

MEMO

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Date:
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ARCADIS Project No.:
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Subject:
Montcalm Avenue Seep Assessment
RACER Trust – Pontiac North Campus, Pontiac, Michigan

ARCADIS of Michigan, LLC (ARCADIS) has prepared this memorandum on behalf of Revitalizing Auto Communities Environmental Response Trust (RACER) to summarize investigative activities conducted by ARCADIS on behalf of RACER since 2012 to characterize a groundwater seep along the Montcalm Avenue right-of way (ROW) (Montcalm Seep Area) near the southern boundary of the Pontiac North Campus in Pontiac, MI (Site) (**Figure 1**).

In general, these activities include the following:

- Installation of 16 soil borings and 10 monitoring wells
- Groundwater sampling
- Surface water sampling
- Hydraulic conductivity testing
- Groundwater elevation surveying
- Groundwater discharge estimating

These activities were performed in accordance with objectives, sampling methodologies, and analytical procedures in the Field Sampling Plan (FSP; Encore 2001a) and Quality Assurance Project Plan (QAPP; Encore 2001b).

Introduction

The area of the Site located north (up-gradient) of the Montcalm Seep Area has undergone significant filling beginning shortly after the start of construction of the former General Motors Corporation's (GM's) manufacturing facilities in the late 1920s through 1930s. Based on review of historical aerial photographs and topographic maps the majority of filling within the area began prior to 1937 and continued into the 1940s. Additional filling may have occurred in the area during the GM facility demolition and Site redevelopment activities in 2005. Prior to facility construction, an ephemeral creek dissected the Site from northeast to southwest, crossing under Montcalm Avenue, eventually draining to Harris Lake. A portion of the creek is still visible in the 1936 topo map and 1937 air photo, but by 1940 only a small portion of the creek remained visible. Historical aerial photographs and topographic maps are included as Attachment 1.

In March 2012, ARCADIS contracted HM Environmental Services of Mt. Clemens, Michigan on behalf of RACER to bulkhead select storm sewers at the Site. This work took place in three separate areas: the former Plant 14 South slab area; an area of three storm sewer access points around the Storm Water Detention Facility on Montcalm Avenue; and the area of the pump station located at the toe of the slope on the north side of Montcalm Avenue, also known as the Montcalm Toe Drain (**Figure 2**). Also, as part of this work, the pump station was demolished, and the pump station vault was filled to grade with flowable concrete fill.

Following the bulk heading and pump station demolition activities performed in March 2012, a consistent presence of standing water was observed in the Montcalm Avenue ROW and along the sidewalk located south of the former pump station. Based on the initial observations, it was obvious that this standing water was the result of surface water run-off from the areas subjected to sewer bulk heading, combined with groundwater seeping from the bank that previously (prior to bulk heading) was collected in the toe drain and/or infiltrated the proximate storm sewers.

Several activities were completed in September 2012 attempting to mitigate the standing water issue. A coarse aggregate-filled drainage swale (or ditch) was installed at the toe of the slope, just north of and parallel to the sidewalk. This swale is approximately 18-inches deep (with 1:1 sidewalls), approximately 4 to 8 feet wide, and approximately 800 feet long. Additionally, approximately 200 linear feet of the low-lying sidewalk just south of the former pump station was raised approximately 6 inches above its previous grade to create a flatter grade across the seep area. The area south of this raised sidewalk was sloped to provide drainage away from the sidewalk to the south. To date, surface water run-off and groundwater still collects and ponds along the Montcalm Avenue sidewalk.

Since the 2012 mitigation activities, a number of investigative activities have been performed to collect information about the geology/hydrogeology in the area where water has been ponding and immediately up-gradient of this area at the toe of the slope to the north. During 2013 and 2014, a total of 10 monitoring wells have been installed in the Montcalm Seep Area (**Figure 2**). Several groundwater and surface water sampling events have been completed, as well as hydraulic conductivity testing and a groundwater elevation survey. The overall objectives of the additional Site activities were to characterize the following:

- Hydrogeologic setting, including factors that govern groundwater discharge
- Surface water quality within the seep area
- Groundwater water elevation and flow direction immediately north of Montcalm Avenue
- Groundwater quality within and up-gradient of the seep area
- Groundwater discharge rate

These activities are described in more detail in the following sections.

2013 Investigation

Soil Borings and Monitoring Well Installation

On July 29 and 30, 2013, ARCADIS subcontracted Fibertec Environmental Services of Brighton, Michigan, to drill eight soil borings (SB-ROW-01 through SB-ROW-08) and install three monitoring wells (TW-ROW-01 through TW-ROW-03) within and along the north side of the Montcalm Avenue ROW (**Figure 2**). These soil borings were advanced to a depth of 16 feet below the ground surface (bgs) in an east-west transect to better characterize the geology through the seep area. The associated soil boring logs are included as **Attachment 2**.

Following the soil borings, three 2-inch monitoring wells, TW-ROW-01 through TW-ROW-03 (ROW series), were installed at locations SB-ROW-06, SB-ROW-04 and SB-ROW-02, respectively. These monitoring wells were constructed using 2-inch-diameter, 5-foot long, flush-joint, Schedule 40, 0.010-inch slotted, polyvinylchloride (PVC) wells screens and PVC risers. The well screens were installed from approximately 3 to 8 feet bgs. A sand pack was placed from the bottom of each well to approximately 0.5 feet above the top of each screen. The remainder of each borehole was filled with cement-bentonite grout to prevent surface water infiltration. The wells were each finished with a flush-mounted well cover. Due to the presence of standing water at these well locations, the concrete surrounding each well was bermed

several inches above grade to prevent surface water from running into the well. A water-tight well plug was placed on the top of each well riser.

Following all monitoring well installations, each monitoring well was developed (purged) to remove sediment from the well screens and to improve the connection with the screened formation. Development water and soil cuttings were containerized and stored onsite pending disposal.

Groundwater Sampling

- In August 2013, groundwater samples were collected from the ROW series wells. Prior to sampling, the wells were gauged with a water level meter. Groundwater elevation data are presented in **Table 1**. Groundwater samples were collected using a low-flow sampling technique generally consistent with the Site FSP. Samples were collected with a peristaltic pump at a purge rate of approximately 150 to 200 milliliters per minute (mL/min). After the purging of the wells, the turbidity of the groundwater in the well was above 5 Nephelometric turbidity units (NTU) so a dissolved and total metals sample was collected and analyzed for all three ROW series wells. All samples were collected within laboratory-supplied containers, placed in a cooler packed with ice, and submitted to TestAmerica of North Canton, Ohio (TestAmerica) for analysis of volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260, semi-volatile organic compounds (SVOCs) by USEPA Method 8270, polychlorinated biphenyls (PCBs) by USEPA Method 8082, and metals by USEPA Method 6020. Groundwater analytical results are presented in **Table 2** and the associated analytical reports are included in **Attachment 3**. Groundwater concentrations exceeding the Michigan Department of Environmental Quality (MDEQ) Groundwater Surface Water Interface (GSI) criteria (MDEQ 2013) for arsenic were detected in the TW-ROW-02 and TW-ROW-03.

