

Sent via E-Mail

Ms. Shanna Laube-Anderson
 Wisconsin Department of Natural Resources
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 Waukesha, WI 53188

**SITE ASSESSMENT/INVESTIGATION INFORMATION FOR
 VPLE PROGRAM REVIEW, FORMER EXPRESS CLEANERS SITE,
 3921-3941 N. MAIN STREET, RACINE, WISCONSIN
 BRRTS NO. 02-52-547631, FID NO. 252010000, VPLE NO. 06-52-576325**

Dear Shanna:

On behalf of Ehrlich Limited Partnership, LLC (Ehrlich), Ramboll US Consulting, Inc. (Ramboll) submits the following information requested by the Wisconsin Department of Natural Resources (WDNR) in correspondence dated November 8, 2022, to facilitate review of the site assessment/investigation for completeness under the Voluntary Party Liability Exemption (VPLE) program for the former Express Cleaners Site located at 3921-3941 N. Main Street, Racine, Wisconsin (the "Site"). The items outlined in the November 8, 2022 information request are provided below in *italics* followed by our response. The figures and tables referenced in the responses are included as attachments to this letter.

April 4, 2023

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Information Requested by WDNR and Response

- *Provide figures that include the soil data for perimeter borings located on the north, east, and west boundaries of the contamination area.*

Response: The requested soil data information for the perimeter borings is provided on Figures 1A through 1C. The groundwater sampling results are also included as Figure 1D.

- *Evaluate the data from the perimeter soil and groundwater samples and determine if further sampling is needed to better define the extent of contamination that is impacting the off-site properties.*

Response: As shown on Figures 1A through 1D, the extent of the soil and groundwater impacts are sufficiently defined around the perimeter, including the impacts on the off-site properties to the north, east, and west of the former Express Cleaners Site. Therefore, additional soil and/or groundwater sampling is unnecessary.

- *The cross section that extends east-west should include MW-15 and MW-16 and should show utilities in North Main Street and North Bay Drive. Also extending this cross section to include basements of buildings located to the east and west would support the vapor risk screening assessment.*

Ref. 1690004905

Response: The geologic cross-section has been revised to include the requested items and is included as Figure 2.

- *Provide two cross sections that run north-south, preferably one running from MW-10 to MW-1, to include PZ-1 and MW-4, and one running from MW-7, through MW-12 to MW-11.*

Response: The two geologic-cross section figures have been prepared to include the specified monitoring well/piezometer locations requested by the WDNR and are included as Figure 3 and Figure 4, respectively.

- *All cross sections should include MWs and borings along those lines, utilities, and soil and groundwater data. Include soil RCL lines and groundwater ES/PALs also.*

Response: The geologic cross-section figures have been revised to include the monitoring well/piezometer locations specified by the WDNR and include the applicable utilities, relevant soil and groundwater data, the Wisconsin Administrative Code (WAC) NR 720 soil Residual Contaminant Level (RCL), and WAC NR 140 groundwater Enforcement Standard (ES) exceedance contours.

- *Provide a figure showing the location of the identified potable wells that are noted in the closure form in relation to the subject property. Verify if those wells are still in use. If they have all been abandoned, the text on the closure form should be changed to reflect that information.*

Response: Based on the WDNR’s online Well Construction Report viewer, six portable wells are located within approximately 1,200 feet of the Site. It should be noted that the online Well Construction Report viewer maps the well locations based on the Public Land Survey System (PLSS) Quarter-Quarter Section Centroid, not the actual location. The six wells listed as located within approximately 0.24 miles of the Site are identified by Wisconsin Unique Wells numbers 8HF108 (4219 Erie Street – address no longer exists), 8HF110 (possibly 4126 N. Main Street), 8HF415 (220 Sheffield Drive – address no longer exists), VH717 (3732 Ruby Street), 8HF413 (543 Greenfield Road – address no longer exists), and 8HF414 (2806 Greenfield Avenue – address no longer exists). The location of these wells and the associated parcel locations as depicted in the WDNR online Well Construction Report viewer are presented in Figure 5. For addresses no longer active, the nearest active address/parcel was highlighted.

Inquiries pertaining to potable well information within a ½-mile radius of the Site were submitted to the City of Racine Engineering, City of Racine Water Utility, Racine County Public Works and Development (subsequently forwarded to the Racine County Land & Water Conservation), Village of North Bay, Village of Wind Point Public Works, and the Village of Caledonia Utility Operations. The following potable wells were identified by representatives from the above municipalities and/or municipal departments and are presented in Figure 5:

- 3515 Chatham Street and 3506 Chatham Street, Village of North Bay (approximately 0.42 miles from the Site);
- 545 Cross Creek Road, Village of North Bay (approximately 0.42 miles from the Site);
- 400 Cross Creek Road, Village of North Bay (approximately 0.38 miles from the Site); and
- 4510 Lighthouse Drive, Village of Wind Point (located approximately 1 mile from the Site).

Based on the information provided by the Village of North Bay Wastewater Trustee (Mr. Rick Cermak), the single potable well located at 3515 Chatham Street and 3506 Chatham Street is shared by the

residents of the two properties as a source of potable water. Mr. Cermak indicated that the residences at 3515 and 3506 Chatham Street are not using potable water provided through the City of Racine Water Utility. The potable well located at 545 Cross Creek Road in the Village of North Bay was reportedly used to feed a creek, and per Mr. Cermak, has not been in operation for several years. The potable well located at 400 Cross Creek Road in the Village of North Bay is reportedly used for irrigation. The potable well located at 4510 Lighthouse Drive in the Village of Wind Point is located approximately 1 mile from the Site and was reported by the Village of Wind Point Public Works Director (Mr. Brian Beiley) as being possibly active. Mr. Beiley reported that the well could be used for golf course irrigation but was unable to confirm its intended use. Mr. Beiley also reported that the golf course building itself is connected to the Village water supply system. Based on information provided by the representative personnel from the above municipalities and municipal agencies, all other residences and occupied buildings within the ½-mile radius are provided potable water through the respective municipal utility.

None of the wells identified in the WDNR Well Construction Report viewer were identified as active by the municipalities or their appropriate entity.

Given the location of the potable wells that are still in use within a ½-mile radius of the Site and that the extent of groundwater impacts are defined within the boundaries of the Site, the potable wells identified above are not at risk of being impacted by the residual groundwater chlorinated volatile organic compound (CVOC) contamination located at the former Express Cleaners Site.

- *Data tables for the sub-slab samples should include both Residential and Small Commercial VRSLs and indoor air vapor samples need to include the Residential and Small Commercial VALs.*

Response: The sub-slab vapor analytical results table was revised to include both Residential and Small Commercial Vapor Risk Screening Levels (VRSLs) and the indoor air vapor analytical table was revised to include the Residential and Small Commercial Vapor Action Levels (VALs). Both tables are attached as Table 1 and Table 2, respectively.

- *Evaluate the status of the utilities in North Main Street and North Bay Drive for the potential to be migration pathways and determine if the residences located to the east and west of the subject property could be potential receptors.*

Response: Several utilities are present within the right-of-way of North Main Street and North Bay Drive including natural gas, sanitary sewer, storm sewer, and municipal water. The locations and depth of these off-site utilities are shown on Figure 2. In consideration of evaluating the potential migration pathways along the identified utilities, a set of cross-sections are provided as Figures 2 through 4 and depict the site geology, depth to water table, the extent of the CVOC groundwater impacts where concentrations exceed their respective WAC NR 140 ESs, and the location of potential receptors relative to the site contamination.

The direction of groundwater flow at the Site is toward the east and west, with an apparent groundwater divide along the eastern property boundary of the former Express Cleaners Site. This groundwater flow pattern has been consistent since investigations were initiated in 2007. The depth to groundwater at the Site ranges from approximately 2 feet below ground surface (bgs) (source area well MW-3R) to 9 feet bgs (downgradient monitoring well MW-6 near North Bay Drive). The depth to groundwater in the area near North Main Street (MW-8 and MW-15) ranges from 4 to 6 feet bgs.

In October 2016, the subsurface utilities that serviced the former Express Cleaners building prior to its demolition (natural gas, sanitary sewer, and municipal water) were disconnected, capped at the property boundary along North Main Street and removed before implementing the soil remediation activities. Therefore, no on-site utilities transect the CVOC source area and the backfill for these former utility laterals was treated and subjected to soil blending during the soil remediation in 2016¹. Accordingly, there is no direct contaminant migration pathway from the on-site CVOC source area to the existing utilities located in North Main Street.

The CVOC impacts in groundwater exceeding WAC NR 140 groundwater ESs (*cis*-1,2-dichloroethene [*cis*-1,2-DCE] and vinyl chloride [VC]) extend to the western property boundary along North Main Street. Tetrachloroethylene (PCE) and trichloroethylene (TCE) were not detected in the farthest western downgradient monitoring well on site (MW-8). In addition, no soil or groundwater CVOC impacts have been detected in sentinel well MW-15 located downgradient across North Main Street. Based on the extent of CVOC impacts defined in groundwater on the western side of the Site and considering PCE and TCE are not detected in downgradient monitoring well MW-8, the utilities and the associated utility backfill in North Main Street are not likely to be impacted with CVOCs and PCE/TCE vapor. Therefore, the probability that the utilities in North Main Street are acting as a pathway for contaminant migration is low and does not warrant further investigation.

