

April 30, 2018

Sigma Reference #17076

Mr. Binyoti Amungwafor  
Ms. Nancy Ryan  
c/o Mr. Chue Yee Yang, Env. Program Associate  
Wisconsin Department of Natural Resources  
2300 N. Dr. Martin Luther King, Jr. Drive  
Milwaukee, WI 53121

**RE: NR 718.12 Contaminated Soil Management Request**

**Generating Site: MSOE Diercks Computational Science Hall Project  
1025 N. Milwaukee Street, Milwaukee, WI 53202  
BRRTS #02-41-581016, FID #241343410**

**Receiving Site: Former Lakefield Sand & Gravel Property  
7003 W. Good Hope Road, Milwaukee, WI 53223  
BRRTS #02-41-548828, FID #241377070**

Dear Mr. Amungwafor and Ms. Ryan:

On behalf of Milwaukee School of Engineering (MSOE) as the owner of the MSOE Diercks Computational Science Hall property referenced above (the "Generating Site") and SWP Properties, LLC as the owner of the former Lakefield Sand and Gravel property referenced above (the "Receiving Site"), The Sigma Group, Inc. (Sigma) has prepared the enclosed application package to request Wisconsin Department of Natural Resources (WDNR) approval to manage up to 12,000 cubic yards (CY) of soil impacted with polynuclear aromatic hydrocarbons (PAHs) and/or Resource Conservation and Recovery Act (RCRA) metals at the Receiving Site. Soil will be generated at the Generating Site during excavations for underground basements and foundations and transported to the Receiving Site for beneficial reuse to raise the ground surface grades before a final clean soil cap is installed. Both the Generating Site and Receiving Site are active WDNR Remediation and Redevelopment projects, and the proposed NR 718 soil management activities between the properties will be mutually beneficial.

Please note that the overall MSOE Diercks Computational Science Hall project is expected to generate up to approximately 27,000 CY of soil from excavation work. One NR 718 exemption application was submitted by Sigma in early April 2018 to transport 7,000 CY of soil to the Milwaukee Solvay Coke & Gas property for beneficial reuse, and a second NR 718 exemption request was submitted by Friess Environmental Consulting, Inc. in early April 2018 to accept the balance of soil (after the 7,000 CY) at the R&R Excavating contractor disposal site in the Town of Cedarburg. However, the application for the R&R Excavating contractor disposal site is still awaiting the second owner's signature and we are unsure when this will occur, so this current NR 718 exemption application for Lakefield Sand and Gravel is intended to satisfy a little over half of the remaining 20,000 CY of soil that will excavated at the Generating Site. Any remaining

soil that cannot be accommodated under an approved NR 718 exemption will be hauled to a traditional WDNR-licensed landfill facility.

This NR 718 exemption request will be the last one for Lakefield Sand and Gravel. During an April 2018 survey, it was determined that approximately 11,000 to 12,000 CY of NR 718 soil material is needed to fill the Receiving Site to the necessary subgrade elevations prior to finishing the final capping. Due to the timing of this MSOE project, a timely WDNR approval is requested Lakefield Sand and Gravel can filled to completion and the final cap installed during the 2018 construction season.

Specific information for the proposed MSOE-to-Lakefield Sand and Gravel soil management is included in the attached document RR-072 "Recommended Format for Exemption Request Wis. Admin. Code § NR 718.12 or § NR 718.15". A check for \$1,000 WDNR review fee is also attached as the Lakefield Sand and Gravel property requires a clean soil cap to cover the impacted soil and ultimately achieve case closure. We request that the WDNR review this submittal within 30 days so MSOE soil excavation can commence by early June 2018.

We appreciate your prompt attention to this request. Please contact Sigma at (414) 643-4200 with any questions.

Sincerely,

**THE SIGMA GROUP, INC.**



Adam J. Roder, P.E.  
Senior Engineer



Randy E. Boness, P.G.  
Geoscience Group Leader

cc: Dr. Blake Wentz - MSOE (via email: [wentz@msoe.edu](mailto:wentz@msoe.edu))  
Mr. Dave Scherzer - SWP Properties, LLC (via email: [dscherzer@thesigmagroup.com](mailto:dscherzer@thesigmagroup.com))  
Ms. Kristin Kurzka - Sigma (via email: [kkurzka@thesigmagroup.com](mailto:kkurzka@thesigmagroup.com))



## Remediation and Redevelopment Program

April 2017

# Recommended Format for Exemption Request

## Wis. Admin. Code § NR 718.12 or § NR 718.15

### Purpose

The purpose of this document is to provide a consistent format for consultants and responsible parties to demonstrate that the proposed management of solid waste material qualifies for a Wis. Admin. Code §§ NR 718.12 or NR 718.15 exemption and to request written approval of the exemption request. This document may be included as part of a Remedial Action Plan or Post Closure Modification Request, or can be submitted by itself depending on the activities conducted at the site. Using this recommended format will likely result in a faster DNR review. At a minimum, all exemption requests must satisfy the requirements of a soil management plan as outlined in Wis. Admin. Code § 718.12(2)(b).

### Introduction

Soil and other solid waste generated from a response action site as part of an interim or remedial action may be managed at a site or facility that is not an operating licensed landfill if a Wis. Admin. Code §§ NR 718.12 or NR 718.15 exemption is obtained from the Department of Natural Resources (DNR). The site or facility where material will be managed (the receiving property) would be exempted from the Waste and Materials Management Program requirements established in Wis. Stat. § 289 and Wis. Admin. Code §§ NR 500 to NR 538. The “receiving property” may be the same site or facility where the solid waste was generated from, or it may be a different site or facility. An exemption through Wis. Admin. Code § NR 718.12 can be granted when soil is being managed as part of an interim action under Wis. Admin. Code § NR 708 or a remedial action under Wis. Admin. Code § NR 722. An exemption through Wis. Admin. Code § NR 718.15 can be granted when other solid waste material is managed as part of an interim or remedial action on the site from which it was generated. Managing solid waste material with either exemption requires prior written approval from the DNR.

If this exemption request involves contaminated material impacted by a discharge that has not been reported to the DNR, a ‘Notification for Hazardous Substance Discharge (non-emergency)’ form must be completed and submitted immediately as required by Wis. Admin. Code

§ NR 706. This form is located at <http://dnr.wi.gov/files/pdf/forms/4400/4400-225.pdf>.

This form is not intended to be used for immediate actions under Wis. Admin. Code § NR 708 as prior DNR approval is typically not required. Immediate actions do not require prior DNR approval if the requirements of Wis. Admin. Code § NR 718.12(1) are met, contaminant concentrations do not exceed Wis. Admin. Code § NR 720 soil residual contaminant levels, and the quantity of material managed is less than 100 cubic yards total.

Exemptions for projects involving large-scale disposal or requiring items such as a liner system, leachate treatment and an engineered cap, or projects proposing to place the material below the groundwater table, should not be requested using this format. Check with DNR staff before submitting such a proposal.

### Document Instructions

Complete all sections of this document as instructed. Some portions of the document may be filled in directly as indicated, other responses will need to be completed separately and attached. Fully explain why any uncompleted section is not relevant. Submit one hardcopy and one electronic copy of the completed document and all required attachments and fees to the DNR project manager responsible for the site where the waste will be excavated. The request may be submitted to the regional environmental program associate (EPA) if a project manager has not been assigned to this case. A list of EPAs can be found here: <http://dnr.wi.gov/topic/Brownfields/Contact.html>.

## Section 1 – General Information and Fees

Identify the purpose of the exemption by checking each box that applies:

- Manage contaminated soil on the same response action site from which it was generated (§ NR 718.12).  
 Manage contaminated soil at a site or facility that is different from the response action site from which it was generated (§ NR 718.12).  
 Manage other solid waste at the same site from which it was generated (§ NR 718.15).

If none of the above boxes are checked, the proposed waste management activity cannot be exempted through Wis. Admin. Code § NR 718. Management of waste material from a site other than a response action site may be allowed after obtaining a “low hazard exemption” from the DNR Waste and Material Management Program. Guidance on a ‘low hazard exemption’ request is located: <http://dnr.wi.gov/files/PDF/pubs/wa/wa1645.pdf>.

Identify the applicable Wis. Admin. Code § NR 749 DNR review fees for this submittal by checking the applicable “On-Site Management Fee.” If material will be managed at a site or facility other than where it was generated, also select the appropriate “Off-Site Management Fee.” Record the combined fee sums in the space provided below.


NR 749 Fees for Requesting Wis. Admin. Code §§ NR 718.12 Soil or NR 718.15 Exemption			
Soil or Waste Managed on the Generating Property			
Action	Action Fee	WRRD Fee	On-Site MGMT Fee
<b>Interim Actions</b> per NR 708.11, with SMP and CO applied at other site/facility	\$700	No fee	<input type="checkbox"/> \$700
<b>Remedial Action Plan</b> approval, with SMP, without residual soil CO	\$1050	No fee	<input type="checkbox"/> \$1050
<b>Remedial Action Plan</b> approval, with SMP, with residual soil CO	\$1050	\$300	<input type="checkbox"/> \$1350
<b>SMP</b> submitted separately from a RAP or CO modification, without residual soil CO	\$700	No fee	<input type="checkbox"/> \$700
<b>SMP</b> submitted separately from a RAP or CO modification, with residual soil CO	\$700	\$300	<input type="checkbox"/> \$1000
<b>Closed Sites:</b> CO modification action, with SMP, without residual soil CO	\$1050	No fee	<input type="checkbox"/> \$1000
<b>Closed Sites:</b> CO modification action, with SMP, with residual soil CO	\$1050	\$300	<input type="checkbox"/> \$1350
Soil Managed on a Site or Facility other than the Generating Property			
Action	Action Fee	WRRD Fee	Off-Site MGMT Fee
<b>Interim Actions</b> per NR 708.11, with SMP and CO applied at other site/facility	\$700	\$350	<input type="checkbox"/> \$1050
<b>Interim Actions</b> per NR 708.11, with SMP and no CO applied at other site/facility	\$700	No fee	<input type="checkbox"/> \$700
<b>All other Actions</b> (Remedial actions, modifications to CO, etc.) with residual soil CO	\$700	\$300	<input checked="" type="checkbox"/> \$1000
<b>All other Actions</b> (Remedial actions, post closure modifications, etc.) with no residual soil CO	\$700	No fee	<input type="checkbox"/> \$700
<b>Total of On-Site Management Fee and Off-Site Management Fee</b>			<b>\$ 1,000</b>
<b>Other:</b> If the request does not conform to one of the options above, summarize the request below and the fee that is being paid:			
1) <b>SMP</b> – A Soil Management Plan submitted in accordance with NR 718.12 (1) and (2) or NR 718.15. 2) <b>“With residual soil CO”</b> - site will have a residual soil continuing obligation (e.g. engineering control, cap, or cover) applied at the source property at the end of the applicable action; remedial action approval, or approval by an addendum to the closure letter. 3) <b>“Without residual soil CO”</b> - site that will not have a residual soil continuing obligation applied at the source property at the end of the applicable action. 4) <b>WRRD</b> – Wisconsin Remediation and Redevelopment Database			

## Section 2 –Property and Contact Information

Fill in all applicable portions of this section.

A. Information About the Site or Facility From Which Material is Proposed to be Excavated – Complete all applicable boxes					
<b>BRRTS No.</b> #02-41-581016			<b>BRRTS Activity (Site) Name</b> MSOE Diercks Computational Science Hall		
<b>Response Action Site Address</b> 1025 N. Milwaukee Street			<b>VPLE No.</b> N/A		
<b>City</b> Milwaukee			<b>Parcel ID No.</b> 3930411000		
<b>State</b> Wisconsin			<b>FID No.</b> #241343410		
<b>County</b> Milwaukee			<b>Zip Code</b> 53202		
<b>WTM Coordinates</b>			<b>WTM Coordinates Represent</b>		
X: 690440		Y: 287865	Source Area <input type="checkbox"/>		Parcel Center <input checked="" type="checkbox"/>
NW ¼	NW ¼	Sec: 28	T: 07 N	R: 22	E/W: E
<b>Latitude:</b> 43.04435° N			<b>Longitude:</b> 87.90745° W		
<b>Current Zoning:</b> C9D(A) Central Business - Civic Activity			<b>Current Land Use:</b> Surface parking lot for MSOE		

The Wis. Admin. Code §§ NR 718.12 and/or NR 718.15 exemption(s) will be issued to the Wis. Admin. Code § NR 700 responsible party identified below and to the owner of the receiving site or facility, if different than the generating site. If there is more than one responsible party or property owner, include the information requested below for each as a separate document and attach to this document. If the responsible party is not the owner of the site or facility, provide that information below.

<b>B. Responsible Party Information</b>			
<b>Responsible Party (RP) Name(s)</b> Milwaukee School of Engineering (Attn: Dr. Blake Wentz)		<b>Company Name</b> Milwaukee School of Engineering	
<b>Signature(s)</b> 		<b>Date</b> 4/30/18	
<b>Mailing Address</b> 1025 N. Broadway	<b>City</b> Milwaukee	<b>State</b> WI	<b>ZIP Code</b> 53202
<b>Phone # (include area code)</b> (414) 277-2204		<b>Email</b> <a href="mailto:wentz@msoe.edu">wentz@msoe.edu</a>	

<b>C. Owner Information for Site or Facility From Which Material is Proposed to be Excavated from, if Different than Responsible Party</b>			
<b>Responsible Party (RP) Name(s)</b> N/A, same as above		<b>Company Name</b> N/A, same as above	
<b>Signature(s)</b>		<b>Date</b>	
<b>Mailing Address</b>	<b>City</b>	<b>State</b>	<b>ZIP Code</b>
<b>Phone No. (include area code)</b>		<b>Email</b>	

Fill in this next section if someone other than the responsible party and/or facility owner is preparing this submittal.

<b>D. Requestor Information</b>			
<b>Last Name</b>	<b>First</b>	<b>Organization/Business Name</b>	
Roder	Adam	The Sigma Group, Inc.	
<b>Signature(s)</b>			<b>Date</b>
Adam J. Roder			4/30/18
<b>Mailing Address</b>		<b>City</b>	<b>State</b> <b>ZIP Code</b>
1300 W. Canal Street		Milwaukee	WI    53233
<b>Phone No. (include area code)</b>		<b>Email</b>	
(414) 643-4134		aroder@thesigmagroup.com	
<p><b>Check the box that describes the requestor's relationship to the generating property:</b></p> <p><input checked="" type="checkbox"/> <b>Is the property owner's agent or consultant?</b></p> <p><input type="checkbox"/> <b>Is renting or leasing the property?</b></p> <p><input type="checkbox"/> <b>Is developing the property?</b></p> <p><input type="checkbox"/> <b>Other, describe relationship:</b> _____</p>			

<b>E. Contact Information For Questions About this Request</b>		
<b>Last Name</b>	<b>First</b>	<b>Organization/Business Name</b>
Roder	Adam	The Sigma Group, Inc.
<b>Mailing Address</b>		<b>Email</b>
1300 W. Canal Street		aroder@thesigmagroup.com
<b>City</b>		<b>Phone No. (include area code)</b>
Milwaukee		(414) 643-4134
<b>State</b>	<b>Zip Code</b>	<b>Relationship to Requestor (Same, Consultant, Developer, Etc.):</b>
WI	53233	Environmental Consultant

**F. Information About the Site or Facility Where Contaminated Soil Will Be Disposed, if at a Different Location Than The Site or Facility From Which it Was Generated**

**Select if Same as Generating Property (and skip remainder of section)**

<b>BRRTS No.</b> #02-41-548828		<b>BRRTS Activity (Site) Name</b> Former Lakefield Sand and Gravel Property	
<b>Receiving Site or Facility Address</b> 7003 W. Good Hope Road		<b>VPLE No.</b> N/A	
<b>City</b> Milwaukee		<b>Parcel ID No.</b> 1199997110	
<b>State</b> Wisconsin		<b>FID No.</b> #241377070	
<b>County</b> Milwaukee		<b>Zip Code</b> 53223	
<b>WTM Coordinates</b>		<b>WTM Coordinates Represent</b>	
X: 682730		Y: 298685	
		Source Area <input type="checkbox"/> Parcel Center <input type="checkbox"/>	
<b>DISPOSAL LOCATION ON RECEIVING SITE</b>			
SE ¼	NW ¼	Sec: 22	T: 08N R: 21E E/W: E
<b>Latitude:</b> 43.14342° N		<b>Longitude:</b> 87.99888° W	
<b>Current Zoning:</b> IL1 – Industrial-Light		<b>Current Land Use:</b> Undeveloped	



## G. Receiving Site or Facility (Source Property or Off-Site Property) Owner Information

Provide the following information for the owner of the receiving site or facility. If there is more than one property owner include the information requested below for each as a separate document and attach to this form.

<b>Property Owner Name(s)</b> SWP Properties, LLC (Attn: Dave Scherzer)	<b>Company Name</b> SWP Properties, LLC		
<b>Mailing Address</b> 1300 W. Canal Street	<b>City</b> Milwaukee	<b>State</b> WI	<b>ZIP Code</b> 53233
<b>Phone Number (include area code)</b> (414) 643-4101	<b>Email</b> <a href="mailto:dscherzer@thesigmagroup.com">dscherzer@thesigmagroup.com</a>		

### Section 3 – Waste Characterization

Address the following items to describe the contaminated soil and/or other solid waste material that will be managed under this plan and demonstrate that it has been adequately characterized. Attach your responses to these items at the end of this document.

- A. Describe the material proposed to be managed, including its general makeup, physical characteristics, the homogeneity of the material, the proportion of soil to other solid waste, and any other pertinent descriptors.

An estimated 27,000 cubic yards (CY) of soil are anticipated to be excavated from the MSOE Diercks Computational Science Hall project (1025 N. Milwaukee Street; hereinafter the "Site") for basement and foundation excavations (refer yellow- and green-shaded areas on **Figure 1**). One NR 718 exemption application was submitted to the WDNR by Sigma in early April 2018 to transport 7,000 CY of soil to the Milwaukee Solvay Coke & Gas property for beneficial reuse (green-shaded areas on **Figure 1**), and a second NR 718 exemption request was submitted to the WDNR by Friess Environmental Consulting, Inc. in early April 2018 to accept the balance of soil (after the 7,000 CY above) at the R&R Excavating contractor disposal site in the Town of Cedarburg. However, the application for the R&R Excavating contractor disposal site is still awaiting the second owner's signature and we are unsure when this will occur, so this current NR 718 exemption application for Lakefield Sand and Gravel is intended to cover up to 12,000 CY of soil that will excavated at the Site (from the yellow-shaded areas as shown on **Figure 1**).

The approximately 12,000 CY of material to be managed under this NR 718 exemption will consist of reworked soil consisting of clay, silt, sand, and gravel (soil descriptions from representative soil boring logs include: silty clay, sandy clay, clayey sand, sand, gravelly sand, and sandy gravel). Occasional brick fragments were identified in some soil borings, but no other non-soil inclusions or waste materials were not encountered.

- B. Describe the historic and current land use of the site or facility where the contaminated soil or other solid waste originates. State how this site or facility is zoned.

Historic Land Use: Historic land use information was documented in Sigma's *Site Investigation Report & Remedial Action Plan Report, MSOE Diercks Computational Science Hall Development, 1025 N. Milwaukee Street, Milwaukee, Wisconsin 53202*, which was submitted to the WDNR on March 26, 2018. In short, the Site was previously developed with residential dwellings, two church buildings (one of which was later converted into a MSOE auditorium), a Jewish Center of Milwaukee building (which was later converted into a MSOE building), two other MSOE buildings (classrooms and storage), and a surface parking lot.

Current Land Use: The Site is currently used as a surface parking lot.

Zoning: The Site is currently zoned C9D(A) Central Business - Civic Activity.

C. Total volume of contaminated soil and/or other solid waste to be managed (cubic yards):

The estimated volume of soil to be managed under this NR 718 exemption will be up to 12,000 CY. As described above, an estimated 27,000 CY of soil may be generated at the Site for basement and foundation excavations and 7,000 CY of this amount is designated for the Milwaukee Solvay Coke & Gas property. Therefore, the 12,000 CY of soil proposed for this NR 718 exemption will come from the balance of about 20,000 CY.

The soil volume areas are depicted on **Figure 1**. All soil excavated will be transported off-site for the Diercks Computational Science Hall project. The excavation work for the project will begin on or near June 1, 2018.

D. Describe identified contaminants and the source(s). Indicate whether contaminant concentrations exceed Wis. Admin. Code § NR 720 Residual Contaminant Levels. Include a summary table, map with sample locations, and relevant laboratory data.

Soil contaminants identified at the Site include polynuclear aromatic hydrocarbons (PAHs) and Resource Conservation and Recovery Act (RCRA) metals reported at concentrations above protection of groundwater RCLs and/or direct contact pathway RCLs; no volatile organic compounds (VOCs) or polychlorinated biphenyls (PCBs) were detected in any of the soil samples. Soil quality data are summarized in Table 1 - Soil Analytical Results in **Attachment 1** and **Figure 2**. Soil laboratory analytical reports were included in Sigma's *Site Investigation Report & Remedial Action Plan Report, MSOE Diercks Computational Science Hall Development, 1025 N. Milwaukee Street, Milwaukee, Wisconsin 53202*, which was submitted to the WDNR on March 26, 2018.

Within the excavation volume of 20,000 CY (excluding the 7,000 CY of soil designated for the Solvay Coke & Gas property), representative laboratory analytical data from the following soil borings / samples are highlighted in red in Table 1 - Soil Analytical Results in **Attachment 1** and includes 73 samples:

- GP-1 (2 samples), GP-2 (2 samples), GP-3 (2 samples), GP-5 (2 samples), GP-7 (1 sample), GP-9 (1 sample), MW-1 (3 samples), MW-3 (3 samples), MW-4 (1 sample), MW-5 (1 sample), GP-10 (3 samples), GP-11 (3 samples), GP-12 (3 samples), GP-14 (3 samples), GP-15 (3 samples), GP-16 (3 samples), GP-17 (3 samples), GP-18 (3 samples), GP-19 (3 samples), GP-20 (2 samples), GP-21 (3 samples), GP-22 (2 samples), GP-23 (3 samples), GP-27 (3 samples), GP-35 (3 samples), GP-36 (2 samples), GP-37 (3 samples), and GP-38 (3 samples).

All the VOC (non-detect), PCB (non-detect), PAH (non-detect to above RCLs) and RCRA metals (non-detect to above RCLs) concentrations in these samples are within the range of

contaminant concentrations already identified at the Former Lakefield Sand and Gravel property (refer to **Attachment 2**), except for four data outliers:

- MW-2, 1 to 2.5 feet bgs: Arsenic was reported at 13.5 mg/kg relative to the maximum concentration of 12 mg/kg at the Former Lakefield Sand and Gravel property (12.5% higher).
- GP-20, 2 to 4 feet bgs: Mercury was reported at 0.67 mg/kg relative to the maximum concentration of 0.57 mg/kg at the Former Lakefield Sand and Gravel property (17.5% higher).
- GP-22, 2 to 4 feet bgs: Arsenic was reported at 14.7 mg/kg relative to the maximum concentration of 12 mg/kg at the Former Lakefield Sand and Gravel property (22.5% higher).
- GP-36, 4 to 6 feet bgs: Arsenic was reported at 19.1 mg/kg relative to the maximum concentration of 12 mg/kg at the Former Lakefield Sand and Gravel property (59% higher).