Surface Water and Sheen Sampling

In the summer of 2013, sheen was noted at several locations on the standing water located along Montcalm Avenue. On July 1, 2013, ARCADIS collected surface water samples from four locations (SW-1 through SW-4). The sheen was also sampled at two of the four locations (SW-1 and SW-2). Surface water sample locations are included on **Figure 2**. Results of the surface water sampling are provided on **Table 3**. Sheen sample results are summarized on **Table 4**. Surface water analytical reports are presented in **Attachment 4**. Samples were collected within laboratory-supplied containers, placed in a cooler packed with ice, and submitted to Test America for analysis of VOCs, SVOCs, metals and PCBs. Although GSI criteria are not appropriate for screening surface water concentrations for cleanup action, these data were screened against the GSI criteria, as a frame of reference to help guide further investigation. Concentrations in excess of the GSI criteria for one or more metals were detected at all four surface water sample locations in 2013; most notably for arsenic. PCBs were not detected the surface water samples during the 2013 event.

Sheen samples, SHEEN1 and SHEEN2, were collected at two of the four surface water sampling locations SW-1 and SW-2, respectively. Two samples (primary and secondary) were collected at each location via two distinct collection methods. The primary sample at each location was collected using specially-designed sheen nets, while the secondary sample at each location was collected as a standard grab sample. The secondary sample was collected as backup to the primary sample. The sheen samples were sent to TestAmerica to determine the amount of total petroleum hydrocarbons (TPH) in the gasoline range, organic (C6-C12) carbon range (GRO) and/or diesel/extended range organic carbon ranges (C10-C20/C20-C34, DRO/ERO). The goal of the sheen sampling and analysis efforts was to assess of the potential source of the sheens through determination whether the sheens were comprised of petroleum related constituents (i.e. petrogenic sheens) or compounds associated with natural organic materials (i.e. biogenic sheens). ARCADIS reviewed the associated laboratory reports and associated chromatograms. The sample chromatograms were compared against standard chromatograms for other petroleum hydrocarbon blends, as well as chromatograms for biogenic materials. Site photographs were also reviewed to help identify potential visual contributions or sources of sheen. As a result of the evaluation, ARCADIS has concluded that the sheens are biogenic and are attributed to the decay of naturally-occurring organic matter proximate to the standing water, and that they are not associated with Site-related petroleum hydrocarbons. Additional details are provided in **Attachment 5**.

2014 Investigation

Surface Water Sampling

Between May and July of 2014, ARCADIS collected surface water samples on five separate occasions from locations SW-1 through SW-4 consistent with the 2013 event discussed above (**Figure 2**). Samples were collected within laboratory-supplied containers, placed in a cooler packed with ice, and submitted to TestAmerica for analysis of PCBs and metals. The associated analytical reports are presented in **Attachment 4** and summarized in **Table 3**. As with the 2013 surface water data, these data were screened against the GSI criteria as criteria frame of reference. Multiple metals were detected above the GSI criteria at all four surface water sampling locations. In addition, PCBs were detected at locations SW-1, SW-2 and SW-4. These detections ranged from 0.042 to 0.14 micrograms per liter ($\mu\text{g/L}$), so all detections were less than the GSI criteria of 0.2 $\mu\text{g/L}$.

Given that these detections of PCBs could be linked to presence of PCBs at the Site, a Notice of Migration (NOM) for the potential discharge of PCBs to the storm sewer was sent to the MDEQ and the City of Pontiac on November 6, 2014. The USEPA was notified of the NOM submittal.

Soil Borings and Temporary Monitoring Well Installation

On July 22 through 24, 2014, ARCADIS subcontracted Cascade Drilling Company L.P of Flint, Michigan to drill seven soil borings (TW-MD-01 through TW-MD-07) along the toe of the slope immediately north of the

Montcalm seep area, and one soil boring (SB-MD-01) at the top of the slope (**Figure 1**). Soil borings TW-MD-01 through TW-MD-07 were advanced to 15 to 20 feet bgs, and soil boring SB-MD-01 was advanced to 30 feet bgs. During the drilling of each soil boring, a 10-foot core-barrel was used to collect continuous soil samples. Each 2-foot increment was field-screened using a photo-ionization detector. Two Shelby tube samples were collected, one from TW-MD-01 at 6 to 8 feet bgs and one from SB-MD-01 at 4 to 6 feet bgs. Shelby tube samples were submitted to Schleede-Hampton Associates, Inc. of Birmingham, Michigan (Schleede-Hampton) and analyzed for Atterberg limits, grain size (sieve and hydrometer) and permeability (constant head or flex wall).

Immediately following the soil boring installations described above, soil borings TW-MD-01 through TW-MD-07 (MD series) were completed as temporary monitoring wells (**Figure 1**) to provide groundwater sampling points along the toe of the slope, and to facilitate the collection of data sufficient to calculate groundwater discharge across the seep interface along the toe of the slope. The well screens were installed above the native peat layer within the more permeable sand unit present below shallow fill with screen depths generally between 3 to 15 feet bgs. Well construction materials were similar to the ROW series wells outlined above. Well construction and soil boring logs are included in **Attachment 2**.

Following all monitoring well installations, each monitoring well was developed (purged) to remove sediment from the well screens and to improve the hydraulic connection with the screened formation. The well development continued until the groundwater was clear, or until approximately 30 gallons of groundwater were purged. Development water and soil cuttings were containerized and stored on-site until they were removed for disposal in October 2014.

Groundwater Sampling

In July 2014, groundwater samples were collected from each the seven MD series wells installed along the toe of the slope as described above. Prior to sampling, each monitoring well was gauged with a water level indicator. Groundwater elevation data are presented in **Table 1**. Groundwater sampling methodology was consistent with 2013 except in 2014 “ultra” low-flow techniques were used during both events. Ultra-low flow sampling involves well purging at rates less than 100 mL/min, with the goal of reducing the turbidity of the sample to as close to zero as practical. During the 2014 sampling events, wells were purged at a rate of 50 mL/min, and final turbidity readings ranged from 2.12 to 4.75 NTU. All samples were collected within laboratory-supplied containers, placed in a cooler packed with ice, and submitted to TestAmerica for analysis of PCBs and metals. Groundwater analytical results are presented in **Table 2** and the associated analytical reports are included in **Attachment 3**. No metals concentrations exceeded the GSI criteria, but low concentrations of PCBs (0.056 – 0.23 µg/L) were observed in TW-MD-01 and TW-MD-06, respectively. Groundwater analytical results are summarized on **Table 2**. The detection of PCBs at 0.23 µg/L exceeds the GSI criteria of 0.2 µg/L, but only by a rather negligible margin.