PCE is detected in groundwater exceeding WAC NR 140 ESs at the farthest eastern downgradient monitoring well on site (MW-6). Concentrations of PCE have been steadily decreasing at MW-6 (14.4 micrograms per liter [$\mu\text{g/L}$] in April 2019 to 7.6 $\mu\text{g/L}$ in October 2020). TCE and *cis*-1,2-DCE have also been detected at MW-6 but concentrations are and have historically been below WAC NR 140 ESs, and VC was below detection levels during the last sampling event in October 2020. No groundwater CVOC impacts have been detected in sentinel well MW-16 located downgradient across North Bay Drive. Based on the extent of CVOC impacts defined in groundwater on the eastern side of the Site and considering PCE is the only CVOC that has been detected in the on-site downgradient monitoring well MW-6 and only slightly above its WAC NR 14 ES, the utilities and the associated utility backfill in North Bay Drive are not likely to contain significant concentrations of CVOCs and/or PCE vapor. Therefore, any contaminant migration that could potentially be occurring within the utilities/utility backfill in North Bay Drive is inconsequential and further investigation of this pathway is not warranted.

In summary, the nearest residences to the east (3933 N. Bay Drive and 226 Steeplechase Drive) and west (3900 N. Main Street) of the former Express Cleaners Site are located at distances of approximately 75 feet, 90 feet, and 165 feet from the defined groundwater CVOC impacts, respectively. Given the status for the utilities to act as migration pathways in North Main Street and North Bay Drive is unlikely, as discussed above, the likelihood for these residences to be or become impacted is very low.

¹ In Fall 2016, the Site underwent active remediation by soil blending of zero valent iron (ZVI) and a carbon source Anaerobic Biochem (ABC[®]) to accomplish reductive de-chlorination and long-term biodegradation of the PCE and its breakdown products. Approximately 2,200 cubic yards of soil was mixed with ZVI and ABC[®] using a high-speed rotary blending machine, resulting in elimination of an estimated 981 pounds of PCE, which is an 89% reduction in PCE within the treatment area. An additional 74 pounds of PCE were removed and disposed off site as part of the soil blending/active remediation process. All utility lines within the areas of soil blending were removed prior to blending to avoid interfering with the blending process.

- A vapor risk screening analysis needs to be performed for the residences located west of North Main Street and east of North Bay Drive. Based on that analysis, determine if vapor sampling is necessary in those buildings.

Response: A vapor risk screening evaluation was conducted in accordance with WDNR guidance *Addressing Vapor Intrusion at Remediation and Redevelopment Sites in Wisconsin* (PUB-RR-800, January 2018). In consideration of evaluating the potential vapor risk, a set of cross-sections and CVOC isoconcentration maps are provided as Figures 1 through 4.

The result of the CVOC vapor screening evaluation is summarized in the following table:

Screening for CVOC Vapors	
CVOC Screening Criteria	Screening Summary/Result
1. Buildings or proposed buildings over or within 100 feet of a CVOC impacted soil	<p>Present – A total of three buildings were identified within 100 feet of the footprint of the soil CVOC plume. These buildings are identified as follows:</p> <p>Private Residences: 226 Steeplechase Drive 3933 North Bay Drive</p> <p>Former Pugh Oil Building: 3953 North Main Street</p> <p>Boring MW-6 (2-4') is to the west approximately 84 feet from the residential property 3933 North Bay Drive footprint and 94 feet from residential property 226 Steeplechase Drive and contains PCE at a laboratory-estimated concentration of 48.0 micrograms per kilogram (µg/kg). Boring B-22 (2-4') is approximately 96 feet from residential property 3933 North Bay Drive footprint and 100 feet from residential property 226 Steeplechase Drive and contains PCE at a concentration of 670 µg/kg. Boring B-20 (2-4') is approximately 99 feet from residential property 226 Steeplechase Drive and contains PCE at a concentration of 104 µg/kg. CVOCs at several boring locations in the northern portions of the Site are within 100 feet of the former Pugh Oil Building. The highest levels of residual contamination in terms of individual CVOC parameter concentrations remain in soil remediation confirmation sample locations CB-07 and CB-08. PCE and TCE were detected at concentrations of 58,500 µg/kg and 1,630 µg/kg, respectively, at CB-07 (2-3') - above their respective WAC NR 720 non-industrial direct contact and groundwater pathway RCLs. <i>Cis</i>-1,2-DCE and VC were detected at concentrations of 4,140 µg/kg and 34.0 J µg/kg, respectively, above their respective WAC NR 720 groundwater pathway RCLs at CB-08 (2-3'). Low-level concentrations of <i>cis</i>-1,2-DCE, TCE, and/or PCE remain at several boring locations above their respective WAC NR 720 groundwater pathway RCL.</p> <p>Not Present – The senior living and assisted living facilities to the west of the Site (3900 N. Main Street) are at distances greater than 100 feet from residual CVOC contamination and are therefore not considered at risk for vapor intrusion.</p>

Screening for CVOC Vapors	
CVOC Screening Criteria	Screening Summary/Result
2. Buildings or proposed buildings overlie groundwater with a CVOC concentration above WAC NR 140 ES at the water table	Not Present – There are no buildings constructed within the footprint of the groundwater CVOC plume where concentrations are above WAC NR 140 ES at the water table. Groundwater CVOC impacts above the WAC NR 140 ES are defined on site and do not extend onto adjacent properties with residential dwellings/occupied buildings.
3. Groundwater with a CVOC concentration above the WAC NR 140 Preventive Action Limit (PAL) has entered the building or is in contact with the building's foundation	Not Present – As noted, there are no buildings on the Site. Groundwater CVOC impacts are defined at the farthest off-site downgradient monitoring wells and are less than WAC NR 140 PALs. Based on historic depth to groundwater measurements and extent of CVOC contamination, impacted groundwater is not likely to be in contact with any of the building foundations at the adjacent properties.
4. Utility lines that transect a CVOC source area	Not Present – Sub-surface utilities at the Site were abandoned in preparation for the Fall 2016 soil remedial activities. No sub-surface utilities are known to remain at the Site. The response to the previous bullet comment/request above discusses details about the existing off-site subsurface utilities located adjacent to the Site and the potential for these utilities to act as contaminant migration pathways/risk for vapor intrusion to nearby residences.

Given that sub-slab vapor CVOC concentrations at the former Pugh Oil building (located north of the Site) are below their respective VRSLs and that this building is within 100 feet of the source area where CVOC concentrations remain above RCLs, it is not likely that the residual soil impacts containing low-level concentrations of PCE and/or CVOCs nearest to the off-site residential buildings present any vapor risk. Furthermore, no buildings are present within the footprint of the groundwater CVOC plume where concentrations are above the WAC NR 140 ES at the water table. Based on this vapor intrusion screening assessment, vapor sampling is not warranted in any of the adjacent off-site residential buildings.

If you have questions about any of the information discussed, please do not hesitate to contact us.

Sincerely,



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cc: William P. Scott, Attorney At Law, Inc.

TABLES

Table 1. Vapor Analytical Table
Former Pugh Oil Building Sub-Slab Vapor Sample Results
 3953 North Main Street
 Racine, Wisconsin

VOCs ($\mu\text{g}/\text{m}^3$)	Wisconsin Sub-Slab Vapor Risk Screening Levels ($\mu\text{g}/\text{m}^3$) ¹		SS-VP-1		SS-VP-2	
	Residential (AF = 0.03)	Small Commercial (AF = 0.03)	9/22/2016	5/21/2021	9/22/2016	5/21/2021
cis-1,2-Dichloroethene	1,400	5,800	3.0	<0.28	<0.40	<0.30
trans-1,2-Dichloroethene	1,400	5,800	<0.60	<0.25	<0.62	<0.26
Tetrachloroethene	1,400	5,800	298	163	6,440 A, B	1,190
Trichloroethene	70	290	11.1	5.2	3.2	1.7
Vinyl chloride	56	930	<0.30	<0.13	<0.31	<0.13

Notes:

$\mu\text{g}/\text{m}^3$ = Microgram per cubic meter

¹ Wisconsin Vapor Risk Screening Levels (VRSLs) based on November 2022 USEPA Regional Screening Level (RSL) Tables

Bold = Exceeds Wisconsin Screening Level

A = Exceeds Wisconsin Residential Sub-Slab Vapor Risk Screening Level

B = Exceeds Wisconsin Small Commercial Sub-Slab Vapor Risk Screening Level

Table 2. Vapor Analytical Table
Former Pugh Oil Building¹ Indoor Air Analytical Results
 3953 North Main Street
 Racine, Wisconsin

Parameters	OSHA Permissible Exposure Limits (PELs)	Wisconsin Vapor Action Levels ($\mu\text{g}/\text{m}^3$) ^A		IA-1 ^B	IA-2 ^C
		Residential (AF = 0.03)	Small Commercial (AF = 0.03)	Express Cleaners 10/18/2016	Auto Repair Garage 10/18/2016
Analyte ($\mu\text{g}/\text{m}^3$)					
Dichloroethylene, 1,2-cis-	790,000	42	180	<0.34	<0.40
Dichloroethylene, 1,2-trans-	790,000	42	180	<0.53	<0.62
Tetrachloroethylene	670,000	42	180	0.79 J	2.4
Trichloroethylene	535,000	2.1	8.8	3.9 A	0.47 J
Vinyl Chloride	2,560	1.7	28	<0.27	<0.31

Notes:

¹ = The former Pugh Oil building is an active dry cleaning facility (also called Express Cleaners), which occupies the western one-half of the building. The eastern one-half of the former Pugh Oil building is occupied as an auto repair garage.