From an overall risk perspective, these four results do not significantly increase the direct contact pathway risk by including these soil samples into the overall volume (up to 12,000 CY) of soil that would be transported to the Former Lakefield Sand and Gravel property. Furthermore, this soil from the entire MSOE site is not expected to exacerbate groundwater quality conditions at the Former Lakefield Sand and Gravel property for the following reasons:

- Following the receipt of total PAH data, the five soil samples with the highest PAH concentrations (GP-14, 2 to 4 feet; GP-17, 2 to 4 feet; GP-20, 2 to 4 feet; GP-23, 2 to 4 feet; and GP-38, 2 to 4 feet) were selected for water leachability testing (by ASTM 3987) to determine if the PAHs in the solid (soil) phase would partition into the dissolved (water) phase. The dissolved PAH concentrations in the aqueous solution from each of the five soil samples were all reported below NR 140 Preventive Action Limits (PALs), which confirms that the PAHs have a strong affinity to remain in the solid (soil) phase and not dissolve into the groundwater phase (refer to Table 2 - Soil Water Leaching Analytical Results in **Attachment 1**). Furthermore, groundwater data from five NR 141-compliant monitoring wells installed at the Site also indicate that PAHs are not leaching from the soil phase into the groundwater phase on a Site-wide perspective (refer to Table 3 - Groundwater Analytical Results in **Attachment 1**).
- Following the receipt of total RCRA metals data, the five soil samples with the highest metals concentrations (MW-4, 8.5 to 10 feet (for arsenic); GP-20, 2 to 4 feet (for barium, lead, and mercury); GP-22, 2 to 4 feet (for arsenic, barium, cadmium, lead, and mercury); GP-23, 2 to 4 feet (for barium, lead, and mercury); and GP-36, 2 to 4 feet (for cadmium, lead, and mercury) were selected for water leachability testing (by ASTM 3987) to determine if the RCRA metals in the solid (soil) phase would partition into the dissolved (water) phase. The dissolved RCRA metals concentrations in the aqueous solution from each of the five soil samples were generally reported below NR 140 Enforcement Standards (ESs) and PALs, except for arsenic (one sample at an estimated concentration of 11 micrograms per liter [ $\mu\text{g/L}$ ], chromium in two samples at 17  $\mu\text{g/L}$  and 29  $\mu\text{g/L}$ , and lead in five samples at 4.8  $\mu\text{g/L}$  to 15  $\mu\text{g/L}$  [although lead was detected in associated method blank, so results could be biased high]) (refer to Table 2 - Soil Water Leaching Analytical Results in **Attachment 1**). However, groundwater data from the five NR 141-compliant monitoring wells installed at the Site indicate that metals are not leaching from the soil phase into the groundwater phase on a Site-wide perspective (refer to Table 3 - Groundwater Analytical Results in **Attachment 1**).

The source of the PAH and RCRA metals soil impacts is attributed to reworked soil historically placed at the Site. No specific point sources are known or suspected.

- E. Describe the sampling activities conducted to characterize the material including where the samples were collected from, how sample locations were chosen, the sampling methods used, and when sampling activities were conducted.

Sigma advanced direct push (Geoprobe®) and hollow stem auger (HSA) soil borings across the Site between December 2017 and February 2018. No specific point sources are known or suspected, so the soil borings were spatially distributed across the project limits to characterize soil quality in areas that would be excavated during construction. A total of 109 discrete soil samples (one to three per soil boring) across the whole Site were collected for laboratory analysis VOCs, PAHs, and RCRA metals; 9 soil samples were also analyzed for PCBs.

- December 1, 2017: Sigma installed 9 Geoprobe® soil borings (GP-1 through GP-9); one to two soil samples from each boring were containerized and submitted for laboratory analysis of VOCs, PAHs, RCRA metals, and PCBs.
- February 26 to 28, 2018: Sigma installed 29 Geoprobe® soil borings (GP-10 through GP-38); one to three samples from each boring were containerized and submitted for laboratory analysis of VOCs, PAHs, and RCRA metals.
- February 26 and 27, 2018: Sigma oversaw the installation of 5 HSA soil borings (MW-1 through MW-5); three soil samples from each boring were containerized and submitted for laboratory analysis of VOCs, PAHs, and RCRA metals.

Additional details are included in Sigma's *Site Investigation Report & Remedial Action Plan Report, MSOE Diercks Computational Science Hall Development, 1025 N. Milwaukee Street, Milwaukee, Wisconsin 53202*, which was submitted to the WDNR on March 26, 2018.

- F. Explain how the sampling activities adequately characterized the contaminated soil or other solid waste proposed to be managed. Indicate whether the samples were analyzed for all contaminants previously identified at the site or facility where the material will be generated and analyzed for all contaminants potentially present at the site or facility considering current and historic land use. Discuss how samples were collected from areas most likely to be contaminated and from material that will actually be managed under this exemption.

Soil samples were collected from across the entire Site (horizontally and vertically) for the site investigation activities, as well as for evaluating soil quality for purposes of potential NR 718 soil management planning. Most soil samples (101 out of 109) were collected from areas of the site that will be excavated during redevelopment for basement and related soil cut areas.

The material proposed for off-site management under this NR 718 exemption request was sampled for the potential contaminants described in Section E above based on Phase I Environmental Site Assessment-type research, which included discussions with current MSOE employees and reviewing information on WDNR BRRTS on the Web and RR Sites Map websites, Sanborn Fire Insurance Maps, historic aerial photographs, and City Directories. Historic information did not suggest the need to sample for other potential contaminants of concern.

Further details and results of the site investigation work described above is available in Sigma's *Site Investigation Report & Remedial Action Plan Report, MSOE Diercks Computational Science Hall Development, 1025 N. Milwaukee Street, Milwaukee, Wisconsin 53202*, which was submitted to the WDNR on March 26, 2018.

Contaminants of concern at the Former Lakefield Sand and Gravel property include VOCs (chlorinated solvents and petroleum hydrocarbons), PAHs, arsenic, chromium, lead, mercury, and PCBs. All these contaminants were sampled for at the MSOE Site.

- G. Total number of samples collected from this material and analyzed for contaminants of concern.

Within the volume of 20,000 CY, of which up to 12,000 CY is proposed to be transported to the Former Lakefield Sand and Gravel property for disposal, a total of 73 samples were collected and analyzed for VOCs, PAHs, and RCRA metals (6 of the soil samples were analyzed for PCBs).

- H. Rate of sample collection per volume (samples/cubic yard).

The overall rate of sample collection for the total volume of material is approximately 1 sample per 275 cubic yards of soil (73 samples for the 20,000 CY volume). The sampling rate for the up to 12,000 CY of soil to be transported to the Former Lakefield Sand and Gravel property will be commensurate with the smaller volume.

- I. Wis. Admin. Code § NR 718.12(1)(e) requires that samples collected to characterize soil be collected at a rate of one sample per 100 yards (for the first 600 yards) and one sample for each additional 300 yards of material, with a minimum of 2 samples. If DNR pre-approved an alternative sampling plan, describe how the sampling that was conducted complied with a pre-approved plan. Provide the date the sampling plan was pre-approved and the name of the DNR person who approved the plan.

Not applicable; a pre-approved alternative sampling plan was not requested. Based on the 73 soil samples that were collected from this 20,000 CY volume and following the sampling frequency in NR 718.12(1)(e), up to 20,700 CY of soil would be permissible for a NR 718 exemption request.

## **Section 4 – Project Description/Material Management Plan**

*Address the following items to describe the material management activities proposed to take place. Attach your responses to these items at the end of this document.*

- A. Describe the waste management activities that will require a Wis. Admin. Codes §§ NR 718.12 or NR 718.15 exemption. Provide details on how and where waste material will be generated, transported and placed. Describe the depth of the proposed excavation of contaminated soil or other solid waste, and the depth that it will be placed at the receiving site. Describe any response actions proposed for the receiving site or facility to address the relocated contaminated material (such as the construction of a cap). Confirm the proposed material management will comply with Wis. Admin. Code § NR 726.13(1)(b) 1 through 5. Discuss how material management activities will fit in with the overall property remediation and/or development plans.

Soil from the Site will be excavated with a hydraulic excavator, loaded into quad-axle dump trucks, and transported to the Former Lakefield Sand and Gravel property for placement / compaction. As shown in **Figures 1 and 2**, the soil will be generated from the main mass excavation for the basement and foundation areas of the proposed building. Basement depths

range between approximately 14 feet below grade (generally at the north end of the building) and 16 feet below grade (generally at the south end of the building).

All soil transported to the Former Lakefield Sand and Gravel property will be placed at the ground surface (refer to **Attachment 3** for approximate location) at thicknesses ranging between approximately 0.5 and 10 feet to fill the remaining volume prior to the final construction of the soil cover system, which must achieve a consistent ground surface elevation to allow for post-capping usage as soccer fields. The final soil cover system will consist of a 1-foot thick (minimum) low-permeability clean soil layer with a hydraulic conductivity of  $1 \times 10^{-6}$  centimeters per second covered with a 1-foot thick (minimum) clean soil layer and then a 3-inch thick layer of topsoil to accommodate seeding / grass for stabilization as the ground surface for usage as soccer fields. After placement of this final cap, the soil material to be imported under this NR 718 exemption request will not pose a risk to human health or the environment; adversely impact groundwater, surface water, or air quality; nor pose a vapor intrusion risk.

- B. Summarize the proposed schedule for implementation of the material management plan including anticipated start and end dates.

Soil excavation at the Site is expected to begin on or near June 1, 2018. It is expected that the up to 12,000 CY of soil proposed for the Former Lakefield Sand and Gravel property would be excavated and transported in June and/or July 2018. Each truckload of soil transported to the Former Lakefield Sand and Gravel property will include a numbered manifest to track the number of loads.

- C. Describe any procedures that have been established, or methods that will be used, to identify previously undocumented contamination during the completion of this project (such as instrument field screening, visual inspections, etc.). Also describe any contingency procedures that have been established to address unexpected contamination. The discovery of a previously unknown contaminant release on a property must be immediately reported to the DNR using the 'Notification for Hazardous Substance Discharge (non-emergency)' form.

Field methodologies and contingency plans for unexpected conditions at the Site are included in the *Soil Management Plan* included as **Attachment 4**.

- D. Summarize how the proposed management activities will prevent or minimize adverse environmental impacts and potential threats to human health and welfare, including worker safety, by assessing how all potential exposure and migration pathways of concern, including direct contact exposure, vapor intrusion, ground water, surface water, sediment and any other relevant pathway will be addressed by the proposed management.

A 40-hour OSHA trained environmental professional will be on-Site to identify and direct the proper segregation and disposal of impacted soil excavated during redevelopment, as well to document proper impacted soil management activities. Additional information is included in the *Soil Management Plan* included as **Attachment 4**.

## **Section 5 - Receiving Site or Facility Information**

*Describe the site or facility receiving the waste material by addressing the following items. Where applicable, attach your responses to these items at the end of this document.*

- A. Is the receiving site or facility the same as the generating site? \_\_\_\_\_ Yes      X   No
- B. Describe the historic, current and proposed land use of the site(s) or facility(s) where the

contaminated soil or other solid waste will be managed. How are these site(s) or facility(s) zoned?

Historically, portions the Former Lakefield Sand and Gravel property and portions of other properties to the south were quarried for sand and gravel. Upon completion of the quarry activities – likely in the mid- to late-1960s – the properties were reclaimed through filling. Reportedly the Former Lakefield Sand and Gravel property was used for the disposal of construction and demolition related debris; however, no specific documentation regarding the source of composition of the fill materials was kept.

Currently, the Former Lakefield Sand and Gravel property is in the final stages of filling with NR 718 approved soils; this current MSOE project will be the final NR 718 exemption request. Upon completion of the subgrade filling, the property will be capped with a clean soil cap and vegetated with grass.

The proposed land use will be for additional soccer fields for the adjacent (to the north) Milwaukee Kickers Soccer Club / Uihlein Soccer Park.

The Former Lakefield Sand and Gravel property is currently zoned IL1, Industrial Light by the City of Milwaukee.

C. Identify current uses of all properties adjacent to the site or facility. Check all that apply.

<b>Agricultural</b>	<input type="checkbox"/> N	<input type="checkbox"/> S	<input type="checkbox"/> E	<input type="checkbox"/> W	<input type="checkbox"/> NE	<input type="checkbox"/> NW	<input type="checkbox"/> SE	<input type="checkbox"/> SW
<b>Industrial</b>	<input type="checkbox"/> N	<input checked="" type="checkbox"/> S	<input type="checkbox"/> E	<input type="checkbox"/> W	<input type="checkbox"/> NE	<input type="checkbox"/> NW	<input type="checkbox"/> SE	<input type="checkbox"/> SW
<b>Recreational</b>	<input checked="" type="checkbox"/> N	<input type="checkbox"/> S	<input type="checkbox"/> E	<input type="checkbox"/> W	<input type="checkbox"/> NE	<input type="checkbox"/> NW	<input type="checkbox"/> SE	<input type="checkbox"/> SW
<b>Residential</b>	<input type="checkbox"/> N	<input type="checkbox"/> S	<input checked="" type="checkbox"/> E	<input type="checkbox"/> W	<input type="checkbox"/> NE	<input type="checkbox"/> NW	<input type="checkbox"/> SE	<input type="checkbox"/> SW
<b>Undeveloped</b>	<input type="checkbox"/> N	<input type="checkbox"/> S	<input checked="" type="checkbox"/> E	<input checked="" type="checkbox"/> W	<input type="checkbox"/> NE	<input type="checkbox"/> NW	<input type="checkbox"/> SE	<input type="checkbox"/> SW
<b>Commercial</b>	<input type="checkbox"/> N	<input checked="" type="checkbox"/> S	<input type="checkbox"/> E	<input type="checkbox"/> W	<input type="checkbox"/> NE	<input type="checkbox"/> NW	<input type="checkbox"/> SE	<input type="checkbox"/> SW
<b>Other</b>	<input type="checkbox"/> N	<input type="checkbox"/> S	<input type="checkbox"/> E	<input type="checkbox"/> W	<input type="checkbox"/> NE	<input type="checkbox"/> NW	<input type="checkbox"/> SE	<input type="checkbox"/> SW

Describe 'Other' property use below:

D. Briefly describe any previous environmental site investigations or remedial actions conducted at the site or facility. Describe the environmental condition of the portion of the receiving site or facility where waste will be placed including what contaminants are present, the environmental sampling conducted in that area, and whether identified contaminant concentrations exceed applicable standards.

In response to concerns that industrial wastes may have been placed at the Former Lakefield Sand and Gravel property, the WDNR in 2003 was tasked by the US Environmental Protection Agency to assessment subsurface quality conditions relative to potential risks to human health and the environment. Soil samples were collected at on-site and off-site soil boring locations, five groundwater monitoring wells were installed, and seven surface soil samples were collected at on-site and off-site locations. The assessment activities and results were documented in an April 2006 report.

A supplemental investigation was conducted in 2006, which consisted of the installation of seven soil borings, four groundwater monitoring wells, and two piezometers. Soil samples were submitted for laboratory analysis, as were groundwater samples collected in late 2006. These additional investigation activities and results were documented to the WDNR in a July 2007 Phase II Environmental Site Assessment report. Contaminants of concern at the Former Lakefield Sand and Gravel property include VOCs (chlorinated solvents and petroleum hydrocarbons), PAHs, arsenic, chromium, lead, mercury, and PCBs; some concentrations exceed protection of groundwater RCLs and/or direct contact pathway RCLs.

Remedial strategies were presented to the WDNR in a November 2007 *Remedial Action Plan*. Additional details and data associated with the Former Lakefield Sand and Gravel property are contained within the WDNR's case file for the project, BRRTS #02-41-548828.

- E. Describe any environmentally sensitive areas at or near the site or facility where the contaminated soil will be managed.

A review of NR 718.12 locational criteria is provided:

1. Within a floodplain. The proposed soil relocation area is not located within a floodplain as determined by FEMA.
2. Within 100 feet of any wetland or critical habitat area. The proposed soil relocation area is not located within 100 feet of any wetland or critical habitat area.
3. Within 300 feet of any navigable river, stream, lake, pond or flowage. A pond is located approximately 375 feet northwest of the Former Lakefield Sand and Gravel property; the proposed soil relocation area is not within 300 feet of this pond.
4. Within 100 feet of any on-site water supply well or 300 feet of any off-site water supply well. No potable water supply wells are located on the Former Lakefield Sand and Gravel property or within 300 feet of the property.
5. Within 3 feet of high groundwater level. The placement of the soil will be at or above the existing ground surface. The minimum distance above the high groundwater level will be greater than 3 feet, as groundwater is approximately 8 to 26 feet deep.
6. At a depth greater than the depth of the original excavation from which the contaminated soil is removed. The soil will be placed at or above the existing ground surface within the proposed placement area at the Former Lakefield Sand and Gravel property.
7. Where the contaminated soil poses a threat to public health, safety, or welfare or the environment. After the imported soil is capped with the final clean soil cover, the NR 718 soil will not pose a threat to human health or the welfare of the environment.

- F. Describe any other features of this property not addressed above that influence its suitability for the disposal of the contaminated soil or other solid waste.

No other features of the Former Lakefield Sand and Gravel property influence its suitability for the disposal of the impacted soil.

- G. Briefly discuss the geology and hydrogeology of the receiving site or facility, including information from any previous remedial investigations and well logs or well construction records from nearby wells. Also, provide the information requested below indicating whether the response is based on regional or site-specific information:

Depth to Bedrock (ft. below ground surface): 100 feet      Regional    Site Specific

Bedrock Type:      Sandstone      Limestone/Dolomite      Metamorphic/Igneous



High Groundwater Level (ft. below ground surface): 8 - 26 feet

Groundwater Flow Direction: southwest    Regional    Site Specific

## Section 6 – Locational Criteria

Indicate if excavated waste material will be placed in any of the following locations:

- Within a floodplain.
- Within 100 feet of any wetland or critical habitat area.
- Within 300 feet of any navigable river, stream, lake, pond, or flowage.
- Within 100 feet of any on-site water supply well or 300 feet of any off-site water supply well.
- Within 3 feet of the high groundwater level.
- At a depth greater than the depth of the original excavation from which the contaminated soil was removed.

If any of the above boxes are checked, an exemption from the indicated criteria must be requested as described below. If none of the above boxes are checked, and the proposed placement of waste material will not otherwise pose a threat to the public health, safety, or welfare of the environment, the proposed management activities will comply with the location criteria of Wis. Admin. Code § NR 718.12(1)(c) and you may skip ahead to Section 7.

Include an explanation of why granting an exemption to the Wis. Admin. Code § NR 718.12(1)(c) locational criteria will not cause a threat to public health, safety, welfare and the environment by assessing how all potential exposure and migration pathways of concern, including direct contact exposure, vapor intrusion, ground water, surface water, sediment and any other relevant pathway will be addressed by the proposed management. Consider the quantity and characteristics of the waste being managed, the geologic and hydrogeological characteristics of the receiving site, the unavailability of other environmentally suitable alternatives, and whether the activities will comply with other state and federal regulations including other portions of Wis. Admin. Code §§ NR 700 to NR 754. Attach your response to the end of this document.

Not applicable – all locational criteria are met.

## Section 7 – Additional Information Required for Non-Metallic Mine Receiving Sites or Facilities

*Complete this section if the proposed disposal facility is a non-metallic mine. **NOT APPLICABLE***

A. Current depth to groundwater at facility (feet below ground surface): \_\_\_\_\_

B. Has the facility been dewatered to allow mining?     Yes     No

If yes, indicate the expected natural groundwater level when dewatering is terminated (feet below ground surface): \_\_\_\_\_

C. Is waste proposed to be placed within 10 feet of the natural water table?     Yes\*     No

*\* If yes, placement of the waste will not comply with Wis. Admin. Code §§ NR 503.08(1)(e) and NR 503.08(2)(d).*

D. Include a copy of the reclamation plan indicating the placement of low level contaminated material is acceptable.

E. Describe any design criteria established for the disposal site, include restrictions on material placement, engineered barrier requirements, etc. Attach your response to this item at the end of this document.

## Section 8 – Continuing Obligations at Receiving Site or Facility

Check the applicable boxes to indicate which continuing obligations will be specifically required to address the waste material being managed on the receiving property:

No Continuing Obligations

Residual Soil Contamination:

If contaminated soil managed under this soil management plan is excavated in the future, the property owner at the time of excavation will be responsible for the following:

- determine if contamination is present,
- determine whether the material would be considered solid or hazardous waste,
- ensure that any storage, treatment or disposal is in compliance with applicable statutes and rules.

Contaminated soil may be managed in accordance with Wis. Admin. Code § NR 718, with prior DNR approval. In addition, all current and future property owners and occupants of the property and right-of-way holders need to be aware that excavation of the contaminated soil may pose a hazard and as a result special precautions may need to be taken during excavation activities to prevent a health threat to humans. A historic fill exemption is required prior to construction of any structures over fill materials.

Depending on site-specific conditions, construction over contaminated soils or groundwater may also result in vapor migration of contaminants into enclosed structures or migration along underground utility lines. The potential for vapor intrusion and means of mitigation should be evaluated when planning any future redevelopment, and measures should be taken to ensure the continued protection of public health, safety, welfare and the environment at the site.

Maintenance of a cover:

A soil cover/engineered cover/other has been placed over remaining contamination and this cover must be maintained. Inspections will be required, and submittal of inspection reports may be required. Certain activities which would disturb the cover or barrier will be prohibited. If the cover is approved for industrial land use, notification of the DNR is required before changing to a non-industrial use, to determine if the cover will be protective for that use. A maintenance plan is attached, which describes the maintenance activities to be required. If the DNR requires changes to the maintenance plan, an updated maintenance plan must be provided at the completion of the soil disposal action. A map is attached which shows the location of the extent of contaminated materials and the extent of the cover.

Use of Industrial Land Use Soil Standards:

Industrial soil standards have been applied for the site receiving the contaminated materials. The DNR must be notified if the property land use will change from industrial use to a non-industrial land use. Additional investigation and remediation may be required prior to the change in land use to ensure the site conditions are protective for the planned land use.

Vapor: Future Actions to Address Vapor Intrusion:

While vapor intrusion does not currently exist, if a building is constructed on this property, or reconstructed, or if use of a building is changed to a non-industrial use, vapor intrusion may be a concern. The DNR must be notified before construction of a building or changing the use of an existing building to non-industrial use. The use of vapor control technologies or an assessment of the potential for vapor intrusion will be required at that time.