In September 2014, groundwater samples were again collected from each the seven MD series wells installed along the toe of the slope as described above. Just as in July, each monitoring well was gauged with a water level indicator prior to sampling. Groundwater elevation data are presented in **Table 1**. Groundwater samples were collected consistent with methods used in July using ultra low-flow techniques. Groundwater analytical results are presented in **Table 2** and the associated analytical reports are included in **Attachment 3**. There was only one detection of PCBs (0.17 µg/L) observed in TW-MD-06, and this detection is less than the GSI criteria.

Groundwater Elevation Survey

On August 28, 2014 a groundwater elevation survey was completed using a select number of wells near and within the seep area in order to characterize groundwater elevations in this area as well as the associated horizontal gradient. The groundwater elevation data resulting from this survey are presented in **Table 1**. These data were used to construct a groundwater elevation contour map (**Figure 3**). This contour map shows that the groundwater elevations in this area remain generally flat north of Montcalm Avenue, with flow being generally to the south. The horizontal gradient ranges from 0.01 to 0.002 (feet/feet).

Conceptual Site Model

Geology/Hydrogeology

In general, the surface topography of the Site slopes to the south/southwest from the on-site fill area downward towards Montcalm Avenue. There is an approximate 30-foot drop in elevation from SB-MD-01 located on the top of the slope north of the Montcalm Avenue ROW over a distance of approximately 200 feet to TW-ROW-02 located south beyond the bottom of the slope within the Montcalm Avenue ROW (**Figure 2**). Based on the soil borings completed near Montcalm Avenue, the subsurface geology immediately north of the seep area along the toe of the slope consists of an approximate 5-foot layer of sand/clay/silt fill and topsoil overlying a 5- to 10-foot thick layer of relatively permeable fine to coarse black sandy fill. The lower confining unit which is present at approximately 10 feet bgs is comprised of wetland deposits consisting of clay and peat overlying marl. The eastern end of the cross-section indicates a depression in the lower confining unit near TW-MD-06, which is generally coincident with the location of the former stream channel depicted on historical topographic maps and aerial photographs (Attachment 1). A west to east geologic cross-section using the MD series wells is presented as **Figure 4**.

Groundwater elevations within the study area range from 940.84 feet above mean seal level (amsl) at TW-ROW-02 within the Montcalm Avenue ROW to 943.07 feet amsl at SB-40-14 at the top of the slope. The ground surface elevation at the toe of the slope along the Montcalm Avenue ROW is approximately 942 feet amsl. Groundwater seeps occur where the ground surface elevation dips below the water table elevation in this area. This occurs primarily along the sidewalk south of TW-MD-01 to TW-MD-06.

Geotechnical Analysis

Geotechnical samples were collected at two locations in July 2014 to provide additional information to assist with the evaluation of potential remedies for the groundwater seep. Shelby tube samples of granular materials were collected from TW-MD-01 (6-8 ft bgs) and SB-MD-01 (4-6 ft bgs,) respectively, to confirm soil type and determine vertical permeability. Samples were submitted to Schleede-Hampton for Atterberg limits, grain size (sieve and hydrometer) and permeability (constant head or flex wall).

- TW-MD-01 was split into two samples by Schleede-Hampton.
 - 6 to 7 feet collected from the sand unit below the shallow fill - consisted of black sand with trace gravel and trace silt. Vertical permeability was determined to be 5.0×10^{-5} centimeters per second (cm/sec).
 - 7 to 8 feet – collected from the clay underlying the sand unit - contained soft variegated (discolored) grey clayey sand. Vertical permeability for the clayey sand unit was not tested.
- SB-MD-01 (6 to 8 ft) – collected from the up-gradient fill material - consisted of a mixed granular fill of variegated gray sand, some gravel, little silt, occasional clay seams. Vertical permeability was determined to be 3.90×10^{-7} cm/sec.

Geotechnical results are consistent with soil characteristics observed during drilling activities. The geotechnical analytical report is included as **Attachment 6**.

Percolation Testing

Percolation testing was completed in 2011 on the top of the slope along Montcalm in anticipation of disconnecting the Montcalm Toe Drain from the Storm Water Detention Facility south of Montcalm Avenue. The purpose of a percolation test is to determine the absorption rate of soil over a specific area. Test holes were dug at six locations (TH-1 through TH-6) at the top of the slope in November 2011 (**Figure 5**). The tests are conducted by digging a hole 6 to 12 inches in diameter and approximately 4 feet deep. Approximately 2 inches of gravel are placed at the bottom of each hole, prior to pre-soaking the hole. After allowing the soil to swell for 24 hours, the percolation tests are conducted by filling the each hole with water, and then water depth measurements are taken while the water drains away. The percolation testing results indicated that collectively the percolation rate ranged from 83 to 250 minutes per inch, or 0.01 to 0.004 inches per minute.

In July 2014, additional percolation testing was conducted in an area east of the retention pond on the north side of the United States Postal Service building that is just north of Montcalm Avenue. This area was tested as a potential area for an infiltration gallery to mitigate the seep area. Test holes were dug at

six locations (PT-1 through PT-6) (**Figure 5**). A percolation test could not be conducted at PT-6 due to the high water table at approximately 1.5 feet bgs. The five other locations exhibited percolation rates ranging from 116 to 360 minutes per inch, or 0.009 to 0.003 inches per minute.

Hydraulic Testing

On August 5 and 7, 2014, ARCADIS completed slug testing on the MD series wells to estimate the hydraulic conductivity of the sand unit. Both slug-in and slug-out tests were completed at each well, water level measurements were measured with a transducer. The hydraulic conductivity for all wells was found to consistently be in the range of 10^{-3} cm/sec, consistent with a soil type of silty sand. Slug tests results are summarized as **Table 5** and the data analysis is included as **Attachment 7**.

Groundwater Discharge

Groundwater discharges at the surface along the Montcalm Avenue ROW. The amount of water that may be attributed to groundwater discharge can be estimated based on Darcy's Law. The total discharge is a product of the hydraulic conductivity (K), cross-sectional flow area (A) and horizontal gradient (i) (change in hydraulic head or pressure), such that:

$$Q = \int_A K i A \text{ (volume/time)}$$

The total groundwater discharge was calculated for the cross-sectional area represented by the MD series wells. The area represented by each monitoring well is shown conceptually on **Figure 6**. The cross-sectional area of each well was calculated two ways: 1) the area represented by the more permeable black sandy fill unit, and 2) the entire saturated thickness of fill above the marl/peat. The hydraulic conductivity was estimated for each area based on the slug test results.