Indoor air samples collected utilizing a 6 Liter summa canister regulated over 8 hours.

Permissible Exposure Limits (PELs) are based on an 8-hour Time Weighted Average (TWA).

Indoor Air Vapor Action Levels are based on Residential and Small Commercial use classification.

$\mu\text{g}/\text{m}^3$ = Microgram per cubic meter

-- No standard established.

^A = Indoor Air Vapor Levels are based on November 2022 USEPA Regional Screening Level Tables.

^B = Indoor Air results for Express Cleaners are compared to OSHA Permissible Exposure Limits due to existing dry cleaning operations.

^C = Indoor Air results for Auto Repair Garage are compared to WDNR Indoor Air Vapor Action Levels.

Bold = Exceeds Wisconsin Action Level

A = Exceeds Residential VAL

J = Estimated concentration at or above the Limit of Detection (LOD) and below the Limit of Quantitation (LOQ).

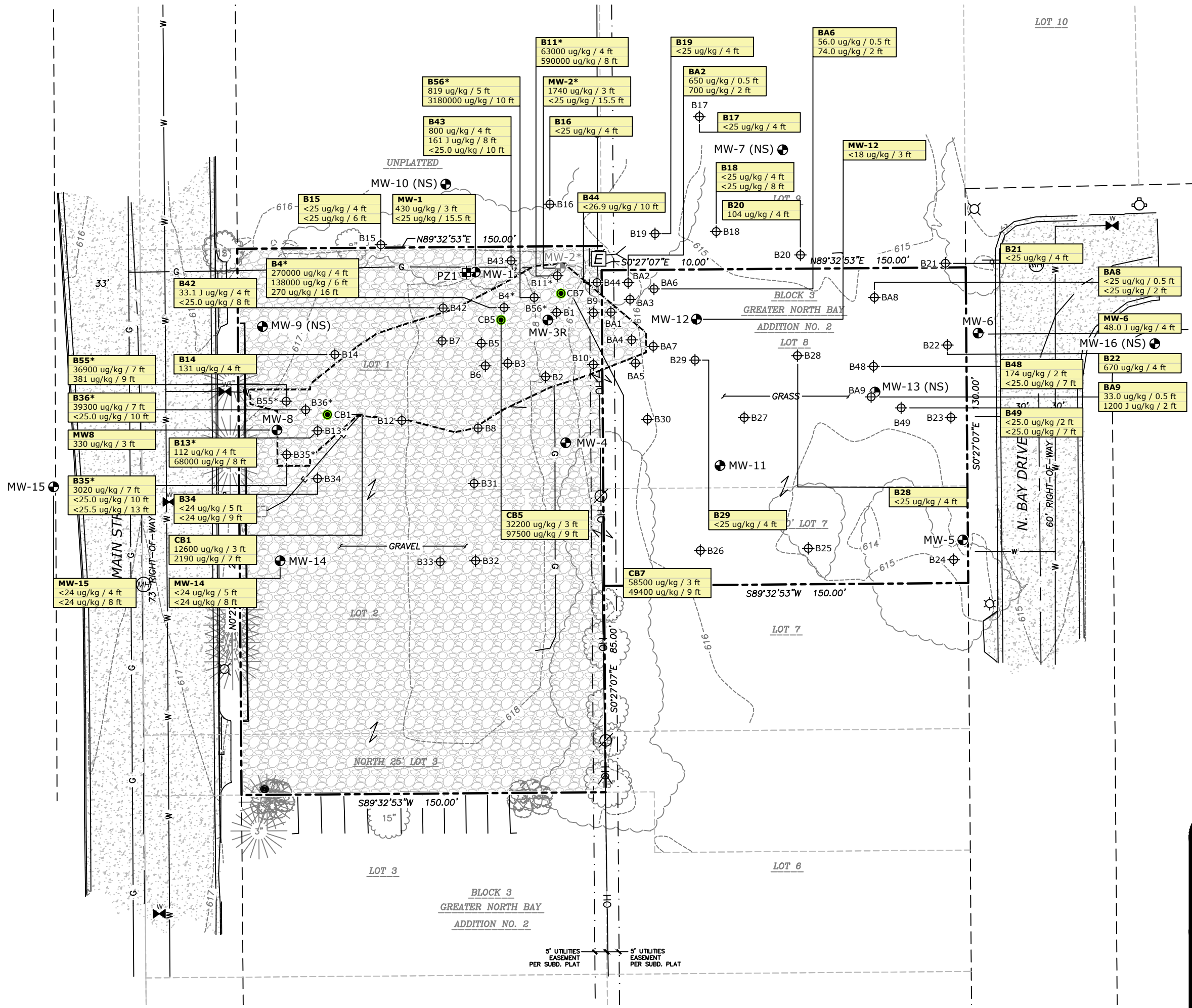
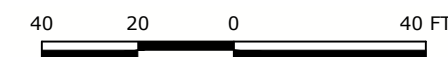
FIGURES

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- LEGEND**
- PROPERTY BOUNDARY
 - ⊕ EXISTING MONITORING WELL
 - ⊕ ABANDONED MONITORING WELL
 - ⊕ PIEZOMETER
 - ⊕ SOIL BORING
 - POST-TREATMENT SOIL SAMPLING LOCATION (MARCH 2017)
 - ⊕ WATER VALVE
 - ⊕ MANHOLE - UNVERIFIED TYPE
 - ⊕ ELECTRIC PEDESTAL
 - ⊕ LIGHT POLE
 - ⊕ POWER POLE W/GUY
 - ⊕ YARD LIGHT
 - ⊕ DECIDUOUS TREE
 - ⊕ CONIFEROUS TREE
 - ⊕ BUSH
 - PLATTED LOT LINE
 - EASEMENT LINE
 - CENTERLINE
 - RIGHT-OF-WAY LINE
 - G NATURAL GAS
 - W WATER LINE
 - OH OVERHEAD LINE
 - E UNDERGROUND ELECTRIC
 - SAN SANITARY SEWER
 - GRAVEL
 - CONCRETE PAVEMENT
 - SOIL TREATMENT BOUNDARY
- NS = NOT SAMPLED/NO SOIL DATA AVAILABLE.
 * - DENOTES THAT REPORTED SOIL DATA IS A PRE-REMEDATION SAMPLE CONCENTRATION AND IS NOT REPRESENTATIVE OF CURRENT CONDITIONS

Parameter	Soil RCLs	
	Non-Industrial Direct Contact	Groundwater Pathway
Tetrachloroethene	33,000	4.54