Site specific condition:

Describe the site-specific condition:

## Section 9 – Figures

Attach to this form figures that clearly depict the items listed below. All maps should be drawn to scale not larger than 1 inch equal to 100 feet and labeled with the site or facility name and address. The location of the property and the specific disposal area must be provided in sufficient detail to allow DNR personnel to inspect these areas in the future. Providing a 'cut/fill' map that clearly depicts how much material will be removed or added to different areas of the involved property(ies) and depicting how material will be moved across the site is highly recommended. Providing cross sections that depict site conditions before and after soil management activities is also recommended.

- The boundaries of each property involved in the project as well as named and unnamed roads or access points, buildings and other surface features, underground utilities, land uses on adjacent properties, and known and potential sources of hazardous substances.

Refer to **Attachment 3** for map of the Former Lakefield Sand and Gravel property.

- The location of wetlands, critical habitat areas, floodplains, surface water bodies, water supply wells, or other possible receptors located near or within the area where material will be managed.

Refer to **Attachment 3** for map of the Former Lakefield Sand and Gravel property.

- The lateral extent and depth of planned excavation, grading, or otherwise disturbed areas.

Refer to **Figure 1** and **Figure 2**.

- The lateral extent and thickness of excavated material placement locations.

Refer to **Attachment 3** for map of the Former Lakefield Sand and Gravel property.

- Soil sample locations at the generating and receiving sites. Depict applicable soil contaminant concentration data and sample depths. Indicate the extent of contamination exceeding a RCL.

Refer to **Figure 1** and **Figure 2** for sample locations and contamination extents at the MSOE Site. Former Lakefield Sand and Gravel property contaminant concentration data and sample depths/figures available in the WDNR's case file for BRRTS #02-41-548828.

- Depth to groundwater.

Depth to groundwater varies between approximately 16 and 20 feet bgs at the MSOE Site, and approximately 8 to 26 feet bgs at the Former Lakefield Sand and Gravel property.

- The extent of any performance standards (such as a barrier or cap) that will be required at the completion of management activities.

The entire NR 718 soil deposit area at the Former Lakefield Sand and Gravel property will be capped with a 2.25-foot thick clean soil cover system.

## Section 10 - Additional Attachments

The following documents are recommended for inclusion with a Wis. Admin. Code § NR 718.12 or a Wis. Admin. Code § 718.15 exemption request. Indicate which of these documents are applicable to this request by checking the boxes below. Submit copies of the indicated documents with this document.

- A table summarizing the analytical results of all soil/waste samples collected at the generating site or facility that meets the requirements of Wis. Admin. Code § 716.15(4)(e).

Clearly indicate which of these samples were collected from material that is proposed to be managed.

Refer to Table 1 - Soil Analytical Results in **Attachment 1**.

- The analytical package for all samples listed on the above table. The package should include the sample results, chain of custody, sampling methods, and QA/QC data.

Refer to Sigma's *Site Investigation Report & Remedial Action Plan Report, MSOE Diercks Computational Science Hall Development, 1025 N. Milwaukee Street, Milwaukee, Wisconsin 53202*, which was submitted to the WDNR on March 26, 2018.

- A maintenance plan for any performance standard needed to address the material proposed to be managed. The plan should follow the format found in [DNR Form 4400-202, Attachment D](#).

Refer to **Attachment 5** for a copy of the proposed (draft) Cap Maintenance Plan for the Former Lakefield Sand and Gravel property.

- A copy of the reclamation plan for the receiving site or facility if it is a nonmetallic mine. Confirm the plan allows for acceptance of contaminated soil by marking relevant plan sections.
- Power of Attorney (if applicable, see Section 12).
- Deed for the property receiving the contaminated soil and or waste. If a certified survey map or plat map is referenced by this deed then also include those documents. If a map is not referenced in the deed, provide a copy of a parcel map depicting the property boundaries.

Refer to Parcel 1 referenced in deed and plat of survey in **Attachment 6**.

## Section 11 - Certification Statements

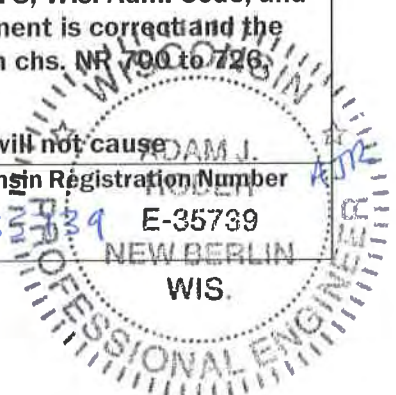
All exemption requests submitted to manage contaminated soil or other solid waste as an interim action or remedial action under Wis. Admin. Code §§ NR 708 or NR 722 must be prepared by, or prepared under, the supervision of a professional engineer. The professional engineer who prepared or supervised this exemption request should complete the following section.

Environmental Consultant Information	
<b>Firm Name</b> The Sigma Group, Inc.	
<b>Mailing Address</b> 1300 W. Canal Street	<b>State</b> Wisconsin
<b>City</b> Milwaukee	<b>ZIP Code</b> 53233

Wis. Admin. Code § NR 712, entitled “Personnel Qualifications for Conducting Environmental Response Actions,” establishes minimum standards for experience and professional qualifications for persons who perform certain environmental services. This law applies to work conducted under Wis. Admin. Code § NR 718, unless specifically exempted.


**Note:** The following certification must be attached to confirm the Wis. Admin. Code § NR 718 exemption request was prepared by or under the supervision of a professional engineer under Wis. Admin. Code § NR 712.07.

Professional Engineer Information			
<b>Last Name</b> Roder	<b>First Name</b> Adam		
<b>Mailing Address</b> The Sigma Group, Inc. 1300 W. Canal Street	<b>City</b> Milwaukee	<b>State</b> WI	<b>ZIP Code</b> 53233
<b>Phone No. (include area code)</b> (414) 643-4200	<b>Email</b> aroder@thesigmagroup.com		
<p>“I hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.</p> <p>It is my professional opinion that the proposed soil management activity will not cause</p>			
<b>Signature</b> Adam J. Roder	<b>Date</b> 4/30/18	<b>Wisconsin Registration Number</b> E-35739	



## Section 12 - Signatures

Each receiving site or facility property owner's signature must be included as part of this request. Attach additional copies of the signature page, if needed. If one of the owners of the receiving site or facility is acting on behalf of other owners, a power of attorney form or statement must be signed and attached to this agreement clearly granting the agent the authority to accept the contaminated soils on behalf of all other owners of the receiving site or facility whose signatures are not included on this agreement.

Owner(s) of Property Where Material is Placed		
Print Name	Signature	Date
David F. Scherzer		4-30-18

I understand that by signing this application I certify that I will follow the conditions and limitations required by law and specified in the exemption issued to me as owner of the site or facility that will receive the contaminated soil. Further, I certify that the contaminated soil proposed to be managed under this exemption will be at a property that meets the definition of "site" or "facility" under Wis. Stats. Chapter 292 and Wis. Admin. Code Chapters §§ NR 700 – 754, and I understand that the material must be managed any time in the future as a solid waste with the department's approval. I understand that this exemption will be tracked in the Wisconsin Remediation and Redevelopment Database, and if required, will include maintenance and inspection by me of any continuing obligations, such as maintaining an engineering control or barrier over the contaminated material, and will also be subject to inspection by the department. I understand that the conditions on my site or facility may be subject to Wis. Stats. Chapter 709, Disclosures by Owners of Real Estate. I believe that the legal description for all properties where material will be managed is included with this submittal.

## RR Program Contacts

General questions regarding Wis. Admin. Code §§ NR 718.12 and 718.15 exemptions should be made to:

- Statewide: Paul Grittner, [Paul.Grittner@wisconsin.gov](mailto:Paul.Grittner@wisconsin.gov), (608) 266-0941
- Northeast Region: Kristen Dufresne, [Kristen.Dufresne@wisconsin.gov](mailto:Kristen.Dufresne@wisconsin.gov), (920) 662-5443
- Northern Region: Chris Saari, [Chris.Saari@wisconsin.gov](mailto:Chris.Saari@wisconsin.gov), (715) 685-2920
- South Central Region: Mike Schmoller, [Michael.Schmoller@wisconsin.gov](mailto:Michael.Schmoller@wisconsin.gov), (608) 275-3303
- Southeast Region:
  - Nancy Ryan, [Nancy.Ryan@wisconsin.gov](mailto:Nancy.Ryan@wisconsin.gov), (414) 263-8533
  - Linda Michalets, [Linda.Michalets@wisconsin.gov](mailto:Linda.Michalets@wisconsin.gov), (414) 263-8757
- West Central Region: Matt Thompson, [Matthew.Thompson@wisconsin.gov](mailto:Matthew.Thompson@wisconsin.gov), (715) 839-3750

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This document is intended solely as guidance and does not include any mandatory requirements except where requirements found in statute or administrative rule are referenced. This guidance does not establish or affect legal rights or obligations and is not finally determinative of any of the issues addressed. This guidance does not create any rights enforceable by any party in litigation with the State of Wisconsin or the Department of Natural Resources. Any regulatory decisions made by the Department of Natural Resources in any manner addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

The Wisconsin Department of Natural Resources provides equal opportunity in its employment, programs, services, and functions under an Affirmative Action Plan. If you have any questions, please write to Chief, Public Civil Rights, Office of Civil Rights, U.S. Department of the Interior, 1849 C. Street, NW, Washington, D.C. 20240.

This publication is available in alternative format (large print, Braille, etc.) upon request. Please call for more information. Note: If you need technical assistance or more information, call the Accessibility Coordinator at 608-267-7490 / TTY Access via relay – 711

## **Section 9 - Figures**

Figure 1 - Soil Management Plan Map

Figure 2 - Soil Quality Map

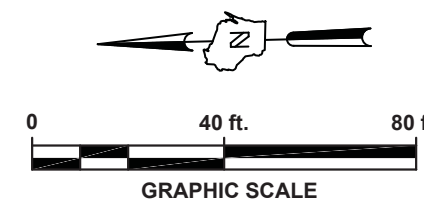


SOIL IMPACTS KEY	
	= ESTIMATED EXTENT OF PAH IMPACTS > NON-IND DC RCLs
	= ESTIMATED EXTENT OF PAH IMPACTS > GW PATHWAY RCLs
	= ESTIMATED EXTENT OF ARSENIC IMPACTS > BTV OF 8 mg/kg
	= ESTIMATED EXTENT OF BARIUM IMPACTS > GW PATHWAY RCL
	= ESTIMATED EXTENT OF CADMIUM IMPACTS > BTV OF 1 mg/kg AND GW PATHWAY RCL
	= ESTIMATED EXTENT OF LEAD IMPACTS > BTV OF 52 mg/kg AND NON-IND DC RCL
	= ESTIMATED EXTENT OF LEAD IMPACTS > BTV OF 52 mg/kg AND GW PATHWAY RCL
	= ESTIMATED EXTENT OF MERCURY IMPACTS > GW PATHWAY RCL
	= ESTIMATED EXTENT OF SELENIUM IMPACTS > GW PATHWAY RCL

SOIL MANAGEMENT KEY	
	= SOIL EXCAVATED FOR RAMP AND BASEMENTS TO BE MANAGED AND DISPOSED OFF-SITE UNDER A WDNR PRE-APPROVED NR 718 EXEMPTION (MILWAUKEE SOLVAY COKE AND GAS SITE AT 311 E. GREENFIELD AVENUE, MILWAUKEE)
	= REMAINING SOIL EXCAVATED FOR BASEMENTS AND SUBGRADE PREPARATION OUTSIDE OF BUILDING TO BE MANAGED AND DISPOSED OFF-SITE UNDER A WDNR PRE-APPROVED NR 718 EXEMPTION(S) AND/OR WDNR LICENSED LANDFILL FACILITY WITH APPROPRIATE SOIL PROFILE APPROVAL FROM LANDFILL

LEGEND	
	= PHASE II ESA GEOPROBE SOIL BORING (DEC. 2017)
	= GEOPROBE SOIL BORING FOR MAIN BUILDING AREA (FEB. 2018)
	= GEOPROBE SOIL BORING FOR ALT. 1 BASEMENT AREA (FEB. 2018)
	= GEOPROBE SOIL BORING FOR ALT. 2 BASEMENT AREA (FEB. 2018)
	= GEOPROBE SOIL BORING FOR ALT. 3 AREA (FEB. 2018)
	= GEOPROBE SOIL BORING FOR RAMP AREA (FEB. 2018)
	= HSA SOIL BORING / MONITORING WELL (FEB. 2018)

NOTES:  
1. MAP BASED ON GRAEF "LAYOUT AND MATERIALS PLAN" SHEET DATED 3/7/2018.



**SOIL MANAGEMENT PLAN MAP**  
MSOE DIERCKS COMPUTATIONAL SCIENCE HALL DEVELOPMENT  
1025 N. MILWAUKEE STREET, MILWAUKEE, WISCONSIN

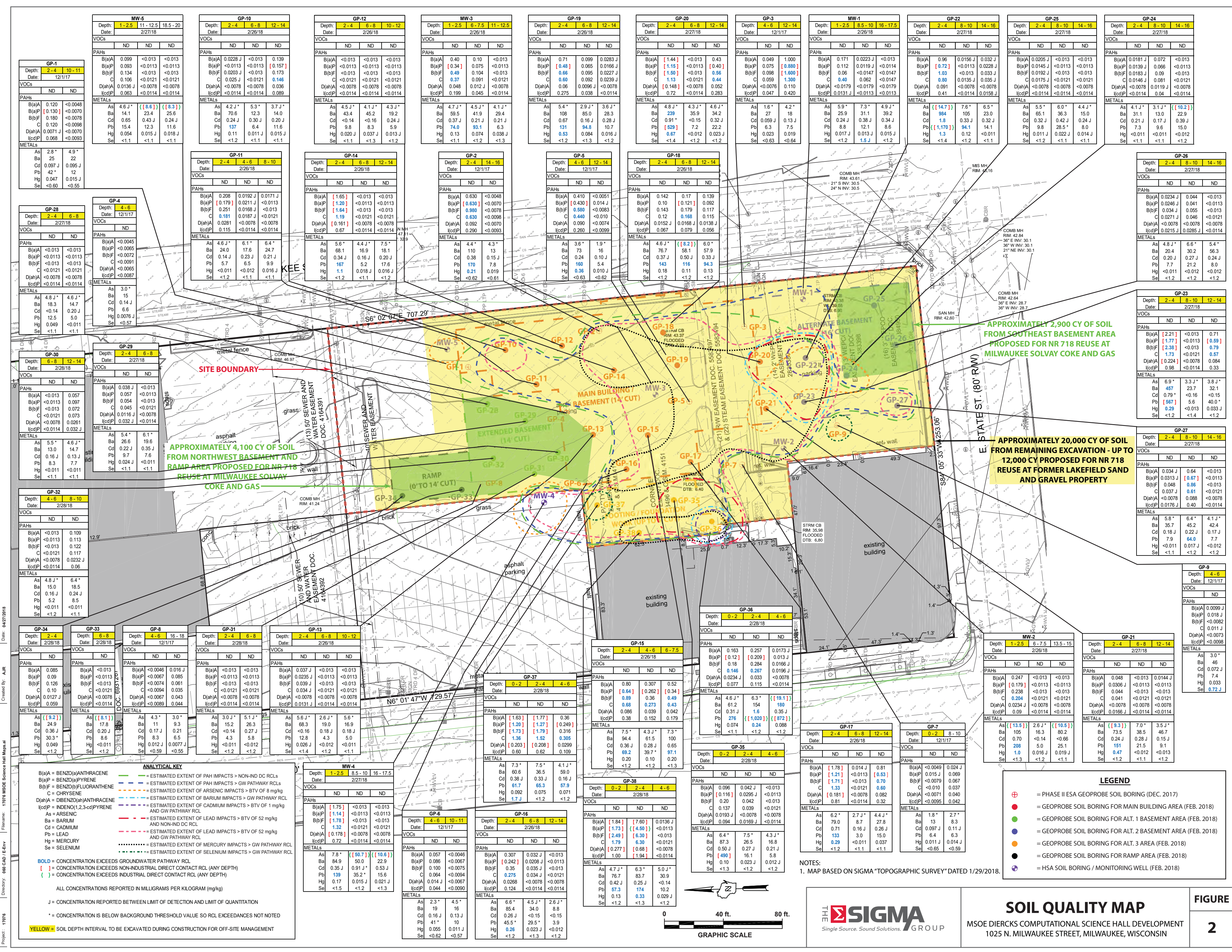


**SITE BOUNDARY**

APPROXIMATELY 4,100 CY OF SOIL FROM NORTHWEST BASEMENT AND RAMP AREA PROPOSED FOR NR 718 REUSE AT MILWAUKEE SOLVAY COKE AND GAS

APPROXIMATELY 2,900 CY OF SOIL FROM SOUTHEAST BASEMENT AREA PROPOSED FOR NR 718 REUSE AT MILWAUKEE SOLVAY COKE AND GAS

APPROXIMATELY 20,000 CY OF SOIL FROM REMAINING EXCAVATION - UP TO 12,000 CY PROPOSED FOR NR 718 REUSE AT FORMER LAKEFIELD SAND AND GRAVEL PROPERTY



APPROXIMATELY 4,100 CY OF SOIL FROM NORTHWEST BASEMENT AND RAMP AREA PROPOSED FOR NR 718 REUSE AT MILWAUKEE SOLVAY COKE AND GAS

APPROXIMATELY 2,900 CY OF SOIL FROM SOUTHEAST BASEMENT AREA PROPOSED FOR NR 718 REUSE AT MILWAUKEE SOLVAY COKE AND GAS

APPROXIMATELY 20,000 CY OF SOIL FROM REMAINING EXCAVATION - UP TO 12,000 CY PROPOSED FOR NR 718 REUSE AT FORMER LAKEFIELD SAND AND GRAVEL PROPERTY

**ANALYTICAL KEY**

B(a)A = BENZO(A)ANTHRACENE  
 B(a)P = BENZO(A)PYRENE  
 B(b)F = BENZO(B)FLUORANTHENE  
 C = CHRYSENE  
 D(ah)A = DIBENZO(A,H)ANTHRACENE  
 I(cd)P = INDENO(1,2,3-C)DIPYRENE  
 As = ARSENIC  
 Ba = BARIUM  
 Cd = CADMIUM  
 Pb = LEAD  
 Hg = MERCURY  
 Se = SELENIUM

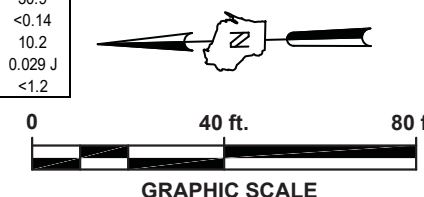
--- ESTIMATED EXTENT OF PAH IMPACTS > NON-IND DC RCLs  
 --- ESTIMATED EXTENT OF PAH IMPACTS > GW PATHWAY RCLs  
 --- ESTIMATED EXTENT OF ARSENIC IMPACTS > BTV OF 8 mg/kg  
 --- ESTIMATED EXTENT OF BARIUM IMPACTS > GW PATHWAY RCL  
 --- ESTIMATED EXTENT OF CADMIUM IMPACTS > BTV OF 1 mg/kg AND GW PATHWAY RCL  
 --- ESTIMATED EXTENT OF LEAD IMPACTS > BTV OF 52 mg/kg AND NON-IND DC RCL  
 --- ESTIMATED EXTENT OF LEAD IMPACTS > BTV OF 52 mg/kg AND GW PATHWAY RCL  
 --- ESTIMATED EXTENT OF MERCURY IMPACTS > GW PATHWAY RCL  
 --- ESTIMATED EXTENT OF SELENIUM IMPACTS > GW PATHWAY RCL

**BOLD** = CONCENTRATION EXCEEDS GROUNDWATER PATHWAY RCL  
 [ ] = CONCENTRATION EXCEEDS NON-INDUSTRIAL DIRECT CONTACT RCL (ANY DEPTH)  
 ( ) = CONCENTRATION EXCEEDS INDUSTRIAL DIRECT CONTACT RCL (ANY DEPTH)

ALL CONCENTRATIONS REPORTED IN MILLIGRAMS PER KILOGRAM (mg/kg)  
 J = CONCENTRATION REPORTED BETWEEN LIMIT OF DETECTION AND LIMIT OF QUANTITATION  
 \* = CONCENTRATION IS BELOW BACKGROUND THRESHOLD VALUE SO RCL EXCEEDANCES NOT NOTED  
**YELLOW** = SOIL DEPTH INTERVAL TO BE EXCAVATED DURING CONSTRUCTION FOR OFF-SITE MANAGEMENT

**LEGEND**

- ⊕ = PHASE II ESA GEOPROBE SOIL BORING (DEC. 2017)
- = GEOPROBE SOIL BORING FOR MAIN BUILDING AREA (FEB. 2018)
- = GEOPROBE SOIL BORING FOR ALT. 1 BASEMENT AREA (FEB. 2018)
- = GEOPROBE SOIL BORING FOR ALT. 2 BASEMENT AREA (FEB. 2018)
- = GEOPROBE SOIL BORING FOR ALT. 3 AREA (FEB. 2018)
- = GEOPROBE SOIL BORING FOR RAMP AREA (FEB. 2018)
- = HSA SOIL BORING / MONITORING WELL (FEB. 2018)



**SOIL QUALITY MAP**  
 MSOE DIERCKS COMPUTATIONAL SCIENCE HALL DEVELOPMENT  
 1025 N. MILWAUKEE STREET, MILWAUKEE, WISCONSIN

**FIGURE 2**

## **Section 10 - Additional Attachments**

Attachment 1: Table 1 - Soil Analytical Results, Table 2 - Soil Water Leaching Analytical Results,  
Table 3 - Groundwater Analytical Results

Attachment 2: Former Lakefield Sand and Gravel Data Summary

Attachment 3: Former Lakefield Sand and Gravel Site Map

Attachment 4: Soil Management Plan (for MSOE Diercks Computational Science Hall)

Attachment 5: Proposed Cap Maintenance Plan (for Former Lakefield Sand and Gravel Property)

Attachment 6: Former Lakefield Sand and Gravel Deed & Plat of Survey

Attachment 1

Table 1 - Soil Analytical Results

Table 2 - Soil Water Leaching Analytical Results

Table 3 - Groundwater Analytical Results

**Table 1**  
**Soil Analytical Results**  
**Diercks Computational Science Hall - 1025 N. Milwaukee Street, Milwaukee, Wisconsin**  
**Sigma Project No. 17076**

