW). Changing at 85.8 feet to: Hard, dark gray, lean CLAY, low plasticity, moist (CL). Changing at 86.6 feet to: Hard, dark red with gray mottles, lean CLAY, small inclusions of white precipitate in gray mottles, possible gypsum Wet (CL).	85' 85.8' SAND (SW) 86.6' CLAY (CL) CLAY (CL)		
86									Bottom of Well Screen
87									
88					1.0 ppm				
89									
90	19	60/60	90-95		1.9 ppm	Hard, dark reddish brown with gray mottles, lean CLAY, small inclusions of white precipitate material inclusions, dry to moist (CL).			
91									
92									
93					1.3 ppm				
94									
95	20	48/48	95-99		1.1 ppm >4.0 tsf	Hard, dark reddish brown with gray mottles, lean CLAY, small inclusions of white precipitate material inclusions, dry to moist (CL).			
96									
97									
98					1.2 ppm				
99							99'		
						Bottom of Borehole at 99.0 Feet		3 4	

REMARKS

3. Groundwater was not encountered during drilling or upon completion.
4. Monitoring well was installed in borehole upon completion. Well screen set from 76.0 to 86.0 feet below ground surface.

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

Boring No.: MW-21D

BORING_WELL 6233552 WWW PACKER DR_PLAINFIELD MI.GPJ GZA_CORP.GDT 2/2/18

GZA
GeoEnvironmental, Inc.
Engineers and Scientists

Wolverine World Wide, Inc.
Packer Drive
Plainfield, Michigan

Boring No.: MW-21M
Page: 1 of 2
File No.: 16.0062335.52
Check:

Contractor: Cascade Drilling
Foreman: Jason
Logged by: John Morehouse
Date Start/Finish: 1-18-18 / 1-18-18
Boring Location:
GS Elev.: Datum:

	Auger/ Casing	Sampler
Type:	Sonic	NA
O.D. / I.D.:	NA	NA
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1–29						See MW-21D boring log for sample description and classification.			PROTECTIVE CASING; Grout

REMARKS

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

Boring No.: MW-21M

BORING_WELL 6233552 WWW PACKER DR_PLAINFIELD MI.GPJ GZA_CORP.GDT 2/2/18

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Packer Drive
Plainfield, Michigan

Boring No.: MW-21M
Page: 2 of 2
File No.: 16.0062335.52
Check:

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
64						Bottom of Borehole at 64.0 Feet		1	Bottom of Well Screen

Bentonite Seal
Top of Well Screen
Silica Sand Filter Pack
2-Inch Dia. 5-Foot PVC Screen (0.010" Slot)

REMARKS

1. Monitoring well was installed in borehole upon completion. Well screen set from 59.0 to 64.0 feet below ground surface.

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

Boring No.: MW-21M

BORING_WELL 6233552 WWW PACKER DR_PLAINFIELD MI.GPJ GZA_CORP.GDT 2/2/18

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Engineers and Scientists

Wolverine World Wide, Inc.
Packer Drive
Plainfield, Michigan

Boring No.: MW-21S
Page: 1 of 1
File No.: 16.0062335.52
Check:

Contractor: Cascade Drilling
Foreman: Jason
Logged by: John Morehouse
Date Start/Finish: 1-18-18 / 1-18-18
Boring Location:
GS Elev.: **Datum:**

	Auger/ Casing	Sampler
Type:	Sonic	NA
O.D. / I.D.:	NA	NA
Hammer Wt.:	NA	NA
Hammer Fall:	NA	NA
TOC Elev.:	NA	NA

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab

Surveyed By: NA **Survey Date:**

Depth	Sample Information: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
1–20						See MW-21D boring log for sample description and classification.			PROTECTIVE CASING; Bentonite Seal; Top of Well Screen; Silica Sand Filter Pack; 2-Inch Dia. 10-Foot PVC Screen (0.010" Slot); Bottom of Well Screen
20						Bottom of Borehole at 20.0 Feet		1	
21–29									

REMARKS

1. Monitoring well was installed in borehole upon completion. Well screen set from 10.0 to 20.0 feet below ground surface.

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

Boring No.: MW-21S

BORING_WELL 6233552 WWW PACKER DR_PLAINFIELD MI.GPJ GZA_CORP.GDT 2/2/18



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