EXTENT OF SOIL PCE IMPACTS
 FORMER EXPRESS CLEANERS
 RACINE, WISCONSIN



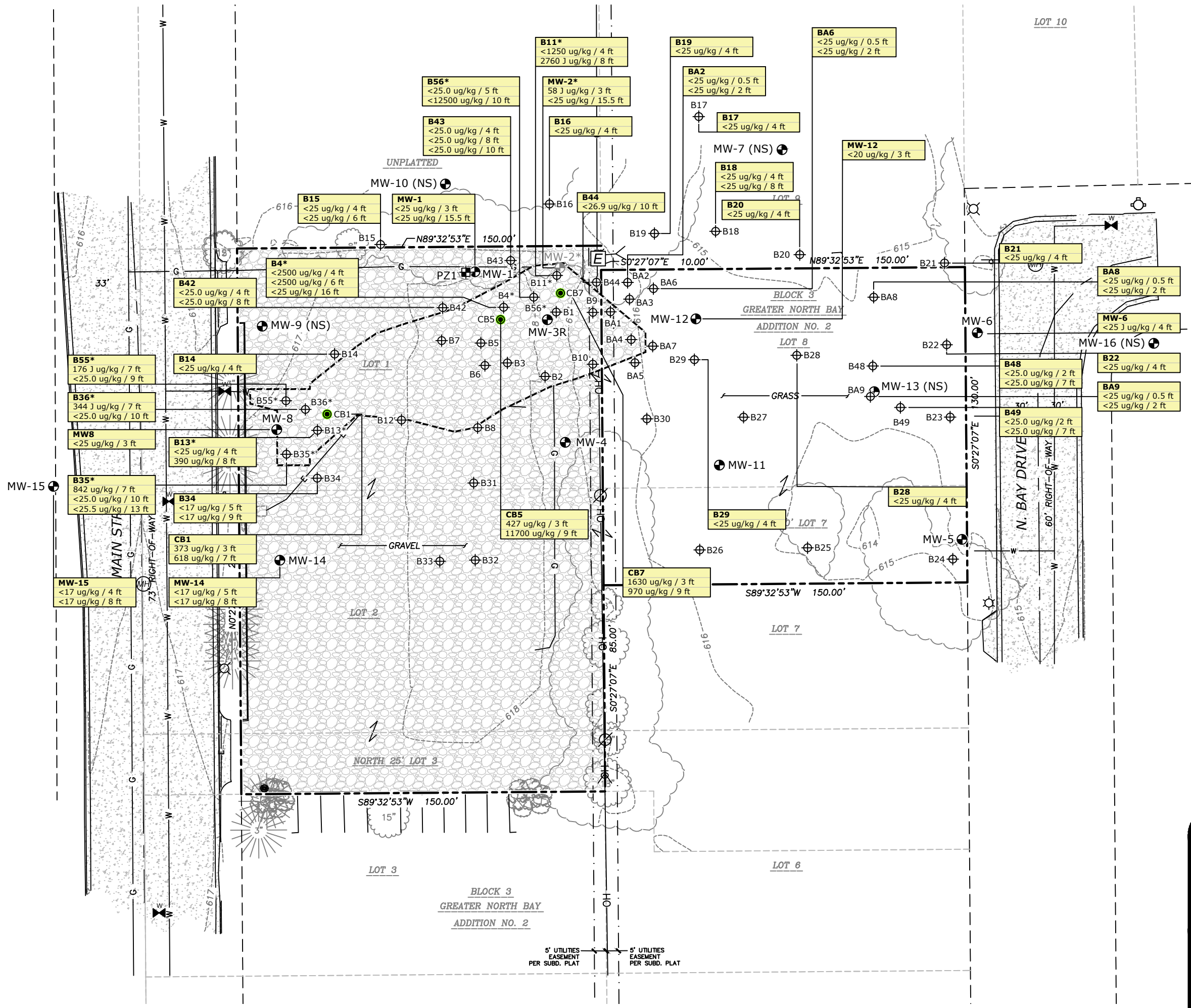
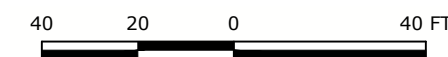
FIGURE
1A



- LEGEND**
- PROPERTY BOUNDARY
 - ⊕ EXISTING MONITORING WELL
 - ⊕ ABANDONED MONITORING WELL
 - ⊕ PIEZOMETER
 - ⊕ SOIL BORING
 - POST-TREATMENT SOIL SAMPLING LOCATION (MARCH 2017)
 - ⊕ WATER VALVE
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 - SOIL TREATMENT BOUNDARY

NS = NOT SAMPLED/NO SOIL DATA AVAILABLE.
 * - DENOTES THAT REPORTED SOIL DATA IS A PRE-REMEDATION SAMPLE CONCENTRATION AND IS NOT REPRESENTATIVE OF CURRENT CONDITIONS

Parameter	Soil RCLs	
	Non-Industrial Direct Contact	Groundwater Pathway
Trichloroethene	1,300	3.6



EXTENT OF SOIL TCE IMPACTS
 FORMER EXPRESS CLEANERS
 RACINE, WISCONSIN



FIGURE
1B

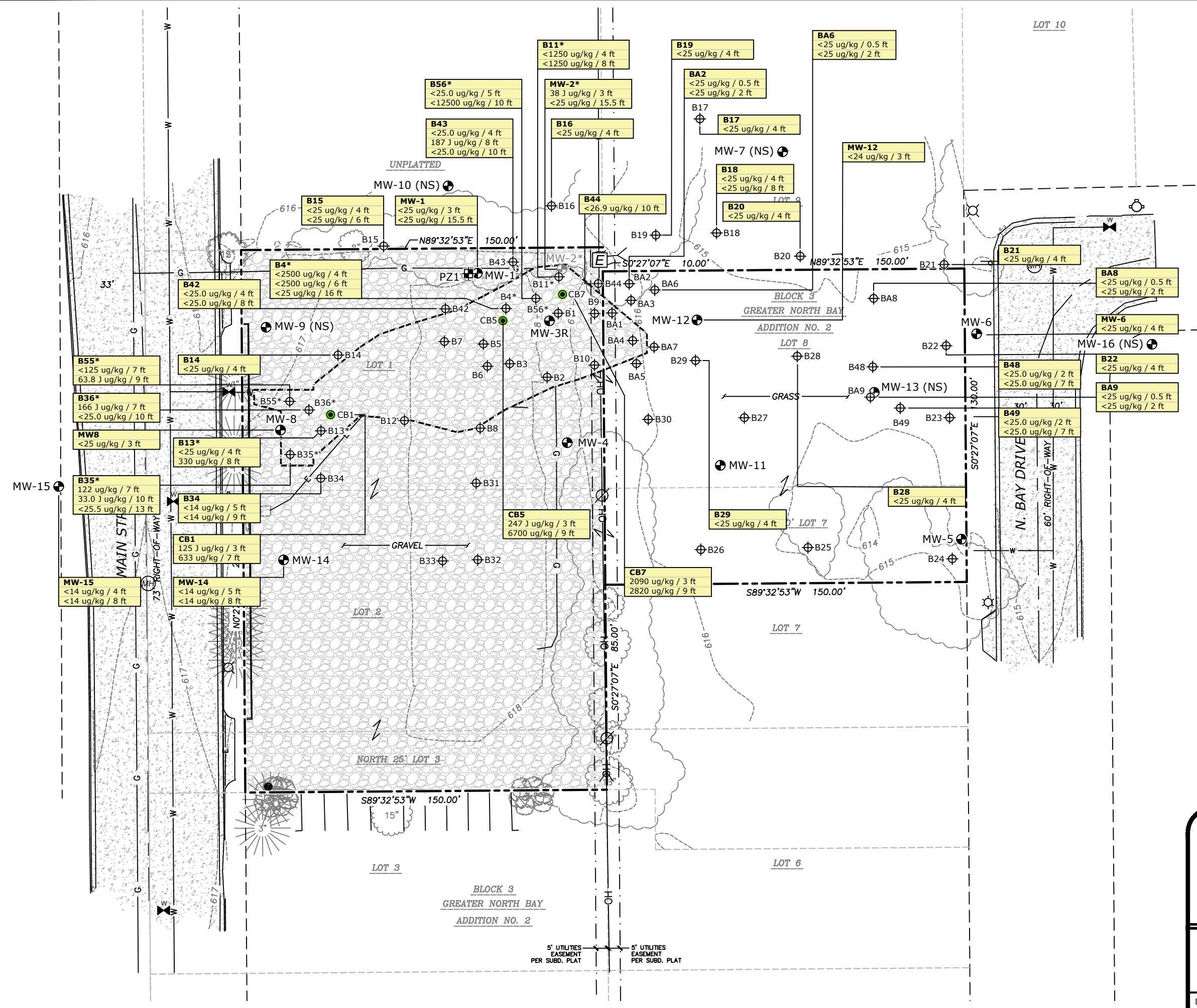
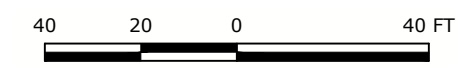
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- LEGEND**
- PROPERTY BOUNDARY
 - ⊕ EXISTING MONITORING WELL
 - ⊕ ABANDONED MONITORING WELL
 - ⊕ PIEZOMETER
 - ⊕ SOIL BORING
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 - SOIL TREATMENT BOUNDARY

NS = NOT SAMPLED/NO SOIL DATA AVAILABLE.
 * - DENOTES THAT REPORTED SOIL DATA IS A PRE-REMEDATION SAMPLE CONCENTRATION AND IS NOT REPRESENTATIVE OF CURRENT CONDITIONS

Parameter	Soil RCLs	
	Non-Industrial Direct Contact	Groundwater Pathway
ug/kg		
cis-1,2-Dichloroethene	156,000	41.2



EXTENT OF SOIL CIS-1,2-DCE IMPACTS
 FORMER EXPRESS CLEANERS
 RACINE, WISCONSIN



FIGURE
1C

PZ-1	Pre-Remedial Action	DATE:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC
		09/2016	5.7	ND	ND	ND	ND
Post-Remedial Action	04/2017	NS	NS	NS	NS	NS	
	10/2017	0.76 J	ND	ND	ND	ND	
	04/2018	0.57 J	ND	ND	ND	ND	
	10/2018	0.93 J	ND	1.2	ND	ND	
	4/2019	0.70 J	ND	0.64 J	ND	ND	
	10/2019	0.90 J	0.28 J	4.2	ND	ND	
	4/2020	0.65 J	ND	2.3	ND	ND	
	10/2020	0.89 J	0.33 J	7.5	0.56 J	ND	

MW-3/3R	Pre-Remedial Action	DATE:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC
		09/2016	437	34.5	175	9.4 J	ND
Post-Remedial Action	04/2017	ND	23.3	1,620	ND	11.1 J	
	10/2017	ND	ND	6,060	20.6 J	49.9 J	
	04/2018	ND	ND	3,850	ND	48.5 J	
	10/2018	ND	ND	3,290	ND	24.6 J	
	4/2019	ND	ND	2,340	ND	26.5 J	
	10/2019	ND	ND	1,650	ND	15.4 J	
	4/2020	ND	ND	1,150	ND	18.5	
	10/2020	ND	ND	1,500	ND	15.5	