Soil Sample Location:	GP-1		GP-2		GP-3		GP-4	GP-5		GP-6		GP-7		GP-8		GP-9	MW-1			Groundwater Pathway RCL <sup>4</sup>	Non-Industrial Direct Contact RCL <sup>5</sup>	Industrial Direct Contact RCL <sup>6</sup>	Background Threshold Value <sup>7</sup>																				
Sample Depth (feet bgs):	2 - 4	10 - 11	2 - 4	14 - 16	4 - 6	12 - 14	4 - 6	4 - 6	12 - 14	4 - 6	10 - 11	0 - 2	8 - 10	4 - 6	16 - 18	4 - 6	1 - 2.5	8.5 - 10	16 - 17.5																								
Sample Collection Date:	12/1/17		12/1/17		12/1/17		12/1/17	12/1/17		12/1/17		12/1/17		12/1/17		12/1/17	2/26/18																										
Depth to Groundwater (feet bgs):	19.5 +/-		>17		>15		>10	>20		>11		>13		>20		>10	20.5																										
Unsaturated/Smear Zone (U) or Saturated (S):	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U																								
Photoionization Detector	ppm		2.3		1.5		2.0	1.6		1.3		0.8		1.3		0.4		1.2		1.4		1.8		0.9		1.1		1.4		1.8		1.2		0		0		0		NS	NS	NS	NS
VOCs																																											
All VOCs below detection limits	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Varies	Varies	7.07	NS		
PAHs																																											
Acenaphthene	mg/kg	<0.0063	<0.0065	0.032 J	<0.0065	0.0082 J	0.037	<0.0060	0.030 J	<0.0069	<0.0065	<0.0062	<0.0066	<0.0063	<0.0062	<0.0063	<0.0068	0.077	<0.0109	<0.0109	NS	3.590	45,200	NS																			
Acenaphthylene	mg/kg	0.010 J	<0.0047	0.060	<0.0047	<0.0052	0.0095 J	<0.0044	0.062	<0.0050	0.0088 J	<0.0046	<0.0048	<0.0046	<0.0045	<0.0047	<0.0050	0.159	0.0182 J	<0.013	NS	NS	NS	NS																			
Anthracene	mg/kg	0.024 J	<0.0060	0.170	<0.0060	0.030 J	0.280	<0.0056	0.098	<0.0064	0.012 J	<0.0058	<0.0061	<0.0058	<0.0058	<0.0059	0.0069 J	0.118	0.0133 J	<0.0113	196.9492	17,900	100,000	NS																			
Benzo(a)anthracene	mg/kg	0.120	<0.0048	0.630	<0.0048	0.049	1.000	<0.0045	0.410	<0.0051	0.057	<0.0046	<0.0049	0.024 J	<0.0046	0.016 J	0.0099 J	0.171	0.0223 J	<0.013	NS	1.14	20.8	NS																			
Benzo(a)pyrene	mg/kg	[ 0.130 ]	<0.0070	[ 0.630 ]	<0.0070	0.075	[ 0.880 ]	<0.0065	[ 0.430 ]	0.014 J	0.086	<0.0067	0.015 J	0.069	<0.0067	0.085	0.018 J	0.112	0.0119 J	<0.0114	0.47	0.115	2.11	NS																			
Benzo(b)fluoranthene	mg/kg	0.180	<0.0078	0.980	<0.0078	0.098	[ 1.600 ]	<0.0072	0.580	<0.0083	0.100	<0.0075	<0.0079	0.067	<0.0074	0.061	<0.0082	0.06	<0.0147	<0.0147	0.4793	1.15	21.1	NS																			
Benzo(ghi)perylene	mg/kg	0.063	<0.012	0.280	<0.012	0.051	0.400	<0.011	0.230	<0.012	0.049	<0.011	<0.012	0.060	<0.011	0.077	<0.012	0.157	0.0222 J	<0.0121	NS	NS	NS	NS																			
Benzo(k)fluoranthene	mg/kg	0.091	<0.011	0.380	<0.011	0.026 J	0.820	<0.0098	0.280	<0.011	0.042	<0.010	<0.011	0.020 J	<0.010	0.014 J	<0.011	0.026	<0.0078	<0.0078	NS	11.5	211	NS																			
Chrysene	mg/kg	0.120	<0.0098	0.630	<0.0098	0.059	1.300	<0.0091	0.440	<0.010	0.064	<0.0094	<0.010	0.037	<0.0094	0.035	0.011 J	0.40	0.062	<0.0147	0.1446	115	2,110	NS																			
Dibenzo(a,h)anthracene	mg/kg	0.0071 J	<0.0070	0.092	<0.0070	<0.0076	0.110	<0.0065	0.090	<0.0074	0.014 J	<0.0067	<0.0071	0.040	<0.0067	0.043	<0.0073	<0.0179	<0.0179	<0.0179	NS	0.115	2.11	NS																			
Fluoranthene	mg/kg	0.250	<0.0067	1.300	<0.0067	0.230	5.300	<0.0062	1.000	<0.0071	0.110	<0.0064	<0.0068	0.053	<0.0064	0.025 J	0.045	0.078	<0.0114	<0.0114	88.8778	2,390	30,100	NS																			
Fluorene	mg/kg	0.0068 J	<0.0051	0.040	<0.0051	0.010 J	0.059	<0.0047	0.032 J	<0.0054	<0.0050	<0.0049	<0.0051	<0.0049	<0.0049	<0.0050	<0.0053	<0.0203	<0.0203	<0.0203	14.8299	2,390	30,100	NS																			
Indeno(1,2,3-cd)pyrene	mg/kg	0.068	<0.0093	0.290	<0.0093	0.047	0.420	<0.0087	0.260	<0.0099	0.044	<0.0090	<0.0095	0.042	<0.0089	0.044	<0.0098	0.0131 J	<0.0113	<0.0113	NS	1.15	21.1	NS																			
1-Methylnaphthalene	mg/kg	<0.0086	<0.0088	0.019 J	<0.0088	<0.0096	0.012 J	<0.0082	0.016 J	<0.0093	<0.0088	<0.0084	<0.0089	<0.0085	<0.0084	<0.0086	<0.0093	<0.0151	<0.0151	<0.0151	NS	17.6	72.7	NS																			
2-Methylnaphthalene	mg/kg	<0.0065	<0.0066	0.019 J	<0.0066	<0.0072	0.014 J	<0.0061	0.020 J	<0.0070	<0.0066	<0.0064	<0.0067	<0.0064	<0.0063	<0.0065	<0.0070	<0.0159	<0.0159	<0.0159	NS	239	3,010	NS																			
Naphthalene	mg/kg	0.0061 J	<0.0055	0.028 J	<0.0055	<0.0060	0.011 J	<0.0051	0.035 J	<0.0059	<0.0055	<0.0053	<0.0056	<0.0054	<0.0053	<0.0054	<0.0058	<0.0153	<0.0153	<0.0153	0.6582	5.52	24.1	NS																			
Phenanthrene	mg/kg	0.100	<0.0050	0.610	<0.0050	0.200	2.100	<0.0047	0.480	<0.0053	0.044	<0.0048	<0.0051	0.010 J	<0.0048	0.0093 J	0.050	0.274	0.04	<0.0111	NS	NS	NS	NS																			
Pyrene	mg/kg	0.200	<0.0072	1.000	<0.0072	0.130	3.000	<0.0066	0.770	<0.0076	0.110	<0.0069	<0.0073	0.049	<0.0069	0.035	0.029 J	0.32	0.047 J	<0.0153	54.5455	1,790	22,600	NS																			
RCRA Metals																																											
Arsenic	mg/kg	2.8 *	4.9 *	4.4 *	4.3 *	1.6 *	4.2 *	3.0 *	3.6 *	1.9 *	2.3 *	4.5 *	1.8 *	2.7 *	4.3 *	3.0 *	3.0 *	5.9 *	7.3 *	4.9 J *	0.584	0.677	3	8																			
Barium	mg/kg	25	22	110	13	27	18	15	73	16	19	16	13	8.3	11	9.3	46	25.9	31.1	39.2	164.8	15,300	100,000	364																			
Cadmium	mg/kg	0.097 J	0.095 J	0.38	0.15 J	0.059 J	0.13 J	0.14 J	0.24	0.10 J	0.16 J	0.13 J	0.097 J	0.11 J	0.17 J	0.21	0.072 J	0.24 J	0.38 J	0.34 J	0.752	71.1	985	1																			
Chromium	mg/kg	8.4	12	11	9.8	12	8.4	4.8	13	8.6	7.0	14	6.7	7.4	7.9	5.9	16	13.0	11.9	15.7	360,000	NS	NS	44																			
Lead	mg/kg	42 *	12	170	7.8	6.3	7.5	6.6	160	5.4	41 *	10	6.4	6.3	8.3	6.5	7.4	8.8	12.1	8.6	27	400	800	52																			
Mercury	mg/kg	0.047	0.015 J	0.21	0.019	0.023	0.019	0.0076 J	0.36	0.010 J	0.055	0.011 J	0.011 J	0.014 J	0.012 J	0.0077 J	0.033	0.017 J	0.013 J	0.015 J	0.208	3.13	3.13	NS																			
Selenium	mg/kg	<0.60	<0.55	<0.62	<0.61	<0.63	<0.64	<0.57	<0.63	<0.62	<0.62	<0.57	<0.65	<0.59	<0.59	<0.55	0.72 J	<1.2	1.5 J	<1.2	0.52	391	5,840	NS																			
Silver	mg/kg	<0.13	<0.12	<0.14	<0.13	<0.14	<0.14	<0.13	<0.14	<0.14	<0.14	<0.13	<0.14	<0.13	<0.13	<0.12	<0.15	<0.37	0.42 J	<0.36	0.8491	391	5,840	NS																			
PCBs																																											
PCB-1016	mg/kg	<0.0063	NA	<0.0066	NA	<0.0066	NA	<0.0060	<0.0067	NA	<0.0063	NA	<0.0065	NA	<0.0062	NA	<0.0069	NA	NA	NA	0.0094	4.11	28	NS																			
PCB-1221	mg/kg	<0.0078	NA	<0.0083	NA	<0.0082	NA	<0.0074	<0.0083	NA	<0.0078	NA	<0.0081	NA	<0.0077	NA	<0.0086	NA	NA	NA	0.0094	0.213	0.883	NS																			
PCB-1232	mg/kg	<0.0077	NA	<0.0082	NA	<0.0082	NA	<0.0073	<0.0082	NA	<0.0077	NA	<0.0080	NA	<0.0077	NA	<0.0085	NA	NA	NA	0.0094	0.19	0.792	NS																			
PCB-1242	mg/kg	<0.0058	NA	<0.0062	NA	<0.0062	NA	<0.0055	<0.0062	NA	<0.0058	NA	<0.0060	NA	<0.0058	NA	<0.0064	NA	NA	NA	0.0094	0.235	0.972	NS																			
PCB-1248	mg/kg	<0.0070	NA	<0.0074	NA	<0.0074	NA	<0.0066	<0.0074	NA	<0.0070	NA	<0.0072	NA	<0.0069	NA	<0.0077	NA	NA	NA	0.0094	0.236	0.975	NS																			
PCB-1254	mg/kg	<0.0038	NA	<0.0041	NA	<0.0040	NA	<0.0036	<0.0041	NA	<0.0038	NA	<0.0040	NA	<0.0038	NA	<0.0042	NA	NA	NA	0.0094	0.239	0.988	NS																			
PCB-1260	mg/kg	<0.0087	NA	<0.0092	NA	<0.0092	NA	<0.0083	<0.0093	NA	<0.0087	NA	<0.0090	NA	<0.0086	NA	<0.0096	NA	NA	NA	0.0094	0.243	1	NS																			
Cumulative DC RCL Exceeded (Y/N)?	YES	NO	YES	NO	NO	YES	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	---	---	---	---																			

Notes:

- Unsaturated/smear zone versus saturated soil conditions based on soil moisture conditions observed during drilling.
- Analytical units: mg/kg = milligrams per kilogram (equivalent to parts per million, ppm)
- NA = not analyzed
- Groundwater Pathway RCL = Residual Contaminant Level for protection of groundwater (dilution factor of 2) as presented on the WDNr's RCL Spreadsheet (dated March 2017) referenced in WDNr guidance document PUB-RR-890 "Soil Residual Contaminant Level Determinations Using the US EPA Regional Screening Level Web Calculator", dated June 2014
- Non-Industrial Direct Contact RCL = Residual Contaminant Level for protection of direct contact at a non-industrial property as presented on the WDNr's RCL Spreadsheet (dated March 2017) with default input parameters as referenced in WDNr guidance document PUB-RR-890 "Soil Residual Contaminant Level Determinations Using the US EPA Regional Screening Level Web Calculator", dated June 2014
- Industrial Direct Contact RCL = Residual Contaminant Level for protection of direct contact at an industrial property as presented on the WDNr's RCL Spreadsheet (dated March 2017) with default input parameters as referenced in WDNr guidance document PUB-RR-890 "Soil Residual Contaminant Level Determinations Using the US EPA Regional Screening Level Web Calculator", dated June 2014
- Background Threshold Value = Non-outlier trace element maximum levels in Wisconsin surface soils from USGS report "Distribution and Variation of Arsenic in Wisconsin Surface Soils, With Data on Other Trace Elements" (revised February 2013).
- NS = no standard established
- Laboratory flags:
  - J = Analyte detected between Limit of Detection and Limit of Quantitation
  - BOLD** = Concentration exceeds Groundwater Pathway RCL
  - [ ] = Concentration exceeds Non-Industrial Direct Contact RCL (any depth)
  - { } = Concentration exceeds Industrial Direct Contact RCL (any depth)
  - \*
- Exceedances:
  - Yellow = Soil to be excavated during site redevelopment
  - Purple = Soil samples analyzed for "water leaching" by ASTM 3987
  - Green = Soil destined for Solvay Coke project site under NR 718 exemption approval
  - Red = Soil proposed for Lakefield Sand & Gravel property under NR 718 exemption approval

**Table 1**  
**Soil Analytical Results**  
 Diercks Computational Science Hall - 1025 N. Milwaukee Street, Milwaukee, Wisconsin  
 Sigma Project No. 17076

Soil Sample Location:	MW-2			MW-3			MW-4			MW-5			GP-10			GP-11			GP-12			Groundwater Pathway RCL <sup>4</sup>	Non-Industrial Direct Contact RCL <sup>5</sup>	Industrial Direct Contact RCL <sup>6</sup>	Background Threshold Value <sup>7</sup>			
Sample Depth (feet bgs):	1 - 2.5	6 - 7.5	13.5 - 15	1 - 2.5	6 - 7.5	11 - 12.5	1 - 2.5	8.5 - 10	16 - 17.5	1 - 2.5	11 - 12.5	18.5 - 20	2 - 4	6 - 8	12 - 14	2 - 4	4 - 6	8 - 10	2 - 4	6 - 8	10 - 12							
Sample Collection Date:	2/26/18			2/26/18			2/27/18			2/27/18			2/26/18			2/26/18			2/26/18									
Depth to Groundwater (feet bgs):	18.8			16.8			16.1			19.7			19 +/-			18 +/-			18.5 +/-									
Unsaturated/Smear Zone (U) or Saturated (S):	U	U	U	U	U	U	U	U	S	U	U	U	U	U	U	U	U	U	U	U	U							
Photoionization Detector	ppm			ppm			ppm			ppm			ppm			ppm			ppm			NS	NS	NS	NS			
VOCS	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			Varies	Varies	7.07	NS			
All VOCS below detection limits	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
PAHs	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg									
Acenaphthene	0.0187 J	<0.0151	<0.0151	0.043 J	<0.0151	<0.0151	0.058	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	NS	3,590	45,200	NS
Acenaphthylene	0.0295 J	<0.0159	<0.0159	0.032 J	<0.0159	<0.0159	0.0164 J	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	NS	NS	NS	NS
Anthracene	0.108	<0.0109	<0.0109	0.136	0.037	<0.0109	0.41	<0.0109	<0.0109	0.0181 J	<0.0109	<0.0109	<0.0109	<0.0109	0.024 J	0.056	<0.0109	<0.0109	<0.0109	<0.0109	<0.0109	<0.0109	<0.0109	<0.0109	196.9492	17,900	100,000	NS
Benzo(a)anthracene	0.247	<0.013	<0.013	0.40	0.10	<0.013	[ 1.75 ]	<0.013	<0.013	0.099	<0.013	<0.013	0.0228 J	<0.013	0.139	0.208	0.0192 J	0.0171 J	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	NS	1.14	20.8	NS
Benzo(a)pyrene	[ 0.179 ]	<0.0113	<0.0113	[ 0.34 ]	0.075	<0.0113	[ 1.14 ]	<0.0113	<0.0113	0.093	<0.0113	<0.0113	<0.0113	<0.0113	[ 0.157 ]	[ 0.179 ]	0.0211 J	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	0.47	0.115	2.11	NS
Benzo(b)fluoranthene	0.238	<0.013	<0.013	0.49	0.104	<0.013	[ 1.78 ]	<0.013	<0.013	0.134	<0.013	<0.013	0.0203 J	<0.013	0.173	0.251	0.0168 J	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	0.4793	1.15	21.1	NS
Benzo(ghi)perylene	0.105	<0.0114	<0.0114	0.262	0.051	<0.0114	0.84	<0.0114	<0.0114	0.085	<0.0114	<0.0114	<0.0114	<0.0114	0.211	0.139	0.036 J	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	NS	NS	NS	NS
Benzo(k)fluoranthene	0.095	<0.0147	<0.0147	0.181	0.051	<0.0147	0.57	<0.0147	<0.0147	0.051	<0.0147	<0.0147	<0.0147	<0.0147	0.072	0.092	<0.0147	<0.0147	<0.0147	<0.0147	<0.0147	<0.0147	<0.0147	<0.0147	NS	11.5	211	NS
Chrysene	0.204	<0.0121	<0.0121	0.37	0.091	<0.0121	1.32	<0.0121	<0.0121	0.106	<0.0121	<0.0121	0.025 J	<0.0121	0.146	0.181	0.0187 J	<0.0121	<0.0121	<0.0121	<0.0121	<0.0121	<0.0121	<0.0121	0.1446	115	2,110	NS
Dibenz(a,h)anthracene	0.0234 J	<0.0078	<0.0078	0.048	0.012 J	<0.0078	[ 0.178 ]	<0.0078	<0.0078	0.0136 J	<0.0078	<0.0078	<0.0078	<0.0078	0.036	0.0281	<0.0078	<0.0078	<0.0078	<0.0078	<0.0078	<0.0078	<0.0078	<0.0078	NS	0.115	2.11	NS
Fluoranthene	0.46	<0.0147	<0.0147	0.87	0.192	<0.0147	3.50	<0.0147	<0.0147	0.224	<0.0147	<0.0147	0.054	<0.0147	0.238	0.38	0.0271 J	0.025 J	<0.0147	<0.0147	<0.0147	<0.0147	<0.0147	<0.0147	88.8778	2,390	30,100	NS
Fluorene	0.0264 J	<0.0179	<0.0179	0.038 J	<0.0179	<0.0179	0.076	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	14.8299	2,390	30,100	NS
Indeno(1,2,3-cd)pyrene	0.09	<0.0114	<0.0114	0.199	0.045	<0.0114	0.72	<0.0114	<0.0114	0.063	<0.0114	<0.0114	<0.0114	<0.0114	0.089	0.115	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	NS	1.15	21.1	NS
1-Methylnaphthalene	<0.0203	<0.0203	<0.0203	0.0204 J	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	NS	17.6	72.7	NS
2-Methylnaphthalene	<0.0113	<0.0113	<0.0113	0.0125 J	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	NS	239	3,010	NS
Naphthalene	<0.0153	<0.0153	<0.0153	0.0167 J	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	0.6582	5.52	24.1	NS
Phenanthrene	0.301	<0.0111	<0.0111	0.53	0.112	<0.0111	1.14	<0.0111	<0.0111	0.067	<0.0111	<0.0111	0.039	<0.0111	0.091	0.158	0.0231 J	0.015 J	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	NS	NS	NS	NS
Pyrene	0.39	<0.0153	<0.0153	0.72	0.171	<0.0153	2.87	<0.0153	<0.0153	0.191	<0.0153	<0.0153	0.048 J	<0.0153	0.231	0.33	0.0286 J	0.0191 J	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	54.5455	1,790	22,600	NS
RCRA Metals	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg									
Arsenic	[ 13.5 ]	2.6 J *	[ 10.5 ]	4.7 J *	4.5 J *	4.1 J *	7.8 *	[ 50.7 ]	[ 10.6 ]	4.6 J *	[ 8.6 ]	[ 8.3 ]	4.2 J *	5.3 *	3.7 J *	4.6 J *	6.1 *	6.4 *	4.5 J *	4.1 J *	4.3 J *	0.584	0.677	3	8			
Barium	105	16.3	80.2	59.5	41.9	29.4	84.9	50.0	22.9	14.1	23.4	25.6	70.6	12.3	14.0	24.0	17.6	24.7	43.4	45.2	19.2	164.8	15,300	100,000	364			
Cadmium	0.70	<0.14	<0.66	0.37 J	0.21 J	0.21 J	0.35 J	0.91 J *	0.53 J	0.65	0.43 J	0.24 J	0.24 J	0.30 J	0.20 J	0.14 J	0.23 J	0.21 J	<0.14	<0.16	0.24 J	0.752	71.1	985	1			
Chromium	16.8	9.6	13.4	25.6	19.0	13.9	21.9	18.5	26.7	6.0	10.9	15.5	13.7	7.4	6.6	11.0	9.2	11.6	20.9	22.4	10.5	360,000	NS	NS	44			
Lead	208	5.0	25.1	74.0	93.1	6.3	139	35.2 *	15.6	15.4	12.3	11.6	137	6.4	11.6	5.7	6.5	9.9	9.8	8.3	5.9	27	400	800	52			
Mercury	1.0	0.016 J	0.019 J	0.13	0.074	0.038 J	0.17	0.015 J	0.021 J	0.054	0.015 J	0.018 J	0.11	0.011 J	0.015 J	<0.011	<0.012	0.016 J	0.020 J	0.037 J	0.013 J	0.208	3.13	3.13	NS			
Selenium	<1.3	<1.2	<1.1	<1.1	<1.2	<1.3	<1.5	<1.2	<1.3	<1.1	<1.1	<1.1	<1.2	<1.1	<1.1	<1.2	<1.1	<1.1	<1.1	<1.3	<1.2	0.52	391	5,840	NS			
Silver	<0.41	<0.37	0.73 J	<0.34	<0.38	<0.40	<0.45	0.83 J	0.42 J	<0.34	0.36 J	0.41 J	<0.37	<0.35	<0.34	<0.37	<0.35	<0.36	<0.36	<0.40	<0.36	0.8491	391	5,840	NS			
PCBs	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg									
PCB-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0094	4.11	28	NS			
PCB-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0094	0.213	0.883	NS			
PCB-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0094	0.19	0.792	NS			
PCB-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0094	0.235	0.972	NS			
PCB-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0094	0.236	0.975	NS			
PCB-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0094	0.239	0.988	NS			
PCB-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0094	0.243	1	NS			
Cumulative DC RCL Exceeded (Y/N)?	YES	NO	YES	YES	NO	NO	YES	YES	YES	NO	YES	YES	NO	NO	YES	YES	NO	NO	NO	NO	NO	---	---	---	---			