Based on the above assumptions the total groundwater discharge along the MD series transect is estimated to be between 0.2 and 0.7 gallons per minute (gpm) or approximately 300 to 1,000 gallons per day (gpd). Groundwater discharge calculations are summarized on **Table 6**.

Summary

Following the storm sewer bulk heading and demolition of the pump station located on the north side of Montcalm Avenue in 2012, groundwater seeps have been observed along the sidewalk bordering the Site, and standing water is present within the ROW. Initial attempts to mitigate the standing water were implemented in 2013 but were not successful. Between July 2013 and September 2014, investigations were completed to further characterize the conditions that give rise to the groundwater seeps and standing water. Based on the activities and resulting data discussed herein, ARCADIS offers the following summary:

- The topography slopes from an area of fill at the Site south down to Montcalm Avenue. The geology immediately north of the seep area consists of approximately 5 feet of sand/clay/silt fill and topsoil overlying a 5- to 10-foot thick layer of relatively permeable fine to coarse black sandy fill. The lower confining unit consists of wetland deposits consisting of clay peat and marl. Groundwater seeps occur where the ground surface elevation dips below the water table - primarily along the sidewall north of Montcalm Avenue.
- Surface water samples along the seep area have indicated multiple metals at concentrations greater than GSI Criteria. In addition, PCBs have been detected sporadically in the surface water at sample locations SW-1 and SW-2. VOCs and SVOCs were not detected.
- Sheens observed in 2013 on the surface of standing water within the Montcalm Avenue ROW was found to be of naturally occurring biogenic origin.
- Groundwater samples within the Montcalm Avenue ROW (ROW-series wells) contained concentrations of arsenic in excess of GSI criteria; however, metals were not detected above GSI criteria in groundwater samples collected immediately up-gradient of the groundwater/seep interface (MD series wells) along the toe of the slope. Low concentrations of PCBs have been observed at TW-MD-01 and TW-MD-06. There has been one exceedance of GSI criteria for PCBs. VOCs and SVOCs were not detected.
- The vertical conductivity of the unsaturated, shallow fill material up-gradient of the seep area is low (i.e. 10^{-7} cm/sec), and percolation tests suggest limited percolation (recharge) capacity (83 to 250 minutes per inch, or 0.01 to 0.004 inches per minute).
- Based on the hydraulic data collected as part of this investigation, the total groundwater discharge along the cross-sectional area represented by the MD series wells up-gradient of the Montcalm Avenue seep area along the toe of the slope is estimated to be 0.2 to 0.7 gpm, or approximately 300 to 1,000 gpd.

Conclusions

Metals observed within the surface water samples have been shown not to be associated with the groundwater discharging from the Site at the toe of the slope upgradient of the seep. Sampling of groundwater immediately up-gradient of the groundwater/seep interface showed the associated metals concentrations to be below GSI criteria in all cases. The metals concentrations detected in surface water within the ROW may be attributed to sediment entrained within the sample, and/or sources unrelated to the Site. The low concentrations of PCBs observed in the surface water samples; however, are consistent with concentrations of PCBs observed in groundwater collected from monitoring wells installed up-gradient of the seep (e.g. TW-MD-06), and may be attributed to the Site.

The volume of groundwater discharging through the cross-sectional area represented by the MD series wells to the ground surface along Montcalm Avenue is generally small (i.e. 300 to 1,000 gpd). Due to the presence of PCBs, and the overall nuisance associated with the standing water, a control strategy is warranted to mitigate the associated groundwater discharge and the potential for off-Site migration of PCBs. Options being considered at this time include: 1) a modified drain to intercept the water, groundwater treatment, and then discharge of treated water to surface water, and 2) a modified drain to intercept the water followed by recirculation of captured groundwater up-gradient onto the Site. Short-term follow-up actions to address these conditions involve the assessment and comparison of the feasibility and costs associated with the noted remedial options.

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- 1 Fluid Level Gauging Results
- 2 Groundwater Analytical Results
- 3 Surface Water Analytical Results
- 4 Sheen Sample Results
- 5 Slug Test Data
- 6 Groundwater Discharge Calculations

Figures

- 1 Site Overview
- 2 Well Locations
- 3 Groundwater Elevation Contours
- 4 Geologic Cross Section A-A'
- 5 Percolation Test Locations
- 6 Groundwater Discharge

Attachments

- 1 Historical Aerial Photographs and Topographic Maps
- 2 Well Construction and Soil Boring Logs (on CD)
- 3 2013-2014 Groundwater Laboratory Analytical Reports (on CD)
- 4 2013-2014 Surface Water Laboratory Analytical Reports (on CD)
- 5 Forensic Sheen Interpretation Memo (on CD)
- 6 Schleede Hampton Lab Report (on CD)
- 7 Slug Test Data (on CD)

References

Encore. 2001a. Field Sampling Plan, Pontiac North Campus. General Motors Corporation, Pontiac, Michigan. May, 2001.

Encore. 2001b. RFI Work Plan, Appendix G QAPP, Pontiac North Campus. General Motors Corporation, Pontiac, Michigan. May 15, 2001.

Michigan Department of Environmental Quality (MDEQ) Natural Resources and Environmental Protection Act, 1994 Public Act 451, Michigan Compiled Laws 324.101 et seq, updated December 30, 2013.



HUWYg

Table 1
Groundwater Elevation Data
RACER Trust
Pontiac North Campus
Pontiac, Michigan

Well ID	Date	TOC Elevation	DTW*	Groundwater Elevation	Total Depth*
SB-41-14	8/28/2014	973.114	26.68	946.434	NM
TW-MD-01	8/28/2014	946.2	4.21	941.99	10.15
TW-MD-02	8/28/2014	945.976	4.1	941.876	NM
TW-MD-03	8/28/2014	946.604	4.23	942.374	11.75
TW-MD-04	8/28/2014	946.983	4.43	942.553	13.45
TW-MD-05	8/28/2014	946.712	4.18	942.532	13.25
TW-MD-06	8/28/2014	947.083	4.55	942.533	16.69
TW-MD-07	8/28/2014	947.08	4.55	942.53	15.14
MW40-99	12/3/2013	952.32	10.52	941.8	NM
	8/28/2014	952.32	10.17	942.15	18.16
DW40-99	8/28/2014	952.27	11.69	940.58	41.56
MWW-SEN04	12/3/2013	971.121	28.25	942.871	NM
	8/28/2014	971.121	28.47	942.651	37.81
MWW-SEN03	12/3/2013	981.674	39.45	942.224	NM
	8/28/2014	981.674	39.41	942.264	40.7
MWW-SEN02	12/3/2013	967.68	26.35	941.33	NM
	8/28/2014	967.68	25.98	941.7	28.24
MWW-SEN01	12/3/2013	967.306	19.45	947.856	NM
	8/28/2014	967.306	18.97	948.336	22.37
SB-40-14	8/28/2014	976.284	33.21	943.074	34.81
TW-ROW-02	12/3/2013	941.92	0.0	941.92	NM
	8/28/2014	941.92	1.08	940.84	8.15
TW-ROW-03	12/3/2013	942.38	0.0	942.38	NM
	8/28/2014	942.38	0.91	941.47	8.14
TW-ROW-01	12/3/2013	942.53	1.16	941.37	NM
	8/28/2014	942.53	0.37	942.16	7.84
MW0S-06	12/3/2013	NA	4.13	NA	NM
	8/28/2014	NA	3.55	NA	12.81
SB-38-14	8/28/2014	971.598	21.83	949.768	NM

Acronyms:

DTW Depth to Water
NA Not Available
NM Not Measured
TOC Top of Casing

* Depth to Water and Total Depth measured from Top of Casing.