MW-12	Pre-Remedial Action	DATE:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC
		09/2016	25.7	2.5	92.8	5.0	ND
Post-Remedial Action	04/2017	36.0	2.6	41.5	2.1	ND	
	10/2017	69.5	7.6	76.2	3.2	ND	
	04/2018	70.2	3.0	31.2	1.1	ND	
	10/2018	31.0	4.0	34.2	1.6 J	ND	
	4/2019	ND	ND	ND	ND	ND	
	10/2019	24.1	2.5	25.9	ND	ND	
	4/2020	20.0	1.2	5.5	ND	ND	
	10/2020	14.2	1.9	34.9	1.4 J	ND	

MW-10	Pre-Remedial Action	DATE:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC
		01/2008	ND	ND	ND	ND	ND
04/2011	ND	ND	ND	ND	ND		
09/2016	ND	ND	ND	ND	ND		

MW-7	Pre-Remedial Action	DATE:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC
		01/2008	ND	ND	ND	ND	ND
04/2011	ND	ND	ND	ND	ND		
09/2016	ND	ND	ND	ND	ND		

MW-8	Pre-Remedial Action	DATE:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC
		09/2016	920	39.9	71.4	4.9 J	ND
Post-Remedial Action	04/2017	49	371	173	10	0.69 J	
	10/2017	ND	ND	866	16.8	ND	
	04/2018	ND	ND	761	15.3	2.3 J	
	10/2018	ND	ND	1,300	25.4 J	4.4 J	
	4/2019	ND	ND	1,040	21.5 J	3.8 J	
	10/2019	ND	ND	228	15.1	2.7	
	4/2020	ND	ND	820	23.1	3.3 J	
	10/2020	ND	ND	930	24.5	3.5 J	

MW-6	Pre-Remedial Action	DATE:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC
		09/2016	7.8	2.9	4.5	0.53 J	ND
Post-Remedial Action	04/2017	14.9	2.7	2.2	ND	ND	
	10/2017	9.3	2.9	3.2	0.73 J	ND	
	04/2018	8.1	2.6	1.3	ND	ND	
	10/2018	15.4	3.8	9.2	ND	ND	
	4/2019	14.4	4.2	12.3	ND	0.22 J	
	10/2019	13.1	4.8	18.5	ND	ND	
	4/2020	11.3	4.1	15.3	0.74 J	0.89 J	
	10/2020	7.6	3.6	11.1	0.67 J	ND	

MW-15	Pre-Remedial Action	DATE:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC
		09/2016	ND	ND	ND	ND	ND
Post-Remedial Action	04/2017	ND	ND	ND	ND	ND	
	10/2017	ND	ND	ND	ND	ND	
	04/2018	ND	ND	ND	ND	ND	
	10/2018	ND	ND	ND	ND	ND	
	4/2019	ND	ND	ND	ND	ND	
	10/2019	ND	ND	ND	ND	ND	
	4/2020	ND	ND	ND	ND	ND	
	10/2020	ND	ND	ND	ND	ND	

MW-9	Pre-Remedial Action	DATE:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC
		09/2016	0.88 J	ND	ND	ND	ND
Post-Remedial Action	04/2017	4.9	ND	ND	ND	ND	
	04/2017 (DUP)	5.4	ND	ND	ND	ND	
	10/2017	4.2	ND	ND	ND	ND	
	10/2017 (DUP)	5.2	ND	ND	ND	ND	
	04/2018	2.6	ND	32.4	ND	ND	
	04/2018 (DUP)	2.8	ND	36.0	ND	ND	
	10/2018	5.7	0.49 J	387	3.7	ND	
	4/2019	2.6	0.59 J	53.7	ND	1.3	
	4/2019 (DUP)	2.8	0.64 J	52.1	ND	1.2	
	10/2019	10.9	10.9	612	12.2 J	9.0 J	
	10/2019 (DUP)	10.9	11.5	629	11.3	9.9	
	4/2020	6.9	7.3	156	4.3	0.24 J	
	4/2020 (DUP)	6.9	7.3	153	4.1	0.25 J	
	10/2020	3.3	1.1	46.2	1.2 J	ND	
	10/2020 (DUP)	3.2	1.1	44.7	1.2 J	ND	

MW-13	Pre-Remedial Action	DATE:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC
		09/2016	ND	ND	4.7	0.56 J	ND
Post-Remedial Action	04/2017	0.53 J	ND	ND	ND	ND	
	10/2017	ND	ND	4.2	0.52 J	ND	
	04/2018	ND	ND	1.1	ND	ND	
	10/2018	0.39 J	ND	2.9	ND	ND	
	4/2019	ND	ND	6.7	ND	ND	
	10/2019	0.34 J	ND	11.0	ND	ND	
	4/2020	ND	ND	4.1	0.50 J	0.55 J	
	10/2020	ND	ND	26.3	2.3	0.79 J	

MW-1	Pre-Remedial Action	DATE:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC
		09/2016	193	15.5	96.3	5.1	ND
Post-Remedial Action	04/2017	98.6	384	39.4	3.0	ND	
	10/2017	86.0	138	5,670	47.7 J	ND	
	10/2017 (DUP)	96.7	166	5,550	38.1 J	ND	
	04/2018	192	42.2	9,730	147	127	
	04/2018 (DUP)	283	55.9	8,990	147	108	
	10/2018	9.2	16.8	28,700	594 J	3,770	
	4/2019	185	83.4	4,120	124 J	174	
	10/2019	58.1	55.5	3,150	73.9 J	367	
	4/2020	127	78.9	367	16.9	370	
	10/2020	3.6 J	8.4	1,050	47.9	1,520	

LOT 10

LOT 9

LOT 8

LOT 7

LOT 1

LOT 2

BLOCK 3
GREATER NORTH BAY
ADDITION NO. 2



LEGEND

- PROPERTY BOUNDARY
- ⊕ EXISTING MONITORING WELL
- ⊕ PIEZOMETER
- ☉ DECIDUOUS TREE
- ☉ CONIFEROUS TREE
- ☉ BUSH
- - - PLATTED LOT LINE
- - - EASEMENT LINE
- CENTERLINE
- - - RIGHT-OF-WAY LINE
- GRAVEL
- CONCRETE PAVEMENT
- - - SOIL TREATMENT AREA BOUNDARY

Parameter (VOCs)	Abbreviations	Unit	Enforcement Standard
Tetrachloroethene	PCE	µg/L	5
Trichloroethene	TCE	µg/L	5
cis-1,2-Dichloroethene	cis-1,2-DCE	µg/L	70
trans-1,2-Dichloroethene	trans-1,2-DCE	µg/L	100
Vinyl Chloride	VC	µg/L	0.2

ND = NOT DETECTED
J = DETECTED, BUT BELOW QUANTITATION LIMIT; ESTIMATED VALUE
NS = NOT SAMPLED
NI = NOT INSTALLED

BOLD FONT = PARAMETER EXCEEDS ACTION LEVEL

LEGAL DESCRIPTION

ALL OF LOTS 1 AND 2, THE NORTH 25 FEET OF LOT 3, THE NORTH 40 FEET OF LOT 7, AND ALL OF LOT 8, GREATER NORTH BAY ADDITION NO. 2.

TAX KEY NOS: 276-00-00-04-690-001 AND 276-00-00-04-690-024.

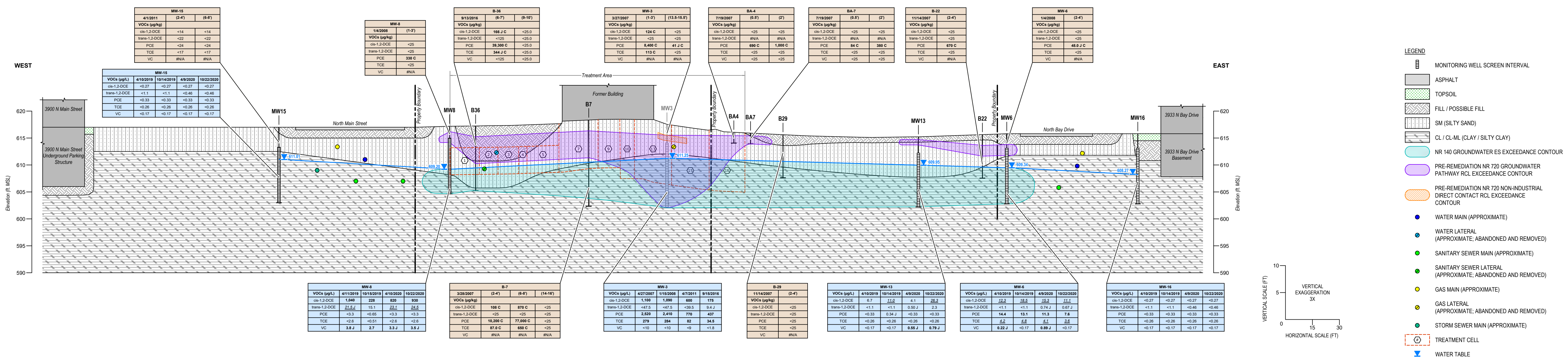


GROUNDWATER VOC ANALYTICAL RESULTS
FORMER EXPRESS CLEANERS
RACINE, WISCONSIN



FIGURE
1D

PROJECT: 180000005 DATED: 2/10/2023 DESIGNER: APH/MLW
 L:\007\Proj\FH_CAD\180000005_MLW\Drawings\DWG\180000005_GEOLOGIC_CROSS_SECTION.dwg