Notes:

1. Unsaturated/smear zone versus saturated soil conditions based on soil moisture conditions observed during drilling.
2. Analytical units: mg/kg = milligrams per kilogram (equivalent to parts per million, ppm)
3. NA = not analyzed
4. Groundwater Pathway RCL = Residual Contaminant Level for protection of groundwater (dilution factor of 2) as presented on the WDNR's RCL Spreadsheet (dated March 2017) referenced in WDNR guidance document PUB-RR-890 "Soil Residual Contaminant Level Determinations Using the US EPA Regional Screening Level Web Calculator", dated June 2014
5. Non-Industrial Direct Contact RCL = Residual Contaminant Level for protection of direct contact at a non-industrial property as presented on the WDNR's RCL Spreadsheet (dated March 2017) with default input parameters as referenced in WDNR guidance document PUB-RR-890 "Soil Residual Contaminant Level Determinations Using the US EPA Regional Screening Level Web Calculator", dated June 2014
6. Industrial Direct Contact RCL = Residual Contaminant Level for protection of direct contact at an industrial property as presented on the WDNR's RCL Spreadsheet (dated March 2017) with default input parameters as referenced in WDNR guidance document PUB-RR-890 "Soil Residual Contaminant Level Determinations Using the US EPA Regional Screening Level Web Calculator", dated June 2014
7. Background Threshold Value = Non-outlier trace element maximum levels in Wisconsin surface soils from USGS report "Distribution and Variation of Arsenic in Wisconsin Surface Soils, With Data on Other Trace Elements" (revised February 2013).
8. NS = no standard established
9. Laboratory flags: J = Analyte detected between Limit of Detection and Limit of Quantitation
10. Exceedances:
  - BOLD** = Concentration exceeds Groundwater Pathway RCL
  - [ ] = Concentration exceeds Non-Industrial Direct Contact RCL (any depth)
  - { } = Concentration exceeds Industrial Direct Contact RCL (any depth)
  - \*
  - = Concentration is below Background Threshold Value so RCL exceedances are not noted
11. Highlights:
  - Yellow** = Soil to be excavated during site redevelopment
  - Purple** = Soil samples analyzed for "water leaching" by ASTM

**Table 1  
Soil Analytical Results  
Diercks Computational Science Hall - 1025 N. Milwaukee Street, Milwaukee, Wisconsin  
Sigma Project No. 17076**

Soil Sample Location:	GP-13			GP-14			GP-15			GP-16			GP-17			GP-18			GP-19			GP-20			Groundwater Pathway RCL <sup>4</sup>	Non-Industrial Direct Contact RCL <sup>5</sup>	Industrial Direct Contact RCL <sup>6</sup>	Background Threshold Value <sup>7</sup>		
	2 - 4	6 - 8	10 - 12	2 - 4	6 - 8	12 - 14	2 - 4	4 - 6	6 - 7.5	2 - 4	6 - 8	12 - 14	2 - 4	6 - 8	12 - 14	2 - 4	6 - 8	12 - 14	2 - 4	6 - 8	12 - 14	2 - 4	6 - 8	12 - 14						
Sample Depth (feet bgs):	2/26/18			2/26/18			2/26/18			2/26/18			2/26/18			2/26/18			2/26/18			2/27/18								
Sample Collection Date:	2/26/18			2/26/18			2/26/18			2/26/18			2/26/18			2/26/18			2/26/18			2/27/18								
Depth to Groundwater (feet bgs):	17 +/-			17.5 +/-			17 +/-			17 +/-			17 +/-			17 +/-			17 +/-			19 +/-								
Unsaturated/Smear Zone (U) or Saturated (S):	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U				
Photoionization Detector	ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
<b>VOCs</b>																														
All VOCs below detection limits	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Varies	Varies	7.07	NS
<b>PAHs</b>																														
Acenaphthene	mg/kg	<0.0151	<0.0151	<0.0151	0.145	<0.0151	<0.0151	0.088	0.0217 J	0.079	0.027 J	<0.0151	<0.0151	0.045 J	<0.0151	0.102	<0.0151	<0.0151	<0.0151	0.035 J	<0.0151	<0.0151	<0.0151	<0.0151	0.0181 J	NS	3,590	45,200	NS	
Acenaphthylene	mg/kg	<0.0159	<0.0159	<0.0159	0.071	<0.0159	<0.0159	0.039 J	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	0.075	<0.0159	0.0269 J	<0.0159	0.034 J	<0.0159	0.054	0.0164 J	<0.0159	<0.0159	<0.0159	<0.0159	NS	NS	NS	NS	
Anthracene	mg/kg	<0.0109	<0.0109	<0.0109	0.63	<0.0109	<0.0109	0.32	0.102	0.256	0.113	0.0132 J	<0.0109	0.35	<0.0109	0.34	0.0295 J	0.029 J	0.037	0.236	0.033 J	<0.0109	0.194	<0.0109	0.131	196.9492	17,900	100,000	NS	
Benzo(a)anthracene	mg/kg	0.037 J	<0.013	<0.013	1.65	<0.013	<0.013	0.80	0.307	0.52	0.307	0.032 J	<0.013	1.78	0.014 J	0.81	0.142	0.17	0.139	0.71	0.099	0.0283 J	1.44	<0.013	0.43	NS	1.14	20.8	NS	
Benzo(a)pyrene	mg/kg	0.0235 J	<0.0113	<0.0113	1.20	<0.0113	<0.0113	0.64	0.262	0.34	0.242	0.0208 J	<0.0113	1.21	<0.0113	0.53	0.10	0.121	0.092	0.48	0.065	0.0166 J	1.15	<0.0113	0.40	0.47	0.115	2.11	NS	
Benzo(b)fluoranthene	mg/kg	0.039 J	<0.013	<0.013	1.64	<0.013	<0.013	0.89	0.36	0.49	0.35	0.035 J	<0.013	1.71	<0.013	0.70	0.143	0.179	0.117	0.66	0.095	0.0227 J	1.50	<0.013	0.56	0.4793	1.15	21.1	NS	
Benzo(ghi)perylene	mg/kg	0.0182 J	<0.0114	<0.0114	0.80	<0.0114	<0.0114	0.45	0.201	0.197	0.145	<0.0114	<0.0114	0.98	<0.0114	0.44	0.087	0.077	0.089	0.297	0.04	0.0193 J	0.93	<0.0114	0.41	NS	NS	NS	NS	
Benzo(k)fluoranthene	mg/kg	0.0184 J	<0.0147	<0.0147	0.57	<0.0147	<0.0147	0.304	0.125	0.187	0.109	0.0179 J	<0.0147	0.57	<0.0147	0.244	0.053	0.066	0.049	0.223	0.04 J	<0.0147	0.53	<0.0147	0.209	NS	11.5	211	NS	
Chrysene	mg/kg	0.034 J	<0.0121	<0.0121	1.19	<0.0121	<0.0121	0.68	0.273	0.43	0.275	0.034 J	<0.0121	1.33	<0.0121	0.60	0.12	0.168	0.115	0.60	0.092	0.0239 J	1.13	<0.0121	0.44	0.1446	115	2,110	NS	
Dibenzo(a,h)anthracene	mg/kg	<0.0078	<0.0078	<0.0078	0.161	<0.0078	<0.0078	0.086	0.039	0.042	0.0268	<0.0078	<0.0078	0.181	<0.0078	0.082	0.0152 J	0.0168 J	0.0138 J	0.06	0.0096 J	<0.0078	0.148	<0.0078	0.052	NS	0.115	2.11	NS	
Fluoranthene	mg/kg	0.065	<0.0147	<0.0147	3.20	<0.0147	<0.0147	1.62	0.65	1.23	0.70	0.066	<0.0147	3.20	<0.0147	1.50	0.246	0.36	0.258	1.49	0.187	0.047	2.32	<0.0147	1.12	88.8778	2,390	30,100	NS	
Fluorene	mg/kg	<0.0179	<0.0179	<0.0179	0.15	<0.0179	<0.0179	0.082	0.0224 J	0.079	0.026 J	<0.0179	<0.0179	0.063	<0.0179	0.084	<0.0179	<0.0179	<0.0179	0.04 J	<0.0179	<0.0179	<0.0179	<0.0179	0.0234 J	14.8299	2,390	30,100	NS	
Indeno(1,2,3-cd)pyrene	mg/kg	0.0131 J	<0.0114	<0.0114	0.67	<0.0114	<0.0114	0.38	0.152	0.179	0.124	<0.0114	<0.0114	0.81	<0.0114	0.32	0.067	0.079	0.056	0.275	0.038	<0.0114	0.72	<0.0114	0.283	NS	1.15	21.1	NS	
1-Methylnaphthalene	mg/kg	<0.0203	<0.0203	<0.0203	0.049 J	<0.0203	<0.0203	0.0294 J	<0.0203	0.0255 J	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	0.033 J	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	NS	17.6	72.7	NS	
2-Methylnaphthalene	mg/kg	<0.0113	<0.0113	<0.0113	0.038	<0.0113	<0.0113	0.0163 J	<0.0113	0.0175 J	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	0.0206 J	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	NS	239	3,010	NS	
Naphthalene	mg/kg	<0.0153	<0.0153	<0.0153	0.116	<0.0153	<0.0153	0.042 J	<0.0153	0.037 J	<0.0153	<0.0153	<0.0153	0.0153 J	<0.0153	0.039 J	<0.0153	<0.0153	<0.0153	0.0172 J	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	0.6582	5.52	24.1	NS	
Phenanthrene	mg/kg	0.0279 J	<0.0111	<0.0111	1.76	<0.0111	<0.0111	0.94	0.304	1.00	0.35	0.037	<0.0111	1.17	<0.0111	0.95	0.088	0.119	0.104	0.75	0.092	0.0251 J	0.41	<0.0111	0.54	NS	NS	NS	NS	
Pyrene	mg/kg	0.056	<0.0153	<0.0153	2.73	<0.0153	<0.0153	1.40	0.55	0.98	0.62	0.057	<0.0153	2.76	<0.0153	1.24	0.219	0.30	0.231	1.25	0.165	0.041 J	2.00	<0.0153	0.86	54.5455	1,790	22,600	NS	
<b>RCRA Metals</b>																														
Arsenic	mg/kg	5.6 J *	2.6 J *	5.6 *	5.6 *	4.4 J *	7.5 *	7.5 *	4.3 J *	7.3 *	6.6 *	4.5 J *	2.6 J *	6.2 *	2.7 J *	4.4 J *	4.6 J *	{ 8.2 }	6.0 *	5.4 *	2.9 J *	3.6 J *	4.8 J *	4.3 J *	4.6 J *	0.584	0.677	3	8	
Barium	mg/kg	68.3	19.0	16.9	68.1	16.9	18.1	94.4	61.5	100	85.4	34.0	8.8	79.0	8.7	27.8	76.7	58.1	57.9	108	85.0	28.3	239	35.9	34.2	164.8	15,300	100,000	364	
Cadmium	mg/kg	<0.16	0.18 J	0.18 J	0.34 J	0.16 J	0.20 J	0.36 J	0.28 J	0.65	0.26 J	<0.15	<0.15	0.71	0.16 J	0.26 J	0.37 J	0.50 J	0.33 J	0.67	0.16 J	0.28 J	0.91 *	<0.15	0.32 J	0.752	71.1	985	1	
Chromium	mg/kg	36.6	8.6	8.4	11.4	8.4	9.9	8.6	13.0	13.2	19.3	12.6	6.7	12.2	4.6	9.2	12.1	14.4	13.9	10.4	13.3	12.0	14.9	15.2	16.5	360,000	NS	NS	44	
Lead	mg/kg	12.8	4.3	5.0	167	5.2	17.6	69.2	39.7 *	97.1	45.5 *	29.5 *	3.9	133	3.0	15.0	143	116	94.3	131	94.8	10.7	529	7.2	22.2	27	400	800	52	
Mercury	mg/kg	0.026 J	<0.012	<0.011	1.1	0.018 J	0.016 J	0.20	0.10	0.20	0.26	0.023 J	<0.012	0.29	<0.011	0.037	0.18	0.11	0.13	0.53	0.084	0.016 J	0.67	<0.012	0.023 J	0.208	3.13	3.13	NS	
Selenium	mg/kg	<1.4	<1.2	<1.1	<1.2	<1.1	<1.2	<1.2	<1.2	<1.3	<1.2	<1.3	<1.2	<1.2	<1.1	<1.1	<1.2	<1.2	<1.2	<1.2	<1.3	<1.2	<1.4	<1.2	<1.2	<1.2	0.52	391	5,840	NS
Silver	mg/kg	<0.42	<0.39	<0.34	0.42 J	<0.36	<0.36	0.41 J	0.78 J	0.54 J	<0.38	<0.39	<0.38	<0.37	<0.34	<0.33	<0.39	<0.38	0.56 J	0.42 J	<0.39	<0.36	0.48 J	<0.38	<0.36	0.8491	391	5,840	NS	
<b>PCBs</b>																														
PCB-1016	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0094	4.11	28	NS
PCB-1221	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0094	0.213	0.883	NS
PCB-1232	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0094	0.19	0.792	NS
PCB-1242	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0094	0.235	0.972	NS
PCB-1248	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0094	0.236	0.975	NS
PCB-1254	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0094	0.239	0.988	NS
PCB-1260	mg/kg	NA	NA	NA	NA</																									





**Table 1**  
**Soil Analytical Results**  
 Diercks Computational Science Hall - 1025 N. Milwaukee Street, Milwaukee, Wisconsin  
 Sigma Project No. 17076

Soil Sample Location:	GP-29		GP-30		GP-31		GP-32		GP-33	GP-34	GP-35			GP-36			GP-37			GP-38			Groundwater Pathway RCL <sup>4</sup>	Non-Industrial Direct Contact RCL <sup>5</sup>	Industrial Direct Contact RCL <sup>6</sup>	Background Threshold Value <sup>7</sup>			
Sample Depth (feet bgs):	2-4	6-8	6-8	12-14	2-4	6-8	4-6	8-10	6-8	2-4	0-2	2-4	4-6	0-2	2-4	4-6	0-2	2-4	4-6	0-2	2-4	4-6							
Sample Collection Date:	2/27/18		2/28/18		2/28/18		2/28/18		2/28/18	2/28/18	2/28/18			2/28/18			2/28/18			2/28/18									
Depth to Groundwater (feet bgs):	18 +/-		17 +/-		17 +/-		17.5 +/-		17 +/-	17 +/-	18 +/-			18 +/-			17 +/-			17.5 +/-									
Unsaturated/Smear Zone (U) or Saturated (S):	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U							
Photoionization Detector	ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
<b>VOCs</b>																													
All VOCs below detection limits	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
<b>PAHs</b>																													
Acenaphthene	mg/kg	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	0.0165 J	0.0289 J	<0.0151	0.058	0.061	0.072	0.07	0.66	<0.0151	NS	3,590	45,200	NS
Acenaphthylene	mg/kg	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	0.04 J	0.0262 J	0.0185 J	0.0275 J	<0.0795	<0.0159	NS	NS	NS	NS
Anthracene	mg/kg	<0.0109	<0.0109	<0.0109	0.0136 J	<0.0109	<0.0109	<0.0109	0.045	<0.0109	0.0175 J	0.0139 J	0.0149 J	<0.0109	0.073	0.144	<0.0109	0.45	0.63	0.239	0.43	5.00	<0.0109	196.9492	17,900	100,000	NS		
Benzo(a)anthracene	mg/kg	0.038 J	<0.013	<0.013	0.057	<0.013	<0.013	<0.013	0.109	<0.013	0.085	0.096	0.042 J	<0.013	0.163	0.257	0.0173 J	[1.63]	[1.77]	0.36	[1.84]	[7.60]	0.0136 J	NS	1.14	20.8	NS		
Benzo(a)pyrene	mg/kg	0.057	<0.0113	<0.0113	0.097	<0.0113	<0.0113	<0.0113	0.113	<0.0113	0.09	[0.116]	0.0295 J	<0.0113	[0.12]	[0.209]	0.013 J	[1.20]	[1.27]	[0.249]	[1.73]	[4.50]	<0.0113	0.47	0.115	2.11	NS		
Benzo(b)fluoranthene	mg/kg	0.054	<0.013	<0.013	0.072	<0.013	<0.013	<0.013	0.122	<0.013	0.126	0.20	0.042	<0.013	0.18	0.284	0.0166 J	[1.73]	[1.79]	0.316	[2.49]	[6.30]	<0.013	0.4793	1.15	21.1	NS		
Benzo(ghi)perylene	mg/kg	0.069	<0.0114	<0.0114	0.124	<0.0114	<0.0114	<0.0114	0.123	<0.0114	0.074	0.123	0.0196 J	<0.0114	0.096	0.14	0.0132 J	0.64	0.66	0.108	1.16	1.95	<0.0114	NS	NS	NS	NS		
Benzo(k)fluoranthene	mg/kg	0.0174 J	<0.0147	<0.0147	0.0186 J	<0.0147	<0.0147	<0.0147	0.045 J	<0.0147	0.045 J	0.062	0.0159 J	<0.0147	0.063	0.099	<0.0147	0.54	0.55	0.125	0.79	2.04	<0.0147	NS	11.5	211	NS		
Chrysene	mg/kg	0.045	<0.0121	<0.0121	0.073	<0.0121	<0.0121	<0.0121	0.117	<0.0121	0.10	0.137	0.039	<0.0121	0.146	0.267	0.0196 J	1.36	1.52	0.305	1.79	6.30	<0.0121	0.1446	115	2,110	NS		
Dibenzo(a,h)anthracene	mg/kg	0.0116 J	<0.0078	<0.0078	0.0261	<0.0078	<0.0078	<0.0078	0.0232 J	<0.0078	0.0127 J	0.0193 J	<0.0078	<0.0078	0.0234 J	0.033	<0.0078	[0.203]	[0.208]	0.0299	[0.277]	[0.68]	<0.0078	NS	0.115	2.11	NS		
Fluoranthene	mg/kg	0.056	<0.0147	<0.0147	0.07	<0.0147	<0.0147	<0.0147	0.241	<0.0147	0.19	0.26	0.072	0.0153 J	0.33	0.57	0.0218 J	2.64	2.98	0.70	3.70	14.4	<0.0147	88.8778	2,390	30,100	NS		
Fluorene	mg/kg	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	0.033 J	<0.0179	0.061	0.083	0.053 J	0.066	1.30	<0.0179	14.8299	2,390	30,100	NS		
Indeno(1,2,3-cd)pyrene	mg/kg	0.032 J	<0.0114	<0.0114	0.032 J	<0.0114	<0.0114	<0.0114	0.06	<0.0114	0.059	0.094	0.0169 J	<0.0114	0.077	0.115	<0.0114	0.60	0.62	0.109	1.00	[1.94]	<0.0114	NS	1.15	21.1	NS		
1-Methylnaphthalene	mg/kg	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	0.0227 J	<0.0203	<0.1015	<0.0203	NS	17.6	72.7	NS		
2-Methylnaphthalene	mg/kg	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	0.0121 J	<0.0113	0.0141 J	<0.0113	<0.0565	<0.0113	NS	239	3,010	NS		
Naphthalene	mg/kg	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	0.0256 J	<0.0153	<0.0765	<0.0153	0.6582	5.52	24.1	NS		
Phenanthrene	mg/kg	0.0243 J	<0.0111	<0.0111	0.047	<0.0111	<0.0111	<0.0111	0.113	<0.0111	0.062	0.078	0.06	0.0177 J	0.241	0.50	0.032 J	0.93	1.09	0.62	1.21	10.0	<0.0111	NS	NS	NS	NS		
Pyrene	mg/kg	0.062	<0.0153	<0.0153	0.094	<0.0153	<0.0153	<0.0153	0.229	<0.0153	0.165	0.219	0.072	0.0167 J	0.276	0.46	0.0214 J	2.21	2.49	0.58	3.04	11.1	<0.0153	54.5455	1,790	22,600	NS		
<b>RCRA Metals</b>																													
Arsenic	mg/kg	5.4 *	6.1 *	5.5 *	4.6 J *	3.0 J *	5.1 J *	4.8 J *	6.4 *	[[8.1]]	[[9.2]]	6.4 *	7.5 *	4.3 J *	4.6 J *	6.3 *	[[19.1]]	7.3 *	7.5 *	4.1 J *	4.7 J *	6.3 *	5.0 J *	0.584	0.677	3	8		
Barium	mg/kg	26.6	19.6	13.0	14.7	15.2	26.3	15.0	18.5	17.8	24.9	87.3	26.5	16.8	61.2	154	180	60.6	36.5	59.0	76.7	83.7	30.9	164.8	15,300	100,000	364		
Cadmium	mg/kg	0.22 J	0.35 J	0.16 J	0.13 J	<0.14	0.27 J	0.16 J	0.24 J	0.20 J	0.36 J	0.50 J	0.27 J	0.21 J	0.31 J	1.6	0.35 J	0.38 J	0.33 J	0.16 J	0.42 J	0.25 J	<0.14	0.752	71.1	985	1		
Chromium	mg/kg	8.1	15.7	8.7	8.7	7.5	11.7	6.5	7.7	10.2	8.5	23.7	9.9	8.6	7.6	13.7	10.4	20.4	11.9	16.2	26.9	17.5	15.3	360,000	NS	NS	44		
Lead	mg/kg	9.7	7.6	8.3	7.7	4.3	5.8	5.2	8.5	8.6	30.3 *	[490]	16.1	5.8	276	[[1,020]]	[[872]]	61.7	65.3	57.9	57.3	174	10.2	27	400	800	52		
Mercury	mg/kg	0.024 J	<0.011	<0.011	<0.011	<0.011	<0.012	<0.011	<0.011	<0.011	0.049	0.10	0.023 J	0.012 J	0.074	0.24	0.088	0.092	0.075	0.071	0.13	0.33	0.029 J	0.208	3.13	3.13	NS		
Selenium	mg/kg	<1.1	<1.1	<1.1	<1.1	<1.2	<1.2	<1.2	<1.1	<1.2	<1.2	<1.3	<1.2	<1.2	<1.1	<1.2	<1.2	1.7 J	<1.2	<1.2	<1.2	<1.3	<1.2	0.52	391	5,840	NS		
Silver	mg/kg	<0.36	<0.35	<0.34	<0.33	<0.37	<0.36	<0.36	<0.35	<0.36	0.46 J	<0.41	0.43 J	<0.36	0.70 J	0.46 J	0.72 J	<0.37	0.41 J	<0.37	<0.36	<0.40	<0.36	0.8491	391	5,840	NS		
<b>PCBs</b>																													
PCB-1016	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0094	4.11	28	NS		
PCB-1221	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0094	0.213	0.883	NS		
PCB-1232	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0094	0.19	0.792	NS		
PCB-1242	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0094	0.235	0.972	NS		
PCB-1248	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0094	0.236	0.975	NS		
PCB-1254	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0094	0.239	0.988	NS		
PCB-1260	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0094	0.243	1	NS		
<b>Cumulative DC RCL Exceeded (Y/N)?</b>		NO	NO	NO	YES	NO	NO	NO	NO	YES	YES	YES	NO	NO	NO	YES	YES	YES	YES	NO	YES	YES	NO	---	---	---	---		