Table 2
Groundwater Analytical Data
RACER Trust
Pontiac North Campus
Pontiac, Michigan

Chemical Name	Location Code:	Units	GSI	TW-ROW-01	TW-ROW-02	TW-ROW-02	TW-ROW-03	TW-MD-01	TW-MD-01
	Sample Code:			TW-ROW-01 (081513)	DUP-01_20130815	TW-ROW-02 (081513)	TW-ROW-03 (081513)	TW-MD-01(073014)	TW-MD-01_090414
	Matrix Code:			WG	WG	WG	WG	WG	WG
	Sample Date:			8/15/2013	8/15/2013	8/15/2013	8/15/2013	7/30/2014	9/4/2014
Miscellaneous									
Alkalinity, total (as CaCO3)		mg/L	NA	NA	NA	NA	NA	NA	NA
Ammonia		mg/L	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)		mg/L	0.0052	NA	NA	NA	NA	NA	NA
Nitrite (as N)		mg/L	NA	NA	NA	NA	NA	NA	NA
pH		ph units	6.5 to 9.0	NA	NA	NA	NA	NA	NA
Phosphate, total		mg/L	NA	NA	NA	NA	NA	NA	NA
Sulfate		mg/L	NA	NA	NA	NA	NA	NA	NA
Sulfide		mg/L	NA	NA	NA	NA	NA	NA	NA
Total dissolved solids (TDS)		mg/L	NA	NA	NA	NA	NA	NA	NA
Inorganics									
Antimony		ug/L	130 (X)	0.18 J	0.23 J	0.25 J	0.35 J	0.35 JB	NA
Antimony (dissolved)		ug/L	130 (X)	0.12 JB	0.22 J	0.21 JB	0.40 J	NA	NA
Arsenic		ug/L	10	1.4 JB	12 B	13 B	110 B	3.4 B	NA
Arsenic (dissolved)		ug/L	10	1.3 JB	15 B	15 B	86 B	NA	NA
Barium		ug/L	670 (G)	180	490	520	94	110 B	NA
Barium (dissolved)		ug/L	670 (G)	170 B	620	580 B	90	NA	NA
Beryllium		ug/L	6.7 (G)	0.27 J	0.20 J	0.19 J	0.35 J	0.10 J	NA
Beryllium (dissolved)		ug/L	6.7 (G)	0.18 J^B	0.12 J	0.15 J^B	0.62 J	NA	NA
Cadmium		ug/L	3.0 (G,X)	0.18 J	0.62	0.51	0.62	0.11 J	NA
Cadmium (dissolved)		ug/L	3.0 (G,X)	0.082 JB	0.12 J	0.053 JB	0.62 J	NA	NA
Chromium		ug/L	100	0.50 J	5.5	4.4	1.9 J	0.43 JB	NA
Chromium Total (dissolved)		ug/L	100	2.4 B	2.8	2.4 B	1.2 J	NA	NA
Cobalt		ug/L	100	0.31 J	3.8	3.7	1.3	0.54 J	NA
Cobalt (dissolved)		ug/L	100	0.35 JB	4.0	3.5 B	1.3	NA	NA
Copper		ug/L	13 (G)	1.2 JB	1.9 JB	1.7 JB	2.4 B	0.63 JB	NA
Copper (dissolved)		ug/L	13 (G)	0.94 JB	1.1 JB	0.94 JB	1.4 JB	NA	NA
Iron (dissolved)		ug/L	NA	NA	NA	NA	NA	13000 B	NA
Lead		ug/L	29 (G,X)	0.72 J	0.60 J	0.59 J	1.2	0.39 JB	NA
Lead (dissolved)		ug/L	29 (G,X)	0.29 JB	0.20 J	0.22 JB	1.2	NA	NA
Manganese		ug/L	2,800 (G,X)	990	1400	1400	540	1200	NA
Manganese (dissolved)		ug/L	2,800 (G,X)	970 B	1700	1500 B	510	1200	NA
Mercury		ug/L	0.0013	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	NA
Mercury (dissolved)		ug/L	0.0013	< 0.20	< 0.20	< 0.20	< 0.20	NA	NA
Nickel		ug/L	73 (G)	1.3 J	34	34	4.0	1.8 JB	NA
Nickel (dissolved)		ug/L	73 (G)	2.6 B	39	37 B	3.7	NA	NA
Selenium		ug/L	5	< 2.0	< 2.0	0.34 J	0.62 J	0.47 J	NA
Selenium (dissolved)		ug/L	5	0.36 JB	< 5.0	0.50 JB	1.0 J	NA	NA
Silver		ug/L	0.2 (M); 0.06	0.025 JB	0.013 JB	0.014 JB	0.062 JB	NA	NA
Silver (dissolved)		ug/L	0.2 (M); 0.06	0.017 JB	0.012 JB	< 1.0	0.064 JB	NA	NA
Thallium		ug/L	3.7 (X)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NA
Thallium (dissolved)		ug/L	3.7 (X)	< 2.0	< 2.0	< 2.0	< 2.0	NA	NA
Vanadium		ug/L	27	0.46 JB	1.1 JB	1.0 JB	1.6 JB	< 4.0	NA
Vanadium (dissolved)		ug/L	27	0.59 JB	1.1 JB	1.2 JB	1.2 JB	NA	NA
Zinc		ug/L	170 (G)	7.5 J	14	8.9 J	8.4 J	< 10	NA
Zinc (dissolved)		ug/L	170 (G)	6.3 JB	8.9 J	11 JB	4.9 J	NA	NA

See Notes on last page.