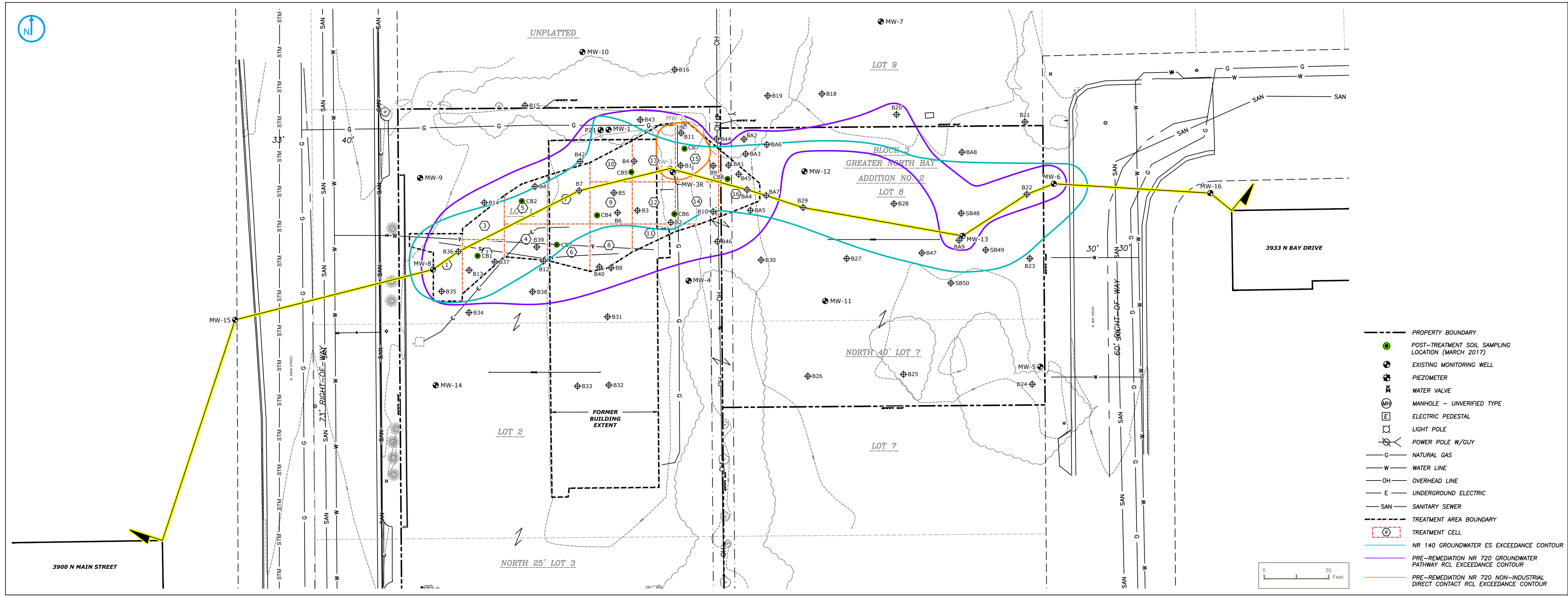


- LEGEND**
- MONITORING WELL SCREEN INTERVAL
 - ASPHALT
 - TOPSOIL
 - FILL / POSSIBLE FILL
 - SM (SILTY SAND)
 - CL / CL-ML (CLAY / SILTY CLAY)
 - NR 140 GROUNDWATER ES EXCEEDANCE CONTOUR
 - PRE-REMEDIATION NR 720 GROUNDWATER PATHWAY RCL EXCEEDANCE CONTOUR
 - PRE-REMEDIATION NR 720 NON-INDUSTRIAL DIRECT CONTACT RCL EXCEEDANCE CONTOUR
 - WATER MAIN (APPROXIMATE)
 - WATER LATERAL (APPROXIMATE, ABANDONED AND REMOVED)
 - SANITARY SEWER MAIN (APPROXIMATE)
 - SANITARY SEWER LATERAL (APPROXIMATE, ABANDONED AND REMOVED)
 - GAS MAIN (APPROXIMATE)
 - GAS LATERAL (APPROXIMATE, ABANDONED AND REMOVED)
 - STORM SEWER MAIN (APPROXIMATE)
 - TREATMENT CELL
 - WATER TABLE

- NOTES**
- The lithology for soil borings completed within the extent of the treatment area reflect site conditions prior to soil mixing/treatment.
 - Lithology information for MW-3 used for cross-section. October 2020 groundwater elevation for replacement well MW-3R displayed.
 - Approximate utility depths are based on information provided in the Additional Information Report prepared by Northern Environmental Technologies, Inc. dated January 14, 2009. In preparation for the remedial activities, utilities located within the extent of the treatment area were removed and disposed as construction debris by RLP Diversified Inc. (Burlington, Wisconsin). Right-of-way utility information also provided by the City of Racine Engineering Department and City of Racine Water Utility via email communication in December 2022 and January 2023, and from the Racine MAPS Staff GIS Portal.
 - To facilitate the near surface soil stabilization during post-treatment site restoration, excess soils to a depth of 1 foot bgs were removed. A total of 530.32 tons of excess soils were disposed of off-site at Waste Management's Metro Recycling and Disposal Facility on November 22 and 23, 2016. As excess soils were hauled off site, the soil treatment area was stabilized at the surface by placing a Geotextile Geonet Geocomposite (TENAX TN 450 or equivalent laminated geonet with geotextile) over the treatment area. Eight inches of No. 2 stone (1 1/2" to 2 1/2") were placed on the geocomposite, followed by 4 inches of No. 56 stone (1" to 3/8"). The finished surface of the treatment area was uniform with the surrounding property elevation and graded to create positive surface water runoff and to prevent erosion of final stone aggregate surface. All uneven surfaces around the treatment area were also graded, and the final surface of the area surrounding the treatment area was finished with stone aggregate encountered beneath the former asphalt pavement. Post-treatment site restoration and excess soil management is fully described in the October 2017 Soil Remedial Action Completion Report.
 - Average residential basement depth estimated at 7 feet bgs to 8 feet bgs. A basement depth of 8 feet bgs was used for the residential property (3933 N Bay Drive) included in the cross-section.
 - Average multi-residential parking garage depth estimated at 10 feet bgs to 11 feet bgs. A parking garage depth of 11 feet bgs was used for the multi-residential property (3900 N Main Street) included in the cross-section.

- GROUNDWATER ANALYTICAL NOTES:**
- Groundwater analytical results are displayed only for VOCs exceeding NR 140 standards.
- VOCs = Volatile Organic Compounds.
- ug/L = micrograms per Liter.
- ES = Enforcement Standard.
- PAL = Preventive Action Limit.
- Bold value** = NR 140 ES Exceedance.
- Italic Value* = NR 140 PAL Exceedance.
- = No NR 140 ES or PAL established.
- #N/A = Not analyzed.
- J = Estimated concentration. Laboratory results reported between the method detection limit and limit of quantification.
- *MW-2 and MW-3 were abandoned in October 2016. Replacement well MW-3R was installed in March 2017 following soil treatment. The most recent groundwater sampling event was conducted on October 22, 2020.