**Table 2**  
**Soil Water Leaching Analytical Results**  
**Diercks Computational Science Hall - 1025 N. Milwaukee Street, Milwaukee, Wisconsin**  
**Sigma Project No. 17076**

Soil Sample Location:	MW-4		GP-14		GP-17		GP-20		GP-22		GP-23		GP-36		GP-38		NR 140 ES	NR 140 PAL
Sample Depth (feet bgs):	8.5 - 10		2 - 4		2 - 4		2 - 4		2 - 4		2 - 4		2 - 4		2 - 4			
Date:	2/27/18		2/26/18		2/26/18		2/27/18		2/27/18		2/27/18		2/28/18		2/28/18			
Units:	Totals	Water Leach	Totals	Water Leach	Totals	Water Leach	Totals	Water Leach	Totals	Water Leach	Totals	Water Leach	Totals	Water Leach	Totals	Water Leach		
	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L		
<b>PAHs</b>																		
Acenaphthene	<0.0151	NA	0.145	0.0175 J	0.045 J	0.0196 J	<0.0151	0.0149 J	0.0169 J	NA	0.044 J	0.0134 J	0.0289 J	NA	0.66	0.0256	NS	NS
Acenaphthylene	<0.0159	NA	0.071	0.096	0.075	0.121	<0.0159	0.088	0.0159 J	NA	0.0207 J	0.062	<0.0159	NA	<0.0795	0.163	NS	NS
Anthracene	<0.0109	NA	0.63	0.0138 J	0.35	0.01 J	0.194	<0.009	0.205	NA	0.37	<0.009	0.144	NA	5.00	<0.009	3,000	600
Benzo(a)anthracene	<0.013	NA	<b>[ 1.65 ]</b>	0.0181 J	<b>[ 1.78 ]</b>	<0.017	<b>[ 1.44 ]</b>	<0.017	0.96	NA	<b>[ 2.21 ]</b>	0.018 J	0.257	NA	<b>[ 7.60 ]</b>	<0.017	NS	NS
Benzo(a)pyrene	<0.0113	NA	<b>[ 1.20 ]</b>	<0.017	<b>[ 1.21 ]</b>	<0.017	<b>[ 1.15 ]</b>	<0.017	<b>[ 0.72 ]</b>	NA	<b>[ 1.77 ]</b>	<0.017	<b>[ 0.209 ]</b>	NA	<b>[ 4.50 ]</b>	<0.017	0.2	0.02
Benzo(b)fluoranthene	<0.013	NA	<b>[ 1.64 ]</b>	<0.02	<b>[ 1.71 ]</b>	<0.02	<b>[ 1.50 ]</b>	<0.02	<b>1.03</b>	NA	<b>[ 2.38 ]</b>	<0.02	0.284	NA	<b>[ 6.30 ]</b>	<0.02	0.2	0.02
Benzo(ghi)perylene	<0.0114	NA	0.80	0.0119 J	0.98	0.014 J	0.93	<0.011	0.47	NA	1.12	<0.011	0.14	NA	1.95	<0.011	NS	NS
Benzo(k)fluoranthene	<0.0147	NA	0.57	<0.014	0.57	<0.014	0.53	<0.014	0.35	NA	0.84	<0.014	0.099	NA	2.04	<0.014	NS	NS
Chrysene	<0.0121	NA	<b>1.19</b>	<0.019	<b>1.33</b>	<0.019	<b>1.13</b>	<0.019	<b>0.80</b>	NA	<b>1.73</b>	<0.019	<b>0.267</b>	NA	<b>6.30</b>	<0.019	0.2	0.02
Dibenzo(a,h)anthracene	<0.0078	NA	<b>[ 0.161 ]</b>	<0.01	<b>[ 0.181 ]</b>	<0.01	<b>[ 0.148 ]</b>	<0.01	0.091	NA	<b>[ 0.224 ]</b>	<0.01	0.033	NA	<b>[ 0.68 ]</b>	<0.01	NS	NS
Fluoranthene	<0.0147	NA	3.20	0.038 J	3.20	<0.031	2.32	<0.031	1.74	NA	3.60	<0.031	0.57	NA	14.4	<0.031	400	80
Fluorene	<0.0179	NA	0.15	<0.011	0.063	<0.011	<0.0179	<0.011	0.0208 J	NA	0.038 J	<0.011	0.033 J	NA	1.30	<0.011	400	80
Indeno(1,2,3-cd)pyrene	<0.0114	NA	0.67	<0.012	0.81	<0.012	0.72	<0.012	0.41	NA	0.98	<0.012	0.115	NA	<b>[ 1.94 ]</b>	<0.012	NS	NS
1-Methylnaphthalene	<0.0203	NA	0.049 J	<0.0239	<0.0203	<0.0239	<0.0203	<0.0239	0.034 J	NA	<0.0203	<0.0239	0.0226 J	NA	<0.1015	<0.0239	NS	NS
2-Methylnaphthalene	<0.0113	NA	0.038	0.042 J	<0.0113	0.041 J	<0.0113	0.0305 J	0.0271 J	NA	0.0118 J	0.0311 J	0.0205 J	NA	<0.0565	0.036 J	NS	NS
Naphthalene	<0.0153	NA	0.116	0.049 J	0.0153 J	0.039 J	<0.0153	0.033 J	0.0226 J	NA	0.0167 J	0.033 J	<0.0153	NA	<0.0765	0.042 J	100	10
Phenanthrene	<0.0111	NA	1.76	0.06 J	1.17	0.058 J	0.41	0.041 J	0.51	NA	0.91	0.035 J	0.50	NA	10.0	0.055 J	NS	NS
Pyrene	<0.0153	NA	2.73	<0.03	2.76	<0.03	2.00	<0.03	1.49	NA	3.12	<0.03	0.46	NA	11.1	<0.03	250	50
<b>Dissolved RCRA Metals</b>																		
Arsenic	<b>[ 50.7 ]</b>	<8.4	5.6 *	NA	6.2 *	NA	4.8 J *	<b>11 J</b>	<b>[ 14.7 ]</b>	<8.4	6.9 *	<8.4	6.3 *	<8.4	6.3 *	NA	10	1
Barium	50.0	16	68.1	NA	79.0	NA	<b>239</b>	71	<b>984</b>	38	<b>457</b>	39	154	32	83.7	NA	2,000	400
Cadmium	0.91 J *	<1.3	0.34 J	NA	0.71	NA	0.91 *	<1.3	<b>1.8</b>	<1.3	0.79 *	<1.3	<b>1.6</b>	<1.3	0.25 J	NA	5	0.5
Chromium	18.5	<2.6	11.4	NA	12.2	NA	<b>14.9</b>	<b>29</b>	<b>18.8</b>	8.4 J	13.5	<b>17</b>	<b>13.7</b>	<b>15</b>	17.5	NA	100	10
Lead	35.2 *	<b>8.6 J B</b>	<b>167</b>	NA	<b>133</b>	NA	<b>[ 529 ]</b>	<b>12 J B</b>	<b>[ 1,170 ]</b>	<b>9.2 J B</b>	<b>[ 567 ]</b>	<b>4.8 J B</b>	<b>[ 1,020 ]</b>	<b>15 B</b>	<b>174</b>	NA	15	1.5
Mercury	0.015 J	<0.13	<b>1.1</b>	NA	<b>0.29</b>	NA	<b>0.67</b>	<0.13	<b>1.3</b>	<0.13	<b>0.29</b>	<0.13	<b>0.24</b>	<0.13	<b>0.33</b>	NA	2	0.2
Selenium	<1.2	<17	<1.2	NA	<1.2	NA	<1.4	<17	<1.4	<17	<1.2	<17	<1.2	<17	<1.3	NA	50	10
Silver	0.83 J	<3.3	0.42 J	NA	<0.37	NA	0.48 J	<3.3	<0.43	<3.3	0.40 J	<3.3	0.46 J	<3.3	<0.40	NA	50	10

- Notes:
- NR 140 ES = Wisconsin Administrative Code, Chapter NR 140 Enforcement Standard
  - NR 140 PAL = Wisconsin Administrative Code, Chapter NR 140 Preventive Action Limit
  - NS = no standard
  - Analytical units: mg/kg = milligrams per kilogram (equivalent to parts per million, ppm)  
µg/L = micrograms per liter (equivalent to parts per billion, ppb)
  - NA = Not Analyzed
  - Laboratory flags: "J" = Analyte detected between Limit of Detection and Limit of Quantitation.  
"B" = Analyte detected in associated method blank
  - Totals results exceedances: **BOLD** = Concentration exceeds Groundwater Pathway RCL  
**[ ]** = Concentration exceeds Non-Industrial Direct Contact RCL (any depth)  
**{ }** = Concentration exceeds Industrial Direct Contact RCL (any depth)  
\* = Concentration is below Background Threshold Value so RCL exceedances are not noted
  - Highlights: **Purple** = Soil samples analyzed for "water leaching" by ASTM 3987
  - Water leaching exceedances: **BOLD** = Concentration exceeds NR 140 ES  
**ITALICS** = Concentration exceeds NR 140 PAL

**Table 3**  
**Groundwater Analytical Results**  
**Diercks Computational Science Hall - 1025 N. Milwaukee Street, Milwaukee, Wisconsin**  
**Sigma Project No. 17076**

Well Location:	MW-1	MW-2	MW-3	MW-4		MW-5	NR 140 ES	NR 140 PAL	
Date:	3/5/18	3/5/18	3/5/18	3/5/18	3/18 Dup	3/5/18			
Water Elevation* (feet MSL):	603.89	606.76	606.66	606.63	---	606.89			
<b>Detected VOCs</b>									
Chloroform	µg/L	<0.26	<0.26	<0.26	<0.26	<0.26	<b>0.83</b>	6	0.6
Tetrachloroethene	µg/L	<b>1.93</b>	<0.38	<0.38	<0.38	<0.38	<0.38	5	0.5
<b>PAHs</b>									
Acenaphthene	µg/L	<0.008	<0.008	<0.008	<0.008	NA	<0.008	NS	NS
Acenaphthylene	µg/L	<0.009	<0.009	<0.009	0.037	NA	<0.009	NS	NS
Anthracene	µg/L	<0.009	0.0095 J	<0.009	<0.009	NA	<0.009	3,000	600
Benzo(a)anthracene	µg/L	<0.017	<0.017	<0.017	<0.017	NA	<0.017	NS	NS
Benzo(a)pyrene	µg/L	<0.017	<0.017	<0.017	<0.017	NA	<0.017	0.2	0.02
Benzo(b)fluoranthene	µg/L	<0.02	<0.02	<0.02	<0.02	NA	<0.02	0.2	0.02
Benzo(ghi)perylene	µg/L	<0.011	<0.011	<0.011	<0.011	NA	<0.011	NS	NS
Benzo(k)fluoranthene	µg/L	<0.014	<0.014	<0.014	<0.014	NA	<0.014	NS	NS
Chrysene	µg/L	<0.019	<0.019	<0.019	<0.019	NA	<0.019	0.2	0.02
Dibenzo(a,h)anthracene	µg/L	<0.01	<0.01	<0.01	<0.01	NA	<0.01	NS	NS
Fluoranthene	µg/L	<0.031	<0.031	<0.031	<0.031	NA	<0.031	400	80
Fluorene	µg/L	0.0114 J	<0.011	<0.011	0.0131 J	NA	<0.011	400	80
Indeno(1,2,3-cd)pyrene	µg/L	<0.012	<0.012	<0.012	<0.012	NA	<0.012	NS	NS
1-Methylnaphthalene	µg/L	<0.0239	<0.0239	<0.0239	<0.0239	NA	<0.0239	NS	NS
2-Methylnaphthalene	µg/L	0.044 J	<0.0236	<0.0236	<0.0236	NA	<0.0236	NS	NS
Naphthalene	µg/L	0.043 J	0.066 J	0.057 J	0.047 J	NA	0.054 J	100	10
Phenanthrene	µg/L	<0.025	<0.025	<0.025	<0.025	NA	<0.025	NS	NS
Pyrene	µg/L	<0.03	<0.03	<0.03	<0.03	NA	<0.03	250	50
<b>Dissolved RCRA Metals</b>									
Arsenic	µg/L	<1.4	<0.7	<0.7	<0.7	NA	<0.7	10	1
Barium	µg/L	244	103	245	28.1	NA	47.1	2,000	400
Cadmium	µg/L	<0.4	0.43 J	<0.4	<0.4	NA	<0.4	5	0.5
Chromium	µg/L	<3.9	<3.9	<3.9	<3.9	NA	<3.9	100	10
Lead	µg/L	<0.9	<0.9	<0.9	<0.9	NA	<0.9	15	1.5
Mercury	µg/L	<0.1	<0.1	<0.1	<0.1	NA	<0.1	2	0.2
Selenium	µg/L	6.7	1.2 J	1.8 J	<1	NA	<1	50	10
Silver	µg/L	<8.4	<8.4	<8.4	<8.4	NA	<8.4	50	10

Notes:

- NR 140 ES = Wisconsin Administrative Code, Chapter NR 140 Enforcement Standard
- NR 140 PAL = Wisconsin Administrative Code, Chapter NR 140 Preventive Action Limit
- NS = no standard
- µg/L = micrograms per liter (equivalent to parts per billion, ppb)
- NA = Not Analyzed
- Laboratory flags: "J" = Analyte detected between Limit of Detection and Limit of Quantitation.
- Trip blank results: 3/5/18: All VOCs reported below laboratory detection limits.
- Equipment blank result 3/5/18: All VOCs reported below laboratory detection limits.
- Exceedances: **BOLD** = Concentration exceeds NR 140 ES  
**ITALICS** = Concentration exceeds NR 140 PAL
- Special notes: \* = monitoring well screen submerged below water table  
\*\* = not a PAL exceedance per NR 140.14(3)(c)  
Second vials from the March 2018 MW-1 and MW-5 samples were re-run to confirm the reported results: MW-1 contained PCE at 1.66 µg/L and MW-5 contained chloroform at 0.85 µg/L.

Attachment 2

Lakefield Sand and Gravel Data Summary

## Lakefield Sand and Gravel Data Summary

### **RCRA Metals**

Arsenic	3.6	to	12	mg/kg
Cadmium	0.35	to	54	mg/kg
Chromium, total	13	to	100	mg/kg
Lead	7.2	to	4800	mg/kg
Mercury	0.031	to	0.57	mg/kg
Silver	0.27	to	9.6	mg/kg

### **VOCs**

Benzene	32	to	890	ug/kg
sec-Butylbenzene	26.3	to	46000	ug/kg
tert-Butylbenzene	26.9	to	99	ug/kg
n-Butylbenzene	88	to	272000	ug/kg
Chlorobenzene	54	to	135	ug/kg
1,4-Dichlorobenzene	50	to	155	ug/kg
1,2-Dichlorobenzene	35	to	208	ug/kg
cis-1,2-Dichloroethene	37	to	290	ug/kg
trans-1,2-Dichloroethene		25.2		ug/kg
1,2-Dichloropropane		660		ug/kg
Ethylbenzene	36	to	137000	ug/kg
Isopropylbenzene	28.7	to	26100	ug/kg
p-Isopropyltoluene	29.3	to	46000	ug/kg
n-Propylbenzene	29	to	91000	ug/kg
Toluene	71	to	4000	ug/kg
Trichloroethene	47	to	520	ug/kg
1,2,4-Trimethylbenzene	27.5	to	890000	ug/kg
1,3,5-Trimethylbenzene	40	to	180000	ug/kg
Total Xylenes	71	to	428000	ug/kg

### **PAHs**

Acenaphthene	69	to	43300	ug/kg
Acenaphthylene	36	to	177	ug/kg
Anthracene	12	to	103000	ug/kg
Benzo(a)anthracene	15	to	104000	ug/kg
Benzo(b)fluoranthene	12	to	128000	ug/kg
Benzo(k)fluoranthene	21	to	44000	ug/kg
Benzo(a)pyrene	9.3	to	93600	ug/kg
Benzo(g,h,i)perylene	23	to	46800	ug/kg
Chrysene	27	to	90500	ug/kg
Dibenzo(a,h)anthracene	30	to	12000	ug/kg
Fluoranthene	22	to	300000	ug/kg
Fluorene	11	to	69500	ug/kg
Indeno(1,2,3-cd)pyrene	12	to	53600	ug/kg
1-Methylnaphthalene	13	to	36000	ug/kg
2-Methylnaphthalene	16	to	115000	ug/kg
Naphthalene	19	to	662000	ug/kg
Phenanthrene	9.9	to	290000	ug/kg
Pyrene	18	to	210000	ug/kg

### **PCBs**

PCB-1248		17		ug/kg
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Attachment 3

Former Lakefield Sand and Gravel Site Map



# MILWAUKEE COUNTY INTERACTIVE MAPPING SERVICE



**Projection**  
NAD\_1927\_StatePlane\_Wisconsin\_South\_FIPS\_4803



1:4,514

### Notes

Former Lakefield Sand and Gravel  
2015 Aerial Photograph

DISCLAIMER: This map is a user generated static output from the Milwaukee County Land Information Office Interactive Mapping Service website. The contents herein are for reference purposes only and may or may not be accurate, current or otherwise reliable. No liability is assumed for the data delineated herein either expressed or implied by Milwaukee County or its employees.

752 0 376 752 Feet

Attachment 4

Soil Management Plan (for MSOE Diercks Computational Science Hall)



## SOIL MANAGEMENT PLAN

**MSOE DIERCKS COMPUTATIONAL SCIENCE HALL  
1025 N. MILWAUKEE STREET, MILWAUKEE, WI  
BRRTS #02-41-581016 / FID #241343410**

**MARCH 26, 2018**

### Introduction

This *Soil Management Plan* is based Sigma's Phase II Environmental Site Assessment work completed in December 2017 and subsurface site investigation work completed between February and March 2018.

Milwaukee School of Engineering's (MSOE's) redevelopment plan for the Site expands their university campus with the construction of the Dwight and Dian Diercks Computational Science Hall building. The structure will be a 4-story building with approximately 68,000 square feet of floor space (within an approximately 17,200 square feet footprint) that houses computer labs and classrooms, a supercomputer / data center, comment space, an auditorium, corporate partnership space, faculty offices, and mechanical support areas. An underground parking level will be the lowest level of the building and expand beyond the building footprint; the areas surrounding the new building will include updated surface parking lots and landscaping / plazas.

Civil engineering grading and building design plans call for a soil cut volume of up to approximately 27,000 cubic yards (CY) of soil from the basement and foundation excavations:

- Up to approximately 13,000 CY of soil will be removed from the main building basement;
- Up to approximately 750 CY of soil will be removed for the ramp down to the basement;
- Up to approximately 3,750 CY of soil will be removed for the northwest basement area;
- Up to approximately 6,000 CY of soil may be removed for the alternate south basement area; and
- Up to approximately 3,500 CY of soil will be removed for the west footing / foundation work associated with the concurrent building improvements to MSOE's German English Academy building immediately to the west of the Site.

Analytical testing of soil samples did not identify any detectable concentrations of volatile organic compounds (VOCs). Some polynuclear aromatic hydrocarbons (PAHs) and some Resource Conservation and Recovery Act (RCRA) metal concentrations (primarily arsenic, lead, and mercury) exceeded protection of groundwater and/or direct contact (for non-industrial land use) pathway Residual Contaminant Levels (RCLs). The extents of impacts

greater than RCLs are generally confined to the central area of the Site where the future building will be located (refer to attached **Figure 9**); a large majority of the impacts will be removed during excavation for a basement parking level.

Groundwater analytical data indicate that PAH and dissolved RCRA metals are reported below the laboratory detection limits and NR 140 Preventive Action Limits (PALs) in each of the five monitoring wells. All VOCs were also reported below the laboratory detection limits in all the wells, except for two compounds slightly above their respective NR 140 PALs: tetrachloroethene in well MW-1 and chloroform in well MW-2. A source of these low-level impacts has not been identified in the soil samples but are adequately characterized to understand potential risks to human health and the environment. Refer to attached **Figure 10**.

The overall soil management strategy (refer to attached **Figure 11**) is to transport all excavated material off-site and dispose of in a cost-effective manner. The first preference is to find a suitable off-site location(s) that can accept the soil with WDNR approval under NR 718.

- One NR 718 exemption application is in progress by Friess Environmental Consulting, Inc. for the R & R Excavating contractor disposal site in the Town of Cedarburg. However, it was just recently learned that a conflict in obtaining the R & R Excavating land owners' signatures could delay the WDNR's approval of this disposal location. A separate exemption application will be submitted as soon as possible to the WDNR.
- A second NR 718 exemption application is being considered for the Milwaukee Solvay Coke and Gas Site at 311 E. Greenfield Avenue in Milwaukee. It is understood that this property needs soil with low-level impacts to fill and cap the property as part of an overall remediation project. Sigma will submit a separate exemption application as soon as possible to the WDNR if this disposal location is feasible.

If all the soil cannot be accommodated with the NR 718 exemption(s), the next option is to haul the soil to a WDNR-licensed landfill for disposal. If this option is necessary, the requisite soil waste profile paperwork and supporting laboratory analytical data will be supplied to the landfill operator for review and approval.

Upon completion of the mass excavation work for the building basements, post-excavation soil samples will be collected on an approximately 50-foot grid interval across the excavation areas (refer to **Figure 13**) to help document residual contaminant concentrations that will remain at the Site. Soil samples will be analyzed for VOCs, PAHs, and RCRA metals.

#### Schedule

Construction is planned to begin in late May / early June 2018 and be complete by late summer 2019 in time for the start of the fall 2019 MSOE academic year. Most soil management activities are expected to take place in summer 2018.