Table 2
Groundwater Analytical Data
RACER Trust
Pontiac North Campus
Pontiac, Michigan

Chemical Name	Location Code:	Units	GSI	TW-ROW-01	TW-ROW-02	TW-ROW-02	TW-ROW-03	TW-MD-01	TW-MD-01
	Sample Code:			TW-ROW-01 (081513)	DUP-01_20130815	TW-ROW-02 (081513)	TW-ROW-03 (081513)	TW-MD-01(073014)	TW-MD-01_090414
	Matrix Code:			WG	WG	WG	WG	WG	WG
	Sample Date:			8/15/2013	8/15/2013	8/15/2013	8/15/2013	7/30/2014	9/4/2014
PCBs									
Aroclor-1016 (PCB-1016)		ug/L	0.2(M)	< 0.19	< 0.22	< 0.19	< 0.19	< 0.11	< 0.099
Aroclor-1016 (PCB-1016) (dissolved)		ug/L	0.2(M)	NA	NA	NA	NA	NA	< 0.10
Aroclor-1221 (PCB-1221)		ug/L	0.2(M)	< 0.19	< 0.22	< 0.19	< 0.19	< 0.11	< 0.099
Aroclor-1221 (PCB-1221) (dissolved)		ug/L	0.2(M)	NA	NA	NA	NA	NA	< 0.10
Aroclor-1232 (PCB-1232)		ug/L	0.2(M)	< 0.19	< 0.22	< 0.19	< 0.19	< 0.11	< 0.099
Aroclor-1232 (PCB-1232) (dissolved)		ug/L	0.2(M)	NA	NA	NA	NA	NA	< 0.10
Aroclor-1242 (PCB-1242)		ug/L	0.2(M)	< 0.19	< 0.22	< 0.19	< 0.19	< 0.11	< 0.099
Aroclor-1242 (PCB-1242) (dissolved)		ug/L	0.2(M)	NA	NA	NA	NA	NA	< 0.10
Aroclor-1248 (PCB-1248)		ug/L	0.2(M)	< 0.19	< 0.22	< 0.19	< 0.19	< 0.11	< 0.099
Aroclor-1248 (PCB-1248) (dissolved)		ug/L	0.2(M)	NA	NA	NA	NA	NA	< 0.10
Aroclor-1254 (PCB-1254)		ug/L	0.2(M)	< 0.19	< 0.22	< 0.19	< 0.19	< 0.11	< 0.099
Aroclor-1254 (PCB-1254) (dissolved)		ug/L	0.2(M)	NA	NA	NA	NA	NA	< 0.10
Aroclor-1260 (PCB-1260)		ug/L	0.2(M)	< 0.19	< 0.22	< 0.19	< 0.19	0.056 J	< 0.099
Aroclor-1260 (PCB-1260) (dissolved)		ug/L	0.2(M)	NA	NA	NA	NA	NA	< 0.10
Volatile Organic Compounds									
1,1,1-Trichloroethane		ug/L	89	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
1,1,2,2-Tetrachloroethane		ug/L	78 (X)	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
1,1,2-Trichloroethane		ug/L	330 (X)	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
1,1-Dichloroethane		ug/L	740	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
1,1-Dichloroethene		ug/L	130	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
1,2,4-Trichlorobenzene		ug/L	99 (X)	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
1,2-Dibromo-3-chloropropane (DBCP)		ug/L	0.0 ID	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
1,2-Dibromoethane (Ethylene dibromide)		ug/L	5.7 (X)	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
1,2-Dichlorobenzene		ug/L	13	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
1,2-Dichloroethane		ug/L	360 (X)	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
1,2-Dichloropropane		ug/L	230 (X)	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
1,3-Dichlorobenzene		ug/L	28	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
1,4-Dichlorobenzene		ug/L	17	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
2-Butanone (Methyl ethyl ketone) (MEK)		ug/L	2,200	< 25	1.7 J	1.5 J	0.62 J	NA	< 25
2-Hexanone		ug/L	ID	< 50	< 50	< 50	< 50	NA	< 50
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)		ug/L	ID	< 50	0.36 J	< 50	< 50	NA	< 50
Acetone		ug/L	1,700	< 25	5.8 J	5.5 J	< 25	NA	< 25
Benzene		ug/L	200 (X)	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
Bromodichloromethane		ug/L	0.0 ID	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
Bromoform		ug/L	0.0 ID	< 1.0 *	< 1.0 *	< 1.0 *	< 1.0 *	NA	< 1.0
Bromomethane (Methyl bromide)		ug/L	35	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0

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Table 2
Groundwater Analytical Data
RACER Trust
Pontiac North Campus
Pontiac, Michigan

Chemical Name	Location Code:	Units	GSI	TW-ROW-01	TW-ROW-02	TW-ROW-02	TW-ROW-03	TW-MD-01	TW-MD-01
	Sample Code:			TW-ROW-01 (081513)	DUP-01_20130815	TW-ROW-02 (081513)	TW-ROW-03 (081513)	TW-MD-01(073014)	TW-MD-01_090414
Matrix Code:	Sample Date:			WG	WG	WG	WG	WG	WG
				8/15/2013	8/15/2013	8/15/2013	8/15/2013	7/30/2014	9/4/2014
Carbon disulfide		ug/L	0.0 ID	< 5.0	< 5.0	< 5.0	< 5.0	NA	< 5.0
Carbon tetrachloride		ug/L	45 (X)	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
Chlorobenzene		ug/L	25	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
Chloroethane		ug/L	1,100 (X)	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
Chloroform (Trichloromethane)		ug/L	350	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
Chloromethane (Methyl chloride)		ug/L	0.0 ID	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
cis-1,2-Dichloroethene		ug/L	620	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
cis-1,3-Dichloropropene		ug/L	NA	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
Cyclohexane		ug/L	NA	< 1.0	< 1.0	0.16 J	< 1.0	NA	< 1.0
Dibromochloromethane		ug/L	0.0 ID	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
Dichlorodifluoromethane (CFC-12)		ug/L	0.0 ID	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
Ethylbenzene		ug/L	18	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
Isopropyl benzene		ug/L	28	< 5.0	< 5.0	< 5.0	< 5.0	NA	< 5.0
Methyl acetate		ug/L	NA	< 10	< 10	< 10	< 10	NA	< 10
Methyl cyclohexane		ug/L	NA	< 1.0	0.38 J	0.41 J	< 1.0	NA	< 1.0
Methyl tert butyl ether (MTBE)		ug/L	7,100 (X)	< 5.0	< 5.0	< 5.0	< 5.0	NA	< 5.0
Methylene chloride		ug/L	1,500 (X)	< 5.0	< 5.0	< 5.0	< 5.0	NA	< 5.0
Styrene		ug/L	80 (X)	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
Tetrachloroethene		ug/L	60 (X)	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
Toluene		ug/L	270	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
trans-1,2-Dichloroethene		ug/L	1,500 (X)	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
trans-1,3-Dichloropropene		ug/L	NA	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
Trichloroethene		ug/L	200 (X)	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
Trichlorofluoromethane (CFC-11)		ug/L	0.0	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
Trifluorotrchloroethane (Freon 113)		ug/L	32	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
Vinyl chloride		ug/L	13 (X)	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0
Xylene (total)		ug/L	41	< 2.0	< 2.0	< 2.0	< 2.0	NA	< 2.0
Semivolatile Organic Compounds									
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)		ug/L	NA	< 0.95	< 0.97	< 0.95	< 0.95	NA	< 10
2,4,5-Trichlorophenol		ug/L	0.0	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
2,4,6-Trichlorophenol		ug/L	5	< 3.8	< 3.9	< 3.8	< 3.8	NA	< 42
2,4-Dichlorophenol		ug/L	11	< 9.5	< 9.7	< 9.5	< 9.5	NA	< 100
2,4-Dimethylphenol		ug/L	380	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
2,4-Dinitrophenol		ug/L	NA	< 19	< 19	< 19	< 19	NA	< 210
2,4-Dinitrotoluene		ug/L	0.0	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
2,6-Dinitrotoluene		ug/L	NA	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
2-Chloronaphthalene		ug/L	0.0	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
2-Chlorophenol		ug/L	18	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
2-Methylnaphthalene		ug/L	19	< 4.8	2.0 J	1.9 J	< 4.8	NA	< 52
2-Methylphenol		ug/L	NA	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52