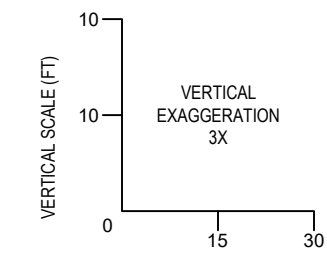
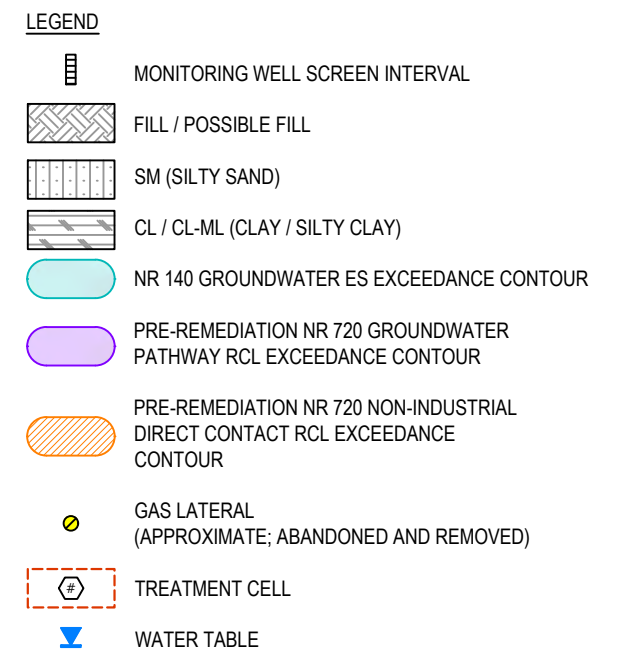
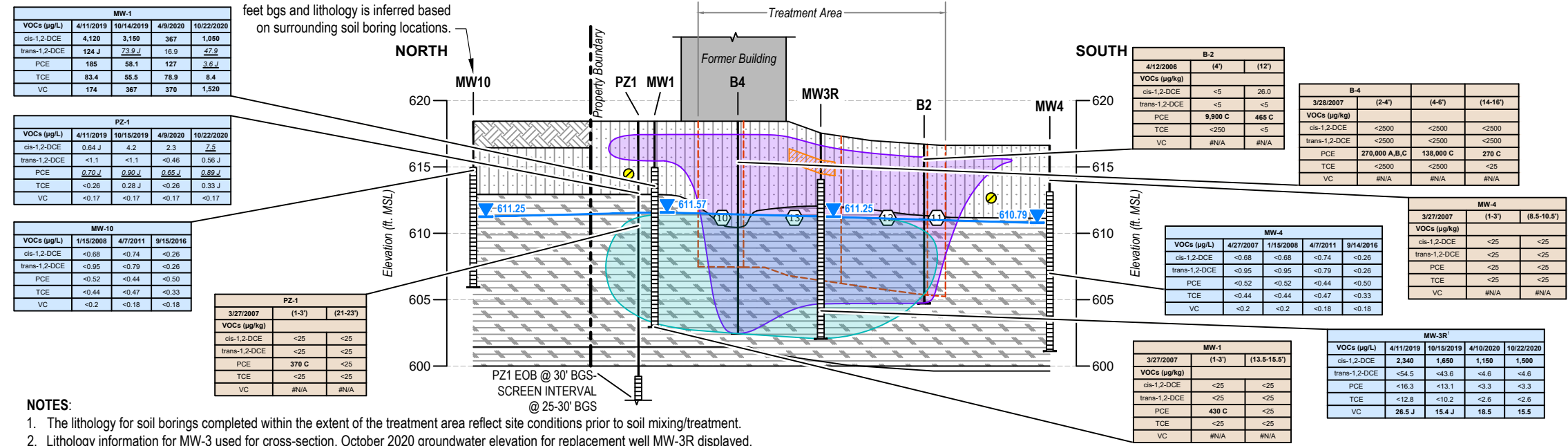
- SOIL ANALYTICAL NOTES:**
- Soil analytical results are displayed only for VOCs exceeding one or more NR 720 RCLs.
- VOCs = Volatile Organic Compounds.
- RCL = Residual Contaminant Level.
- BTW = Background Threshold Value.
- ug/kg = micrograms per kilogram.
- A** Parameter exceeds NR 720 Residual Contaminant Level (RCL) for Non-Industrial Direct Contact.
- B** Parameter exceeds NR 720 RCL for Industrial Direct Contact.
- C** Parameter exceeds NR 720 RCL for Groundwater Pathway.
- J** Estimated concentration at or above the Limit of Detection (LOD) and below the Limit of Quantification (LOQ).
- = No RCL or Surficial BTV established.
- #N/A = Not analyzed.
- Soil RCLs and surficial BTVs established by the WDNR RR program using the EPA's RSL web-calculator with WAC NR 720 default parameters (WDNR PUB-RR-850, June 2014 - updated RCL spreadsheet, December 2018).



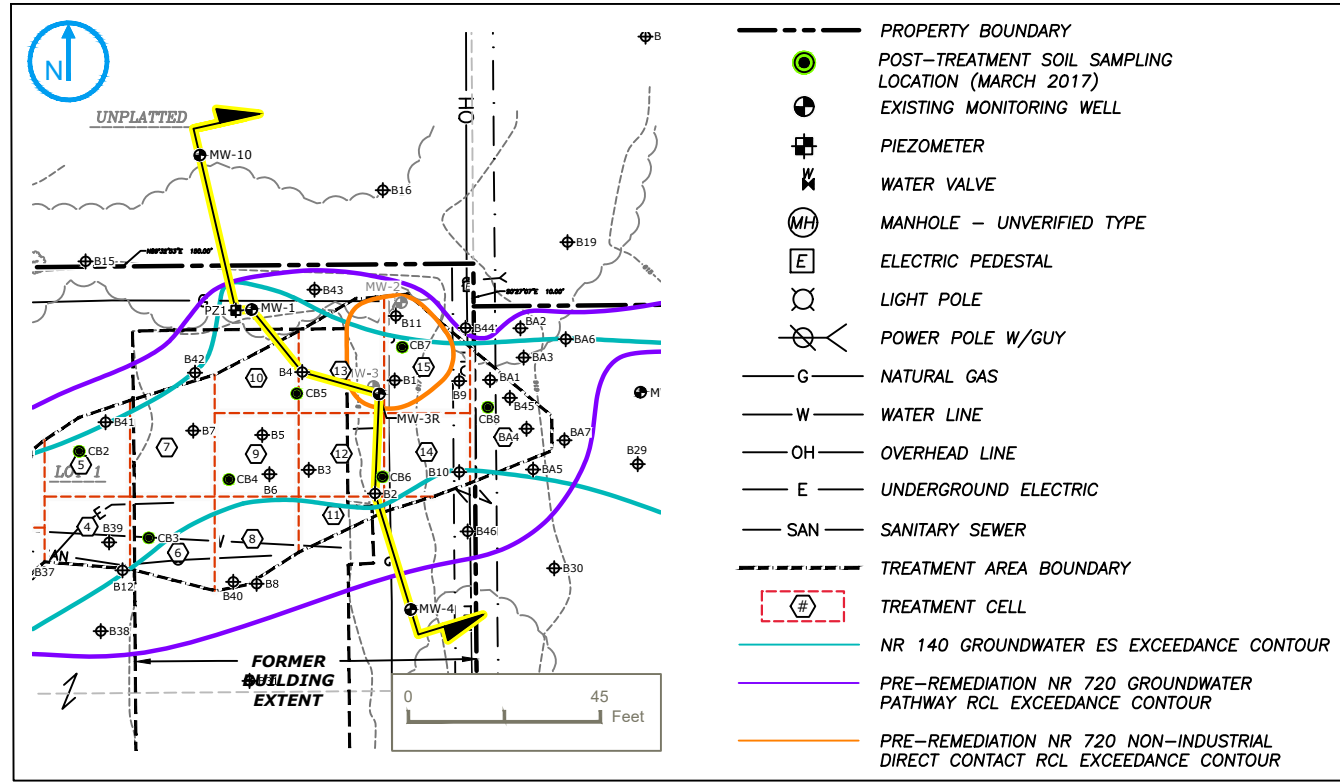
GEOLOGIC CROSS-SECTION

FIGURE 2

NOTE: MW-10 was blind drilled to 12.5 feet bgs and lithology is inferred based on surrounding soil boring locations.



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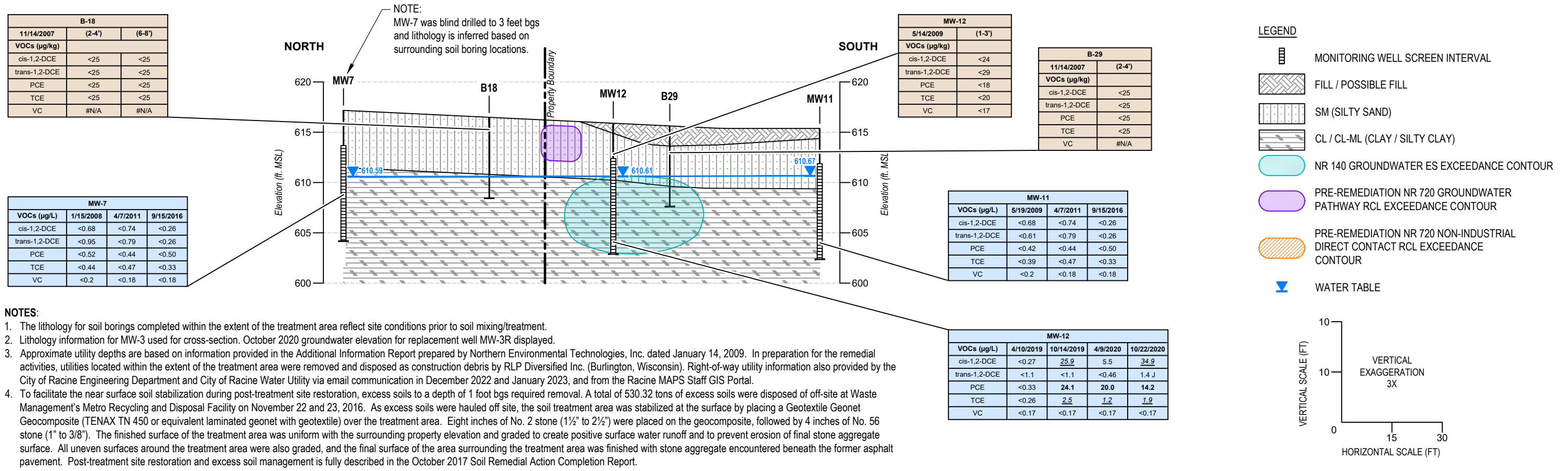


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SOIL ANALYTICAL NOTES:
Soil analytical results are displayed only for VOCs exceeding one or more NR 720 RCLs. VOCs = Volatile Organic Compounds. RCL = Residual Contaminant Level. BTV = Background Threshold Value. µg/kg = micrograms per kilogram. **A** Parameter exceeds NR 720 Residual Contaminant Level (RCL) for Non-Industrial Direct Contact. **B** Parameter exceeds NR 720 RCL for Industrial Direct Contact. **C** Parameter exceeds NR 720 RCL for Groundwater Pathway. J Estimated concentration at or above the Limit of Detection (LOD) and below the Limit of Quantification (LOQ) -- = No RCL or Surficial BTV established. #N/A = Not analyzed. Soil RCLs and surficial BTVs established by the WDNR RR program using the EPA's RSL web-calculator with WAC NR 720 default parameters (WDNR PUB-RR-890, June 2014 - updated RCL spreadsheet, December 2018).