Responsible Party / Land Owner:  
Milwaukee School of Engineering  
1025 N. Broadway  
Milwaukee, WI 53202  
Telephone: (414) 277-2204  
Contact: Dr. Blake Wentz  
Email: [wentz@msoe.edu](mailto:wentz@msoe.edu)

Site Location Information:  
1025 N. Milwaukee Street  
Milwaukee, WI 53202  
NW ¼ of NW ¼ of Sec 28, T7N, R22E  
Wisconsin Transverse Mercator '91  
X 690440  
Y 287865

Environmental Consultant  
The Sigma Group, Inc.  
1300 W. Canal Street  
Milwaukee, WI 53233  
Contact: Adam J. Roder, P.E.  
Telephone: 414-643-4200  
Email: [aroder@thesigmagroup.com](mailto:aroder@thesigmagroup.com)

Construction Manager  
Mortenson Construction  
17975 W. Sarah Lane  
Brookfield, WI 53045  
Contact: Danny O'Brien  
Telephone: 763-287-3534 (office) / 414-213-6222 (mobile)  
Email: [danny.obrien@mortenson.com](mailto:danny.obrien@mortenson.com)

Earthworks Contractor  
To be determined

#### General Conditions

Construction Manager and Earthworks Contractor shall prepare a site-specific Health & Safety Plan for their respective personnel prior to beginning site work. Sigma will prepare a site-specific Health & Safety Plan for its own personnel.

During the earthmoving and soil excavation activities, the Earthworks Contractor's heavy equipment operator(s) shall be 40-hour OSHA trained. Truck drivers do not need to be 40-hour OSHA trained provided they do not exit their vehicles at the site. Construction Manager is responsible to making all site workers aware of the environmental conditions at the Site.

Prior to subsurface excavation activities, the Construction Manager or Earthworks Contractor will obtain all necessary City of Milwaukee and/or State of Wisconsin permits relating to erosion control and storm water management unless otherwise specified by the Responsible Party / Land Owner.

Silt fences, storm sewer inlet protection, and other erosion control measures will be implemented and maintained at the site in accordance with an approved Erosion Control Plan. Erosion control measures shall be inspected by the Construction Manager and/or Earthworks Contractor in accordance with the Erosion Control Plan and permit.

WDNR shall be provided with a 7-day notice prior to commencing soil management activities. Sigma will assist the Construction Manager and/or Responsible Party / Land Owner in making this notification to the WDNR.

### Soil Management

Soil conditions will be evaluated and managed in accordance with this *Soil Management Plan* under the direction and guidance of Sigma on behalf of Responsible Party / Land Owner. Sigma will provide a 40-hour OSHA trained environmental professional on-site as needed during soil excavation activities. Sigma will provide the Construction Manager with a copy of this *Soil Management Plan* (who must in turn make it available to subcontractors that will be involved with subsurface work) and will be available to provide on-site services, including screening soils with a photoionization detection (PID) in the field, observing and documenting the management of areas of known or unknown contamination, monitoring soil excavation areas, collecting soil samples, directing trucks to the appropriate off-site disposal location after being loaded with soil, and/or providing other on-call services as mentioned within this *Soil Management Plan*.

If concrete rubble, asphalt rubble, or wood is encountered during excavations, this material shall be segregated (if possible) for off-site recycling and/or hauled to a local licensed landfill facility for disposal.

- Clean concrete slabs and foundations that may be uncovered during excavation shall be cleaned of loose soil and transported off-site for recycling.
- Asphalt pavement is present at the ground surface across much of the Site. Asphalt pavement shall be stripped, segregated from underlying soil, and transported off-site for recycling.

If building debris is encountered during any excavation that may potentially contain asbestos containing materials (ACMs), work will be stopped in that area, the work area will be restricted with caution tape and/or signage, and the Construction Manager / Earthworks Contractor shall contact Responsible Party / Land Owner. The Earthworks Contractor may continue work in another location if feasible. Responsible Party / Land Owner shall contact Sigma to evaluate the building debris by a state-licensed Asbestos Inspector and direct the transportation to a licensed landfill facility for disposal as conditions merit.

Unknown underground storage tanks (USTs) may be encountered during excavation activities. If a UST is discovered, work will be stopped in that area, access to the work area will be restricted with caution tape and/or signage, and the Construction Manager / Earthworks Contractor shall contact Responsible Party / Land Owner. The Earthworks Contractor may continue work in another location if feasible. Responsible Party / Land Owner shall contact Sigma to notify the appropriate authorities and coordinate with a licensed tank removal contractor to clean and remove the UST in accordance with current State of Wisconsin (and City of Milwaukee) rules and regulations, including the completion of a Tank System Site Assessment. Waste materials generated during the UST removal and cleaning process will be disposed of in accordance with local, state, and federal requirements. The UST closure process will be documented by Sigma. Sigma will

coordinate any over-excavation services required of the tank removal contractor and the proper disposal of waste materials (e.g., tank sludge).

The overall soil management strategy is to transport all excavated material off-site and dispose of in a cost-effective manner. The first preference is to find a suitable off-site location(s) that can accept the soil with WDNR approval under NR 718; soil cannot be transported to a NR 718 contractor disposal site without WDNR pre-approval. If all the soil cannot be accommodated with the NR 718 exemption(s), the next option is to haul the soil to a WDNR-licensed landfill for disposal. If this option is necessary, the requisite soil waste profile paperwork and supporting laboratory analytical data will be supplied to the landfill operator for review and approval.

Temporary on-site stockpiles of contaminated soil shall follow the provisions of NR 718.05(3), generally including:

- Soil volume is limited to less than 2,500 cubic yards;
- Soil may be stockpiled for 15 days or less;
- Soil must be stockpiled on-site within 1,000 feet of where it was excavated;
- Soil must be placed on an impervious surface, such as concrete, asphalt, plastic sheeting, or geomembrane liner;
- Soil stockpile must be covered with plastic sheeting (10-mil thick minimum) that is secured at the end of each work day to prevent water infiltration, dust, odors, and erosion.

If the requirements of temporary storage cannot be met, the general storage requirements of NR 718.05(2) must be followed (or an exemption to parts of NR 718.05(2) must be obtained) for on-site stockpiles:

- Soil stockpile may not be located in a floodplain, within 100 feet of a wetland or critical habitat area, within 300 feet of any navigable water body, or within 100 feet of a water supply well;
- Soil must be placed on an impervious surface, such as concrete, asphalt, plastic sheeting, or geomembrane liner;
- Soil stockpile must be covered with plastic sheeting that is secured at the end of each work day to prevent water infiltration, dust, odors, and erosion;
- Berms or other engineering controls must be constructed to prevent surface water contact with the soil;
- Proper signage must be erected; and
- Notify the WDNR if the stockpile is stored 90 days or more.

#### Imported Fill

Imported engineered fill will be needed as backfill for the structural subgrade preparation beneath buildings, parking lots, roadways, sidewalks, and/or utilities. Engineered fill shall originate from quarries that mine native granular soils. Clean, recycled concrete may also be acceptable if the material meets the structural / civil project specifications. If recycled concrete is used, the source, quantity, and placement location at the Site shall be documented by the Construction Manager in the project records.

Prior to importing clean soil, including topsoil, the Construction Manager must provide the Responsible Party / Land Owner with the borrow property location and history of that borrow source, including a list of property owners, historic and current property usage, a physical description of the soil, and general location / depth from which the soil will be excavated. Responsible Party / Land Owner may request, at the Construction Manager's expense, laboratory testing of the soil for environmental parameters that could affect the regulatory case closure process. Soil shall not be imported until written approval is provided by the Responsible Party / Land Owner and/or a designated representative. After approval, a manifest system must be implemented by the Construction Manager to ensure that only approved soil materials are received at the Site.

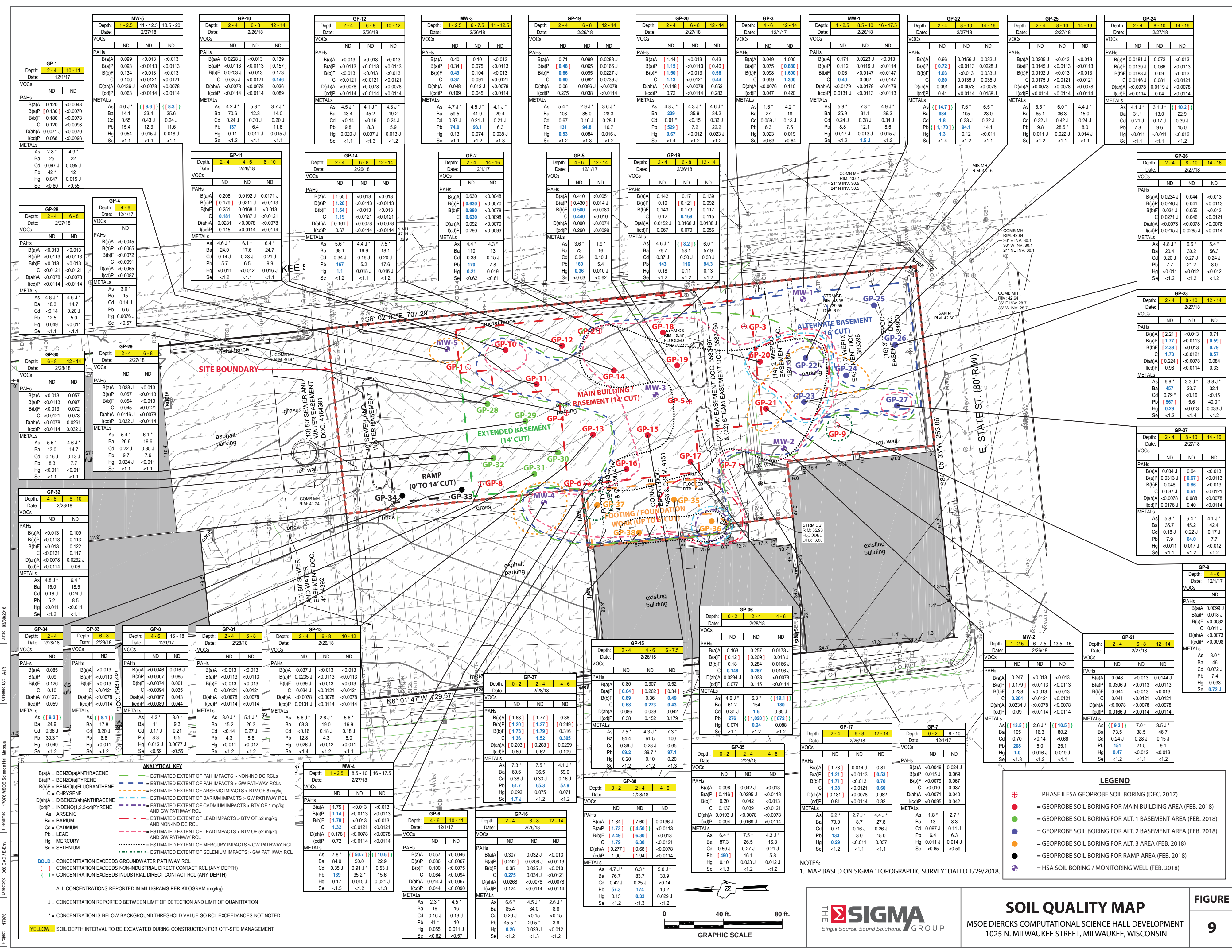
#### Water Management

Groundwater or storm water that accumulates in excavations may be discharged to the local sanitary sewer system in accordance with jurisdictional permitting requirements.

- At this time, water disposal via the combined sewer system is considered the most feasible option. Construction Manager and/or Earthworks Contractor shall prepare a MMSD Notice of Intent form, submit the requisite permit application fees, and obtain permit approval. Responsible Party / Land Owner will require the Construction Manager and Excavation Contractor to abide by the limitations set forth the MMSD approval letter.
- Other water disposal options may be acceptable if performed in accordance with local, state, and/or federal regulations. Alternative water disposal options shall be discussed with Responsible Party / Land Owner and Sigma prior to implementation.

#### Attachments

- Figure 9 - Soil Quality Map
- Figure 10 - Groundwater Quality Map
- Figure 11 - Soil Management Plan Map
- Figure 13 - Post-Excavation Soil Sampling Plan Map



Project: 17076  
 Date: 03/20/2018  
 Created By: AAR  
 Filename: 17076 MSOE Science Hall Maps.dwg  
 Directory: 060 CAD / E-Env

**ANALYTICAL KEY**

B(a)A = BENZO(A)ANTHRACENE  
 B(a)P = BENZO(A)PYRENE  
 B(b)F = BENZO(B)FLUORANTHENE  
 C = CHRYSENE  
 D(h)A = DIBENZO(A,H)ANTHRACENE  
 I(c)D(P) = INDENO(1,2,3-c)PYRENE  
 As = ARSENIC  
 Ba = BARIUM  
 Cd = CADMIUM  
 Pb = LEAD  
 Hg = MERCURY  
 Se = SELENIUM

--- ESTIMATED EXTENT OF PAH IMPACTS > NON-IND DC RCL  
 --- ESTIMATED EXTENT OF PAH IMPACTS > GW PATHWAY RCL  
 --- ESTIMATED EXTENT OF ARSENIC IMPACTS > BTV OF 8 mg/kg  
 --- ESTIMATED EXTENT OF BARIUM IMPACTS > GW PATHWAY RCL  
 --- ESTIMATED EXTENT OF CADMIUM IMPACTS > BTV OF 1 mg/kg AND GW PATHWAY RCL  
 --- ESTIMATED EXTENT OF LEAD IMPACTS > BTV OF 52 mg/kg AND NON-IND DC RCL  
 --- ESTIMATED EXTENT OF LEAD IMPACTS > BTV OF 52 mg/kg AND GW PATHWAY RCL  
 --- ESTIMATED EXTENT OF MERCURY IMPACTS > GW PATHWAY RCL  
 --- ESTIMATED EXTENT OF SELENIUM IMPACTS > GW PATHWAY RCL

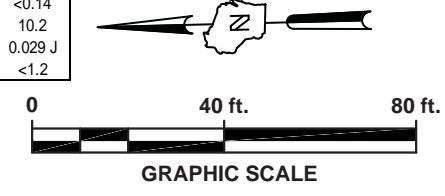
**BOLD** = CONCENTRATION EXCEEDS GROUNDWATER PATHWAY RCL  
 [ ] = CONCENTRATION EXCEEDS NON-INDUSTRIAL DIRECT CONTACT RCL (ANY DEPTH)  
 ( ) = CONCENTRATION EXCEEDS INDUSTRIAL DIRECT CONTACT RCL (ANY DEPTH)

ALL CONCENTRATIONS REPORTED IN MILLIGRAMS PER KILOGRAM (mg/kg)

J = CONCENTRATION REPORTED BETWEEN LIMIT OF DETECTION AND LIMIT OF QUANTITATION  
 \* = CONCENTRATION IS BELOW BACKGROUND THRESHOLD VALUE SO RCL EXCEEDANCES NOT NOTED  
 YELLOW = SOIL DEPTH INTERVAL TO BE EXCAVATED DURING CONSTRUCTION FOR OFF-SITE MANAGEMENT

**LEGEND**

- ⊕ = PHASE II ESA GEOPROBE SOIL BORING (DEC. 2017)
- = GEOPROBE SOIL BORING FOR MAIN BUILDING AREA (FEB. 2018)
- = GEOPROBE SOIL BORING FOR ALT. 1 BASEMENT AREA (FEB. 2018)
- = GEOPROBE SOIL BORING FOR ALT. 2 BASEMENT AREA (FEB. 2018)
- = GEOPROBE SOIL BORING FOR ALT. 3 AREA (FEB. 2018)
- = GEOPROBE SOIL BORING FOR RAMP AREA (FEB. 2018)
- = HSA SOIL BORING / MONITORING WELL (FEB. 2018)



**SOIL QUALITY MAP**

MSOE DIERCKS COMPUTATIONAL SCIENCE HALL DEVELOPMENT  
 1025 N. MILWAUKEE STREET, MILWAUKEE, WISCONSIN

**FIGURE 9**



Project: 17076  
Directory: 060 CAD / E-Env  
Filename: 17076 MSOE Science Hall Maps.dwg  
Created By: A.R.  
Date: 02/21/2018

**ANALYTICAL KEY**

CF = CHLOROFORM  
PCE = TETRACHLOROETHENE

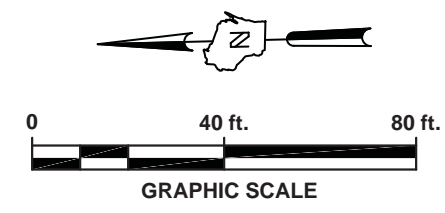
**BOLD** = CONCENTRATION EXCEEDS NR 140 ES  
**ITALICS** = CONCENTRATION EXCEEDS NR 140 PAL

ALL CONCENTRATIONS REPORTED IN MICROGRAMS PER LITER (µg/L)

**LEGEND**

- ⊕ = PHASE II ESA GEOPROBE SOIL BORING (DEC. 2017)
- = GEOPROBE SOIL BORING FOR MAIN BUILDING AREA (FEB. 2018)
- = GEOPROBE SOIL BORING FOR ALT. 1 BASEMENT AREA (FEB. 2018)
- = GEOPROBE SOIL BORING FOR ALT. 2 BASEMENT AREA (FEB. 2018)
- = GEOPROBE SOIL BORING FOR ALT. 3 AREA (FEB. 2018)
- = GEOPROBE SOIL BORING FOR RAMP AREA (FEB. 2018)
- = HSA SOIL BORING / MONITORING WELL (FEB. 2018)

NOTES:  
1. MAP BASED ON SIGMA "TOPOGRAPHIC SURVEY" DATED 1/29/2018.



**GROUNDWATER QUALITY MAP**  
MSOE DIERCKS COMPUTATIONAL SCIENCE HALL DEVELOPMENT  
1025 N. MILWAUKEE STREET, MILWAUKEE, WISCONSIN



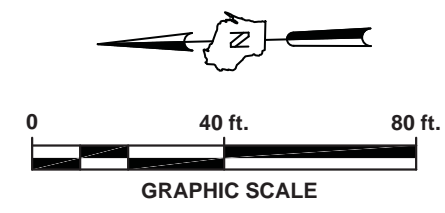


SOIL IMPACTS KEY	
	= ESTIMATED EXTENT OF PAH IMPACTS > NON-IND DC RCLs
	= ESTIMATED EXTENT OF PAH IMPACTS > GW PATHWAY RCLs
	= ESTIMATED EXTENT OF ARSENIC IMPACTS > BTV OF 8 mg/kg
	= ESTIMATED EXTENT OF BARIUM IMPACTS > GW PATHWAY RCL
	= ESTIMATED EXTENT OF CADMIUM IMPACTS > BTV OF 1 mg/kg AND GW PATHWAY RCL
	= ESTIMATED EXTENT OF LEAD IMPACTS > BTV OF 52 mg/kg AND NON-IND DC RCL
	= ESTIMATED EXTENT OF LEAD IMPACTS > BTV OF 52 mg/kg AND GW PATHWAY RCL
	= ESTIMATED EXTENT OF MERCURY IMPACTS > GW PATHWAY RCL
	= ESTIMATED EXTENT OF SELENIUM IMPACTS > GW PATHWAY RCL

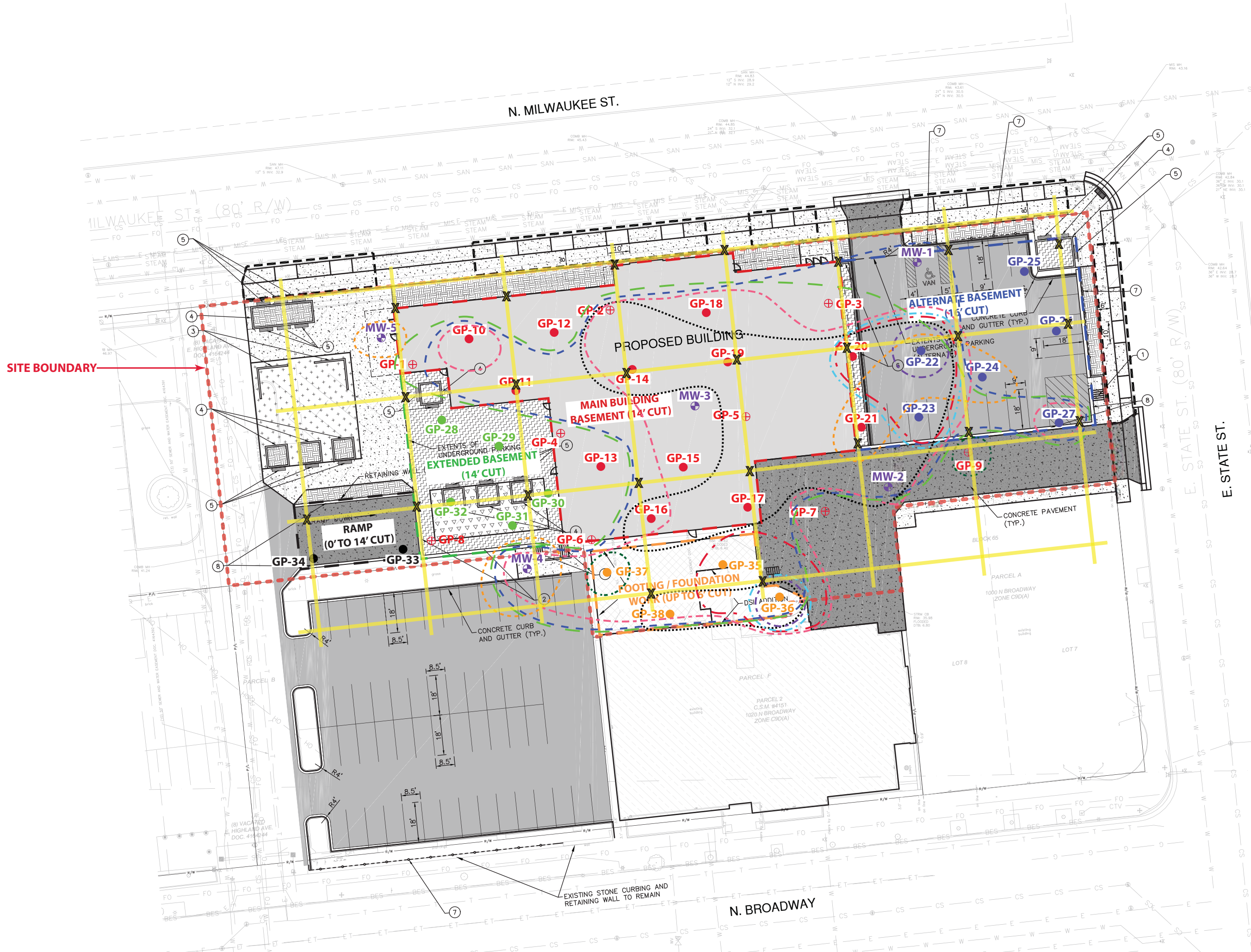
SOIL MANAGEMENT KEY	
	= SOIL EXCAVATED FOR RAMP AND BASEMENTS TO BE MANAGED AND DISPOSED OFF-SITE UNDER A WDNR PRE-APPROVED NR 718 EXEMPTION (MILWAUKEE SOLVAY COKE AND GAS SITE AT 311 E. GREENFIELD AVENUE, MILWAUKEE)
	= REMAINING SOIL EXCAVATED FOR BASEMENTS AND SUBGRADE PREPARATION OUTSIDE OF BUILDING TO BE MANAGED AND DISPOSED OFF-SITE UNDER A WDNR PRE-APPROVED NR 718 EXEMPTION(S) AND/OR WDNR LICENSED LANDFILL FACILITY WITH APPROPRIATE SOIL PROFILE APPROVAL FROM LANDFILL

LEGEND	
	= PHASE II ESA GEOPROBE SOIL BORING (DEC. 2017)
	= GEOPROBE SOIL BORING FOR MAIN BUILDING AREA (FEB. 2018)
	= GEOPROBE SOIL BORING FOR ALT. 1 BASEMENT AREA (FEB. 2018)
	= GEOPROBE SOIL BORING FOR ALT. 2 BASEMENT AREA (FEB. 2018)
	= GEOPROBE SOIL BORING FOR ALT. 3 AREA (FEB. 2018)
	= GEOPROBE SOIL BORING FOR RAMP AREA (FEB. 2018)
	= HSA SOIL BORING / MONITORING WELL (FEB. 2018)

NOTES:  
1. MAP BASED ON GRAEF "LAYOUT AND MATERIALS PLAN" SHEET DATED 3/7/2018.