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Table 2
Groundwater Analytical Data
RACER Trust
Pontiac North Campus
Pontiac, Michigan

Chemical Name	Location Code:	Units	GSI	TW-ROW-01	TW-ROW-02	TW-ROW-02	TW-ROW-03	TW-MD-01	TW-MD-01
	Sample Code:			TW-ROW-01 (081513)	DUP-01_20130815	TW-ROW-02 (081513)	TW-ROW-03 (081513)	TW-MD-01(073014)	TW-MD-01_090414
	Matrix Code:			WG	WG	WG	WG	WG	WG
	Sample Date:			8/15/2013	8/15/2013	8/15/2013	8/15/2013	7/30/2014	9/4/2014
2-Nitroaniline		ug/L	NA	< 19	< 19	< 19	< 19	NA	< 210
2-Nitrophenol		ug/L	0.0 ID	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
3,3'-Dichlorobenzidine		ug/L	0.3 (M); 0.2	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
3-Nitroaniline		ug/L	NA	< 19	< 19	< 19	< 19	NA	< 210
4,6-Dinitro-2-methylphenol		ug/L	NA	< 19	< 19	< 19	< 19	NA	< 210
4-Bromophenyl phenyl ether		ug/L	NA	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
4-Chloro-3-methylphenol		ug/L	7.4	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
4-Chloroaniline		ug/L	NA	< 1.9	< 1.9	< 1.9	< 1.9	NA	< 21
4-Chlorophenyl phenyl ether		ug/L	NA	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
4-Methylphenol		ug/L	NA	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
4-Nitroaniline		ug/L	NA	< 19	< 19	< 19	< 19	NA	< 210
4-Nitrophenol		ug/L	NA	< 19	< 19	< 19	< 19	NA	< 210
Acenaphthene		ug/L	38	< 4.8	< 4.9	0.11 J	< 4.8	NA	< 52
Acenaphthylene		ug/L	0.0 ID	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
Acetophenone		ug/L	0.0 ID	< 0.95	< 0.97	< 0.95	< 0.95	NA	< 10
Anthracene		ug/L	0.0 ID	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
Atrazine		ug/L	7.3	< 0.95	< 0.97	< 0.95	< 0.95	NA	< 10
Benzaldehyde		ug/L	NA	< 0.95	< 0.97	< 0.95	< 0.95	NA	< 10 *
Benzo(a)anthracene		ug/L	0.0 ID	< 0.95	< 0.97	< 0.95	< 0.95	NA	< 10
Benzo(a)pyrene		ug/L	0.0 ID	< 0.95	< 0.97	< 0.95	< 0.95	NA	< 10
Benzo(b)fluoranthene		ug/L	0.0 ID	< 0.95	< 0.97	< 0.95	< 0.95	NA	< 10
Benzo(g,h,i)perylene		ug/L	0.0 ID	< 0.95	< 0.97	< 0.95	< 0.95	NA	< 10
Benzo(k)fluoranthene		ug/L	0.0	< 0.95	< 0.97	< 0.95	< 0.95	NA	< 10
Biphenyl (1,1-Biphenyl)		ug/L	NA	< 0.95	< 0.97	< 0.95	< 0.95	NA	< 10
bis(2-Chloroethoxy)methane		ug/L	NA	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
bis(2-Chloroethyl)ether		ug/L	1 (M); 0.79	< 0.95	< 0.97	< 0.95	< 0.95	NA	< 10
bis(2-Ethylhexyl)phthalate (DEHP)		ug/L	25	1.0 JB	1.1 JB	0.83 JB	1.0 JB	NA	3.4 JB
Butyl benzylphthalate (BBP)		ug/L	67 (X)	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
Caprolactam		ug/L	NA	< 4.8	< 4.9	< 4.8	< 4.8	NA	4.7 JB
Carbazole		ug/L	10 (M); 4.0	< 9.5	< 9.7	< 9.5	< 9.5	NA	< 100
Chrysene		ug/L	0.0 ID	< 0.95	< 0.97	< 0.95	< 0.95	NA	< 10
Dibenz(a,h)anthracene		ug/L	0.0 ID	< 1.9	< 1.9	< 1.9	< 1.9	NA	< 21
Dibenzofuran		ug/L	4	< 3.8	< 3.9	< 3.8	< 3.8	NA	< 42
Diethyl phthalate		ug/L	110	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
Dimethyl phthalate		ug/L	0.0	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
Di-n-butylphthalate (DBP)		ug/L	9.7	1.2 JB	1.5 JB	1.1 JB	0.97 JB	NA	1.9 JB
Di-n-octyl phthalate (DnOP)		ug/L	0.0 ID	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
Fluoranthene		ug/L	1.6	< 0.95	< 0.97	< 0.95	< 0.95	NA	< 10
Fluorene		ug/L	12	< 4.8	0.10 J	0.12 J	< 4.8	NA	< 52

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Table 2
Groundwater Analytical Data
RACER Trust
Pontiac North Campus
Pontiac, Michigan