GEOLOGIC CROSS-SECTION

FIGURE 3

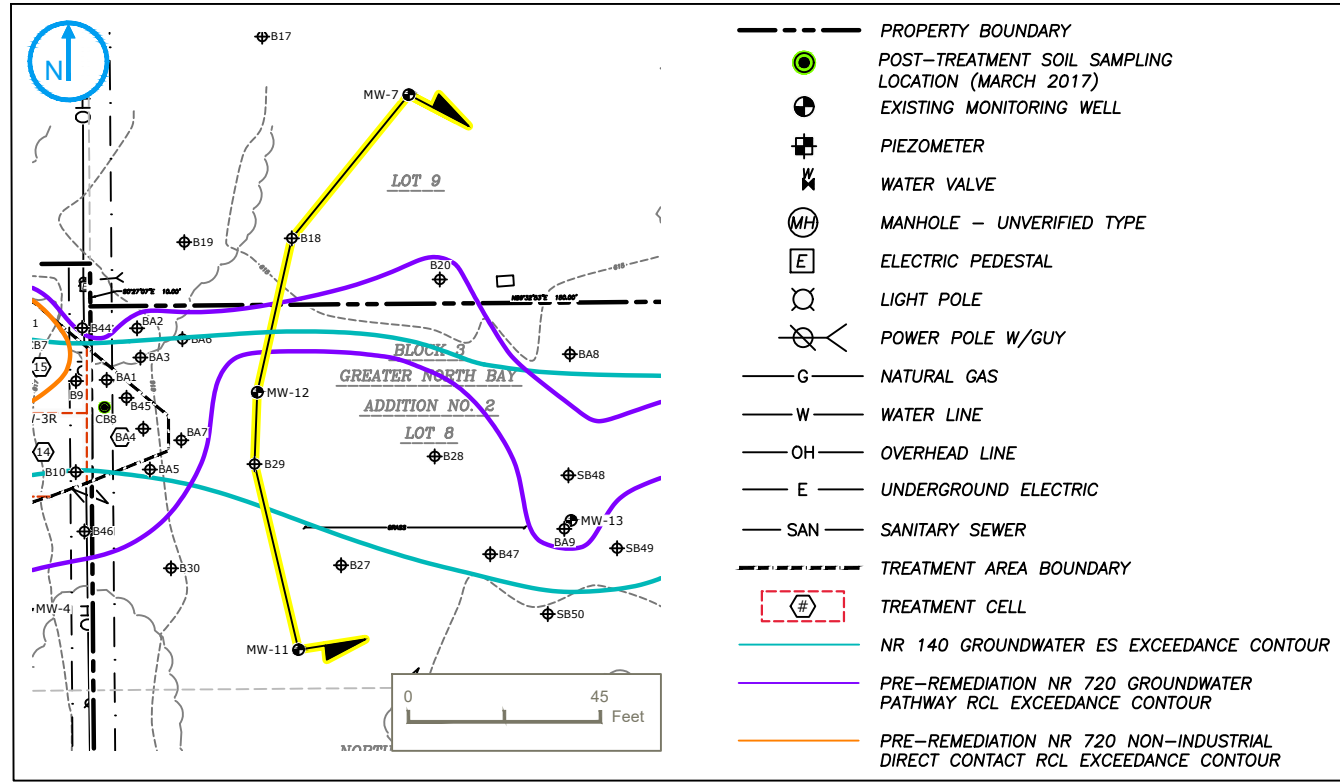


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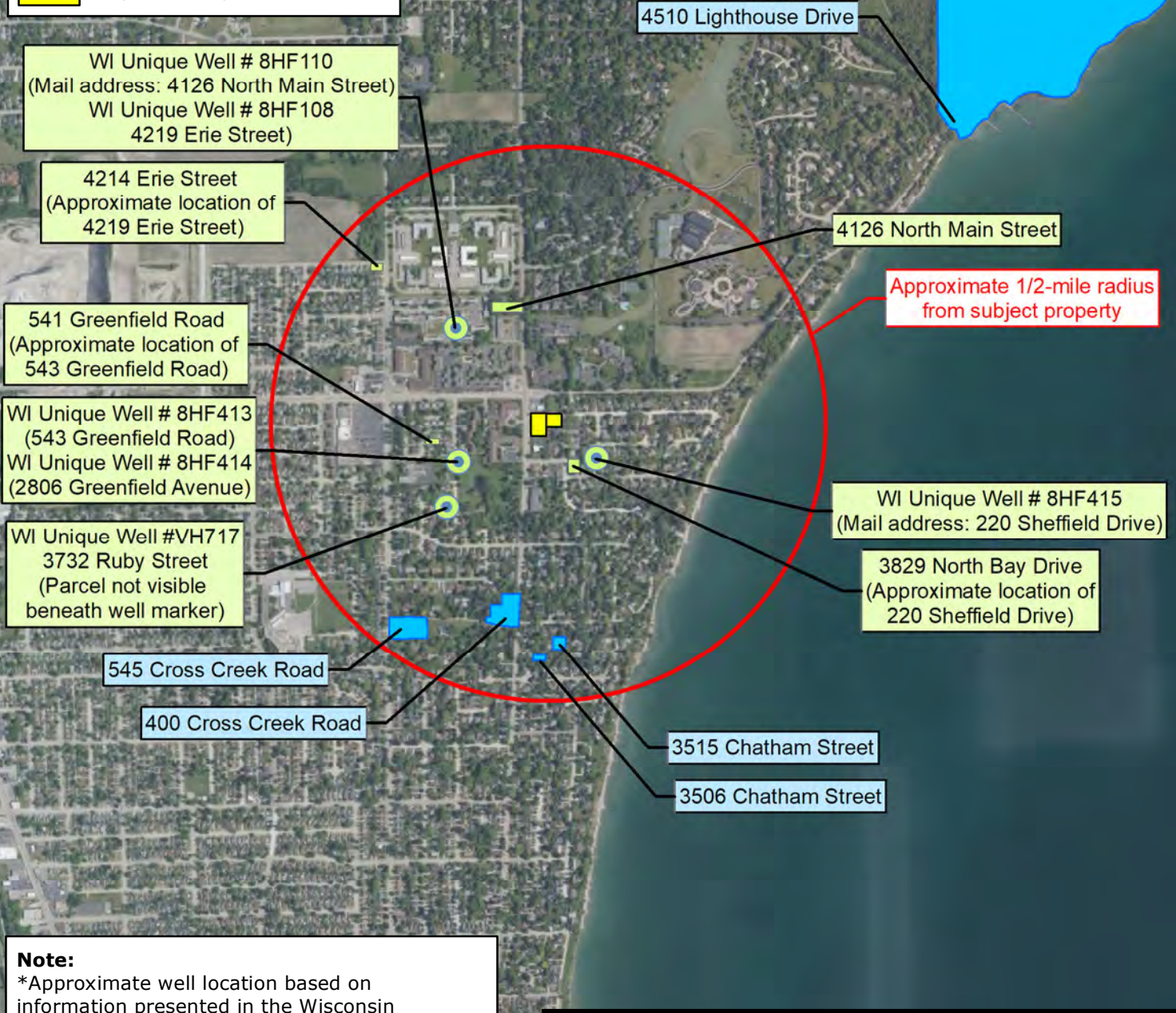


GEOLOGIC CROSS-SECTION

FIGURE 4

Legend

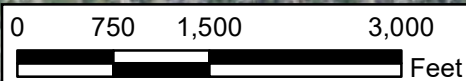
-  WDNR Well Construction Report Online Viewer Well Locations*
-  WDNR Well Construction Report Parcels**
-  Parcels with Potable Wells Identified by Municipalities
-  Subject Property



Note:

*Approximate well location based on information presented in the Wisconsin Department of Natural Resources (WDNR) online Well Construction Report viewer. The viewer maps the well locations based on the centroid of the Public Land Survey System (PLSS) Quarter-Quarter Section.

** Not all addresses identified in the WDNR Well Construction Reports are active. For locations without an active address, the nearest address/parcel at the estimated location of the well location or mailing address was selected.



POTABLE WELL LOCATION MAP

FORMER EXPRESS CLEANERS
3921-3941 NORTH MAIN STREET
RACINE, WISCONSIN



FIGURE
5