**SOIL MANAGEMENT PLAN MAP**  
MSOE DIERCKS COMPUTATIONAL SCIENCE HALL DEVELOPMENT  
1025 N. MILWAUKEE STREET, MILWAUKEE, WISCONSIN

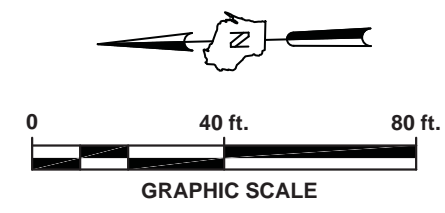


SOIL IMPACTS KEY	
	= ESTIMATED EXTENT OF PAH IMPACTS > NON-IND DC RCLs
	= ESTIMATED EXTENT OF PAH IMPACTS > GW PATHWAY RCLs
	= ESTIMATED EXTENT OF ARSENIUM IMPACTS > BTV OF 8 mg/kg
	= ESTIMATED EXTENT OF BARIUM IMPACTS > GW PATHWAY RCL
	= ESTIMATED EXTENT OF CADMIUM IMPACTS > BTV OF 1 mg/kg AND GW PATHWAY RCL
	= ESTIMATED EXTENT OF LEAD IMPACTS > BTV OF 52 mg/kg AND NON-IND DC RCL
	= ESTIMATED EXTENT OF LEAD IMPACTS > BTV OF 52 mg/kg AND GW PATHWAY RCL
	= ESTIMATED EXTENT OF MERCURY IMPACTS > GW PATHWAY RCL
	= ESTIMATED EXTENT OF SELENIUM IMPACTS > GW PATHWAY RCL

POST-EXCAVATION SOIL SAMPLING KEY	
	= POST-EXCAVATION SOIL SAMPLE TO BE COLLECTED FROM BOTTOM OF MASS EXCAVATION FOR BASEMENT AREAS (APPROXIMATELY 50-FOOT GRID INTERVAL). SOIL SAMPLES TO BE SUBMITTED TO ENVIRONMENTAL LABORATORY FOR ANALYSIS OF VOCs, PAHs, AND RCRA METALS.

LEGEND	
	= PHASE II ESA GEOPROBE SOIL BORING (DEC. 2017)
	= GEOPROBE SOIL BORING FOR MAIN BUILDING AREA (FEB. 2018)
	= GEOPROBE SOIL BORING FOR ALT. 1 BASEMENT AREA (FEB. 2018)
	= GEOPROBE SOIL BORING FOR ALT. 2 BASEMENT AREA (FEB. 2018)
	= GEOPROBE SOIL BORING FOR ALT. 3 AREA (FEB. 2018)
	= GEOPROBE SOIL BORING FOR RAMP AREA (FEB. 2018)
	= HSA SOIL BORING / MONITORING WELL (FEB. 2018)

NOTES:  
1. MAP BASED ON GRAEF "LAYOUT AND MATERIALS PLAN" SHEET DATED 3/7/2018.



**POST-EXCAVATION SOIL SAMPLING PLAN MAP**  
MSOE DIERCKS COMPUTATIONAL SCIENCE HALL DEVELOPMENT  
1025 N. MILWAUKEE STREET, MILWAUKEE, WISCONSIN

**FIGURE 13**

Attachment 5

Proposed Cap Maintenance Plan (for Former Lakefield Sand and Gravel Property)

## CAP MAINTENANCE PLAN

APRIL 2018

### PROPERTY LOCATED AT:

7003 W. GOOD HOPE ROAD, MILWAUKEE, WISCONSIN 53223

FORMER LAKEFIELD SAND AND GRAVEL

FID #241377070, WDNR BRRS #02-41-548828

### INTRODUCTION

This Cap Maintenance Plan for the above-referenced property (the "Site") has been prepared in accordance with the requirements of s. NR 724.13(2), Wisconsin Administrative Code. The maintenance activities relate to the 2-foot thick clean soil cover that will cap the Site [the clean soil cover is in varying stages of completion as of April 2018].

More site-specific information about this property may be found in:

- The case file in the Wisconsin Department of Natural Resources (WDNR) Southeast regional office;
- BRRS on the Web (DNR's internet-based data base of contaminated sites): <http://dnr.wi.gov/botw/SetUpBasicSearchForm.do>;
- GIS Registry PDF file for further information on the nature and extent of contamination: <http://dnrmaps.wi.gov/sl/?Viewer=RR%20Sites>; and
- A WDNR project manager for Milwaukee County.

### DESCRIPTION OF CONTAMINATION

Soil contaminated by volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), arsenic, cadmium, chromium, lead, mercury, silver, and polychlorinated biphenyls (PCBs) has been identified at variable depth at the Site. The extents of soil contamination is depicted on Figure # [figure(s) to be included with final Cap Maintenance Plan].

### CAP MAINTENANCE ACTIONS

**Description of the Cap to be Maintained.** The cap consists [will consist] of a 1-foot thick (minimum) low-permeability clean soil layer with a hydraulic conductivity of  $1 \times 10^{-6}$  centimeters per second covered with a 1-foot thick (minimum) clean soil layer. This uppermost clean soil layer will then be covered with a 3-inch thick layer of topsoil to accommodate seeding / grass for stabilization as the final usage of the Site will be soccer fields. The cap area is depicted on Figure # [figure to be included with final Cap Maintenance Plan].

**Cap Purpose.** The cap over the impacted soil serves as a barrier to prevent direct human contact with residual soil contamination that might otherwise pose a direct contact threat to human health. The cap also acts as an infiltration barrier to minimize future soil-to-groundwater contamination migration that could potentially violate NR 140 groundwater

quality standards. Based on the current and future use of the Site, the cap will function as intended unless disturbed.

**Annual Inspection.** The cap overlying the contaminated soil as depicted in **Figure #** will be inspected once a year, normally in the spring after all snow and ice is gone, for deterioration, cracks and other potential problems that can cause exposure to or additional infiltration into underlying soils. The inspections will be performed by the property owner or their designated representative. The inspections will be performed to evaluate damage due to settling, exposure to the weather, wear from usage as soccer fields, increasing age, and other factors. Any area where soils have become or are likely to become exposed, and where infiltration from the surface will not be effectively minimized, will be documented.

A log of the inspections and any repairs will be maintained by the property owner and is attached (refer to "Continued Obligations Inspection and Maintenance Log", DNR form 4400-305). The log will include recommendations for necessary repair of any areas where underlying soils are exposed and where infiltration from the surface will not be effectively minimized. Once repairs are completed, they will be documented in the inspection log. A copy of the inspection log will be kept at the site and available for submittal or inspection by WDNR representatives upon their request.

**Maintenance Activities.** If problems are noted during the annual inspections or at any other time during the year, repairs will be scheduled as soon as practical. In the event that necessary maintenance activities expose the underlying soil, the owner must inform maintenance workers of the exposure hazard so that appropriate personal protection equipment (PPE) can be utilized. The owner must also sample any soil that is excavated from the site prior to disposal to ascertain if contamination remains. The soil must be treated, stored, and disposed of by the owner in accordance with applicable local, state, and federal law.

In the event the cap overlying the contaminated soil is removed or replaced, the replacement barrier must be equally impervious. Any replacement barrier will be subject to the same maintenance and inspection guidelines as outlined in this Cap Maintenance Plan unless indicated otherwise by the WDNR or its successor.

The property owner, in order to maintain the integrity of the cap, will maintain a copy of this Cap Maintenance Plan on-site and make it available to all interested parties (i.e. on-site employees, contractors, future property owners, etc.) for viewing.

#### **PROHIBITION OF ACTIVITIES AND NOTIFICATION OF WDNR PRIOR TO ACTION AFFECTING A COVER OR CAP**

The following activities are prohibited on any portion of the property where the cap is required as shown on the attached map, unless prior written approval has been obtained from the WDNR: 1) removal of the existing barrier; 2) replacement with another barrier; 3) excavating or grading of the land surface; 4) filling on capped or paved areas; 5) plowing for agricultural cultivation; or 6) construction or placement of a building or other structure.

If removal, replacement, or other changes to a cover, or a building which is acting as a cover, are considered, the property owner shall contact the WDNR at least 45 days before taking such action to determine whether further action may be necessary to protect human health, safety, or welfare or the environment, in accordance with s. NR 727.07, Wisconsin Administrative Code.

### **AMENDMENT OR WITHDRAWAL OF MAINTENANCE PLAN**

This Maintenance Plan can be amended or withdrawn by the property owner and its successors with the written approval of WDNR.

### **CONTACT INFORMATION (as of April 2018)**

- Property Owner / Responsible Party:  
SWP Properties, LLC  
1300 W. Canal Street  
Milwaukee, WI 53233  
Contact: Mr. Dave Scherzer  
Telephone: (414) 643-4101  
Email: [dscherzer@thesigmagroup.com](mailto:dscherzer@thesigmagroup.com)

Signature: \_\_\_\_\_

- Environmental Consultant:  
The Sigma Group, Inc.  
1300 West Canal Street  
Milwaukee, WI 53233  
Telephone: (414) 643-4200  
Contact: Ms. Kristin Kurzka  
Email: [kkurzka@thesimgagroup.com](mailto:kkurzka@thesimgagroup.com)
- WDNR Project Manager:  
WDNR Southeast Region  
2300 N. Dr. Martin Luther King Jr. Drive  
Milwaukee, WI 53212  
Telephone: (262) 263-8607  
Contact: Mr. Binyoti Amungwafor  
Email: [Binyoti.Amungwafor@wisconsin.gov](mailto:Binyoti.Amungwafor@wisconsin.gov)

### **Attachments**

- Figure # - Soil Quality Map(s) [figure(s) to be updated for final Cap Maintenance Plan]
- Figure # - Maintenance Location Map [to be generated in the future after final cap construction for final Cap Maintenance Plan]
- Form 4400-305 "Continuing Obligations Inspection and Maintenance Log"

**Directions:** In accordance with s. NR 727.05 (1) (b) 3., Wis. Adm. Code, use of this form for documenting the inspections and maintenance of certain continuing obligations is required. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records law [ss. 19.31-19.39, Wis. Stats.]. When using this form, identify the condition that is being inspected. See the closure approval letter for this site for requirements regarding the submittal of this form to the Department of Natural Resources. A copy of this inspection log is required to be maintained either on the property, or at a location specified in the closure approval letter. Do NOT delete previous inspection results. This form was developed to provide a continuous history of site inspection results. The Department of Natural Resources project manager is identified in the closure letter. The project manager may also be identified from the database, BRRTS on the Web, at <http://dnr.wi.gov/botw/SetUpBasicSearchForm.do>, by searching for the site using the BRRTS ID number, and then looking in the "Who" section.

Activity (Site) Name <b>Former Lakefield Sand and Gravel</b>	BRRTS No. <b>02-41-548828</b>
---	----------------------------------

Inspections are required to be conducted (see closure approval letter):

annually  
 semi-annually  
 other – specify \_\_\_\_\_

When submittal of this form is required, submit the form electronically to the DNR project manager. An electronic version of this filled out form, or a scanned version may be sent to the following email address (see closure approval letter):

**Binyoti.Amungwafor@wisconsin.gov**

Inspection Date	Inspector Name	Item	Describe the condition of the item that is being inspected	Recommendations for repair or maintenance	Previous recommendations implemented?	Photographs taken and attached?
		<input type="checkbox"/> monitoring well <input checked="" type="checkbox"/> cover/barrier <input type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N

{Click to Add/Edit Image}

Date added:

Title:



Attachment 6

Former Lakefield Sand and Gravel Deed & Plat of Survey

State Bar of Wisconsin Form 3-2003  
QUIT CLAIM DEED

RECORDED  
01/22/2013 01:40PM

JOHN LA FAVE  
REGISTER OF DEEDS  
Milwaukee County, WI  
AMOUNT: \$30.00  
TRANSFER FEE: \$561.00  
FEE EXEMPT #: 0

\*\*\*This document has been electronically recorded and returned to the submitter.\*\*\*

Document Number

Document Name

**THIS DEED**, made between Good Lad, LLC, a Wisconsin limited liability company and Christine Neumann as Trustee of the Hendricks Revocable Trust

("Grantor," whether one or more), and SWP Properties, LLC, a Wisconsin limited liability company

("Grantee," whether one or more).  
Grantor quit claims to Grantee the following described real estate, together with the rents, profits, fixtures and other appurtenant interests, in Milwaukee County, State of Wisconsin ("Property") (if more space is needed, please attach addendum):

- SEE ADDENDUM ATTACHED -

Recording Area

Name and Return Address  
**SWP Properties, LLC**  
Attn: David Scherzer  
1300 W. Canal Street  
Milwaukee, WI 53233

119-9997-110-7

Parcel Identification Number (PIN)

This is not homestead property.  
(is) (is not)

Dated ~~December~~ January 18, 2013 2013

Good Lad, LLC, a Wisconsin limited liability company

M. Lorayne Gehringer (SEAL)  
\* By: M. Lorayne Gehringer, Sole Member

Hendricks Revocable Trust

Christine A. Neuman trustee (SEAL)  
\* By: Christine Neumann, Trustee

\_\_\_\_ (SEAL)

\_\_\_\_ (SEAL)

**AUTHENTICATION**

Signature(s) M. Lorayne Gehringer, Sole Member

authenticated on JANUARY 17, 2013

John G. Gehringer  
\* **John G. Gehringer**

TITLE: MEMBER STATE BAR OF WISCONSIN  
(If not, \_\_\_\_\_  
authorized by Wis. Stat. § 706.06 )

THIS INSTRUMENT DRAFTED BY:

John G. Gehringer, Esq.  
O'Neil, Cannon, Hollman, DeJong & Laing S.C.

**ACKNOWLEDGMENT**

STATE OF WISCONSIN )  
 ) ss.  
MILWAUKEE COUNTY )

Personally came before me on December 20, 2012,  
the above-named Christine Newman as Trustee of the Hendricks Revocable Trust

to me known to be the person(s) who executed the foregoing instrument and acknowledged the same.

John G. Gehringer  
\* **JOHN G. GEHRINGER**  
Notary Public, State of Wisconsin  
My commission (is permanent) (expires: \_\_\_\_\_)



(Signatures may be authenticated or acknowledged. Both are not necessary.)

NOTE: THIS IS A STANDARD FORM. ANY MODIFICATION TO THIS FORM SHOULD BE CLEARLY IDENTIFIED.  
QUIT CLAIM DEED ©2003 STATE BAR OF WISCONSIN

\*Type name below signatures.

ADDENDUM

PARCEL A:

That part of the Northwest  $\frac{1}{4}$  of Section 22, Town 8 North, Range 21 East, in the City of Milwaukee, County of Milwaukee, State of Wisconsin, bounded and described as follows:

Commencing at a point in the East line of said  $\frac{1}{4}$  Section and 6.18 feet North of the Southeast corner thereof, this being the Northeasterly line of the former Chicago, Milwaukee, St. Paul & Pacific Railroad Right-of-Way; thence Northwesterly along the said Northeasterly Right-of-Way Line 1558.80 feet more or less to a point where said Right-of-Way Line intersects the  $\frac{1}{8}$  line of said  $\frac{1}{4}$  Section; thence Northerly along said  $\frac{1}{8}$  line 129.33 feet to a point, said point being the Southwest corner of the North 51 acres of the East  $\frac{1}{2}$  of said  $\frac{1}{4}$  Section ; thence Easterly along said South line 1331.16 feet more or less to a point in the East line of said  $\frac{1}{4}$  Section ; thence Southerly along the East line of said  $\frac{1}{4}$  Section, 948.47 feet more or less to the beginning.

PARCEL B:

The East  $16\frac{1}{2}$  feet of the West  $\frac{1}{4}$  of the Northwest  $\frac{1}{4}$  of Section 22, Town 8 North, Range 21 East, lying Northerly of the Northeasterly Line of the former Chicago, Milwaukee, St. Paul & Pacific Railroad Right-of-Way, in the City of Milwaukee, County of Milwaukee, State of Wisconsin, except the North 80 feet thereof (as measured at right angles to the North line).

Tax Key No.: 119-9997-110-7

Address: 7003 W. Good Hope Road



DEVELOPMENT, INC.  
220 EAST RYAN ROAD  
OAK CREEK, WISCONSIN 53154  
PHONE: (414) 768-7140  
FAX: (414) 768-7141  
TOLL FREE: 1-800-732-4671

- DENOTES FOUND 1" IRON PIPE
- ⊙ DENOTES SET #6 REBAR 18" LONG
- DENOTES FOUND CONCRETE MONUMENT WITH BRASS CAP

HORIZONTAL DATUM IS BASED ON THE WISCONSIN STATE PLANE COORDINATE SYSTEM GRID, SOUTH ZONE (NAD-27), AND ALL BEARINGS ARE REFERRED TO GRID NORTH. THE NORTH LINE OF THE NORTHWEST 1/4 SECTION 22-8-21 BEARING N 89°33'22" E

C.S.M. NO. 2982

C.S.M. NO. 1714

C.S.M. NO. 3161

WISCONSIN AND SOUTHERN RIGHT-OF-WAY

**PARCEL 1**  
TAX KEY NO. 119-9997-110-7

**PARCEL 2**

TAX KEY NO. 119-9997-110-7

PARCELS OF LAND LOCATED IN THE NORTHWEST 1/4 OF SECTION 22, TOWN 8 NORTH, RANGE 21 EAST.

**PARCEL 1**

COMMENCING AT THE NORTHEAST CORNER OF THE NORTHWEST 1/4 OF SECTION 22, TOWN 8 NORTH, RANGE 21 EAST; THENCE S 89°33'22" W, 1327.84 FEET ALONG THE NORTH LINE OF SAID 1/4 SECTION; THENCE S 00°15'38" E, 1689.69 FEET ALONG THE WEST LINE OF THE EAST 1/2 OF SAID 1/4 SECTION TO THE POINT OF BEGINNING; THENCE N 89°42'48" E, 1329.11 FEET TO A POINT ON THE EAST LINE OF THE NORTHWEST 1/4 OF SAID 1/4 SECTION; THENCE S 00°18'14" E, 948.08 FEET ALONG SAID EAST LINE TO A POINT ON THE NORTH LINE OF THE WISCONSIN AND SOUTHERN RIGHT-OF-WAY; THENCE N 58°39'08" W, 1561.47 FEET ALONG SAID RIGHT-OF-WAY TO A POINT ON THE WEST LINE OF THE EAST 1/2 OF SAID 1/4 SECTION; THENCE N 00°15'38" W, 129.02 FEET ALONG SAID WEST LINE OF THE EAST 1/2 OF SAID 1/4 SECTION TO THE POINT OF BEGINNING.

PARCEL 1 CONTAINING 715,796 sq. ft. OR 16.4 acres.

**PARCEL 2**

COMMENCING AT THE NORTHEAST CORNER OF THE NORTHWEST 1/4 OF SECTION 22, TOWN 8 NORTH, RANGE 21 EAST; THENCE S 89°33'22" W, 1327.84 FEET ALONG THE NORTH LINE OF SAID 1/4 SECTION; THENCE S 00°15'38" E, 80.00 FEET ALONG THE WEST LINE OF THE EAST 1/2 OF SAID 1/4 SECTION TO A POINT ON THE SOUTH RIGHT-OF-WAY LINE OF WEST GOOD HOPE ROAD AND THE POINT OF BEGINNING; THENCE S 00°15'38" E, 1887.73 FEET ALONG SAID WEST LINE OF THE EAST 1/2 OF SAID 1/4 SECTION TO A POINT ON THE WISCONSIN AND SOUTHERN NORTH RIGHT-OF-WAY; THENCE N 58°39'08" W, 19.37 FEET ALONG SAID RIGHT-OF-WAY; THENCE N 00°15'38" W, 1728.80 FEET TO A POINT ON THE SOUTH RIGHT-OF-WAY LINE OF WEST GOOD HOPE ROAD; THENCE N 89°33'22" E, 16.50 FEET ALONG SAID RIGHT-OF-WAY TO THE POINT OF BEGINNING.

PARCEL 2 CONTAINING 28,592 sq.ft. OR 0.6 acres.

I Certify that I have surveyed the above described property (Property), and this map is a true representation thereof and shows the size and location of the Property, its exterior boundaries, the location and dimensions of all visible structures thereon, boundary fences, apparent easements, roadways and encroachments, if any. This survey is made for the exclusive use of the present owners of the Property, and those who purchase, mortgage, or guarantee the title thereto, within one (1) year from date hereof.

PATRICK D. STANKIEWICZ  
Wis. Registered Land Surveyor, S-2583



NORTHWEST CORNER OF SECTION 22-8-21 CONCRETE MONUMENT WITH BRASS CAP

WEST GOOD HOPE ROAD  
N 89°33'22" E 2656.08' (M) 2656.02'(SEWRFC)

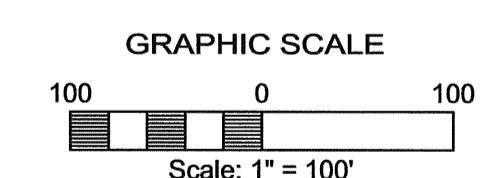
NORTH CORNER OF SECTION 22-8-21 CONCRETE MONUMENT WITH BRASS CAP

SURVEY FOR GOOD LAD LLC  
HENDRICKS REVOCABLE TRUST  
7003 WEST GOOD HOPE ROAD  
MILWAUKEE, WISCONSIN

PLAT OF SURVEY  
NORTHWEST 1/4 OF SECTION 22, TOWN 8 NORTH, RANGE 21 EAST

**FILE COPY**

NO. REVISION    DATE BY



DRAWING NO. N:\Gehringel\Gehringel.DWG
DRAWN BY: P.D.S.
DATE: 10-29-03
PROJECT NO: 1538
CHECKED BY: R.F.S.
APPROVED BY: P.D.S.
SHEET NO.:

**S-1**

1 OF 1 SHEETS

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