Chemical Name	Location Code: Sample Code: Matrix Code: Sample Date:	Units	GSI	TW-ROW-01	TW-ROW-02	TW-ROW-02	TW-ROW-03	TW-MD-01	TW-MD-01
				TW-ROW-01 (081513) WG 8/15/2013	DUP-01_20130815 WG 8/15/2013	TW-ROW-02 (081513) WG 8/15/2013	TW-ROW-03 (081513) WG 8/15/2013	TW-MD-01(073014) WG 7/30/2014	TW-MD-01_090414 WG 9/4/2014
Hexachlorobenzene		ug/L	0.2 (M); 0.0003	< 0.19	< 0.19	< 0.19	< 0.19	NA	< 2.1
Hexachlorobutadiene		ug/L	0.053	< 0.95	< 0.97	< 0.95	< 0.95	NA	< 10
Hexachlorocyclopentadiene		ug/L	0.0 ID	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
Hexachloroethane		ug/L	6.7 (X)	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
Indeno(1,2,3-cd)pyrene		ug/L	0.0 ID	< 1.9	< 1.9	< 1.9	< 1.9	NA	< 21
Isophorone		ug/L	1,300 (X)	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
Naphthalene		ug/L	11	< 4.8	< 4.9	0.13 J	< 4.8	NA	< 52
Nitrobenzene		ug/L	180 (X)	< 2.9	< 2.9	< 2.9	< 2.9	NA	< 31
N-Nitrosodi-n-propylamine		ug/L	0.0	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
N-Nitrosodiphenylamine		ug/L	0.0	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
Pentachlorophenol		ug/L	0.0 (G,X)	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
Phenanthrene		ug/L	2 (M); 1.4	< 1.9	0.18 J	0.15 J	< 1.9	NA	< 21
Phenol		ug/L	450	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
Pyrene		ug/L	0.0 ID	< 4.8	< 4.9	< 4.8	< 4.8	NA	< 52
Field Parameters									
Turbidity		NTU		5.84	5.70	5.70	5.24	2.12	1.81

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Table 2
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Pontiac, Michigan

Chemical Name	Location Code:	Units	GSI	TW-MD-02	TW-MD-02	TW-MD-03	TW-MD-03	TW-MD-04	TW-MD-04
	Sample Code:			TW-MD-02(072914)	TW-MD-02_090414	TW-MD-03(072914)	TW-MD-03_090414	DUP-01(073014)	TW-MD-04(073014)
	Matrix Code:			WG	WG	WG	WG	WG	WG
	Sample Date:			7/29/2014	9/4/2014	7/29/2014	9/4/2014	7/30/2014	7/30/2014
Miscellaneous									
Alkalinity, total (as CaCO3)		mg/L	NA	560 B	NA	NA	NA	NA	NA
Ammonia		mg/L	NA	1.8	NA	NA	NA	NA	NA
Cyanide (total)		mg/L	0.0052	0.0029 J	NA	NA	NA	NA	NA
Nitrite (as N)		mg/L	NA	< 0.10	NA	NA	NA	NA	NA
pH		ph units	6.5 to 9.0	7.28 H	NA	NA	NA	NA	NA
Phosphate, total		mg/L	NA	0.59	NA	NA	NA	NA	NA
Sulfate		mg/L	NA	11	NA	NA	NA	NA	NA
Sulfide		mg/L	NA	< 3.0	NA	NA	NA	NA	NA
Total dissolved solids (TDS)		mg/L	NA	680	NA	NA	NA	NA	NA
Inorganics									
Antimony		ug/L	130 (X)	0.16 J	NA	0.25 J	NA	0.22 JB	0.27 JB
Antimony (dissolved)		ug/L	130 (X)	NA	NA	NA	NA	NA	NA
Arsenic		ug/L	10	4.9 B	NA	2.3 B	NA	2.5 B	2.7 B
Arsenic (dissolved)		ug/L	10	NA	NA	NA	NA	NA	NA
Barium		ug/L	670 (G)	160 B	NA	180 B	NA	160 B	160 B
Barium (dissolved)		ug/L	670 (G)	NA	NA	NA	NA	NA	NA
Beryllium		ug/L	6.7 (G)	0.21 J	NA	0.14 J	NA	< 1.0	0.062 J
Beryllium (dissolved)		ug/L	6.7 (G)	NA	NA	NA	NA	NA	NA
Cadmium		ug/L	3.0 (G,X)	< 0.50	NA	< 0.50	NA	< 0.50	< 0.50
Cadmium (dissolved)		ug/L	3.0 (G,X)	NA	NA	NA	NA	NA	NA
Chromium		ug/L	100	0.46 JB	NA	0.60 JB	NA	0.34 JB	0.37 JB
Chromium Total (dissolved)		ug/L	100	NA	NA	NA	NA	NA	NA
Cobalt		ug/L	100	0.54 J	NA	1.0	NA	1.6	1.6
Cobalt (dissolved)		ug/L	100	NA	NA	NA	NA	NA	NA
Copper		ug/L	13 (G)	0.68 JB	NA	1.0 JB	NA	0.82 JB	0.85 JB
Copper (dissolved)		ug/L	13 (G)	NA	NA	NA	NA	NA	NA
Iron (dissolved)		ug/L	NA	14000 B	NA	6400 B	NA	6700 B	6300 B
Lead		ug/L	29 (G,X)	0.59 JB	NA	0.66 JB	NA	0.37 JB	0.45 JB
Lead (dissolved)		ug/L	29 (G,X)	NA	NA	NA	NA	NA	NA
Manganese		ug/L	2,800 (G,X)	1400	NA	1200	NA	1200	1300
Manganese (dissolved)		ug/L	2,800 (G,X)	1300	NA	1200	NA	1300	1300
Mercury		ug/L	0.0013	< 0.20	NA	< 0.20	NA	< 0.20	< 0.20
Mercury (dissolved)		ug/L	0.0013	NA	NA	NA	NA	NA	NA
Nickel		ug/L	73 (G)	2.7	NA	4.2	NA	6.7 B	7.1 B
Nickel (dissolved)		ug/L	73 (G)	NA	NA	NA	NA	NA	NA
Selenium		ug/L	5	< 2.0	NA	0.47 J	NA	0.38 J	0.53 J
Selenium (dissolved)		ug/L	5	NA	NA	NA	NA	NA	NA
Silver		ug/L	0.2 (M); 0.06	NA	NA	NA	NA	NA	NA
Silver (dissolved)		ug/L	0.2 (M); 0.06	NA	NA	NA	NA	NA	NA
Thallium		ug/L	3.7 (X)	< 1.0	NA	< 1.0	NA	< 1.0	< 1.0
Thallium (dissolved)		ug/L	3.7 (X)	NA	NA	NA	NA	NA	NA
Vanadium		ug/L	27	0.19 J	NA	< 4.0	NA	< 4.0	< 4.0
Vanadium (dissolved)		ug/L	27	NA	NA	NA	NA	NA	NA
Zinc		ug/L	170 (G)	< 10	NA	4.9 J	NA	2.5 JB	2.5 JB
Zinc (dissolved)		ug/L	170 (G)	NA	NA	NA	NA	NA	NA

See Notes on last page.

Table 2
Groundwater Analytical Data
RACER Trust
Pontiac North Campus
Pontiac, Michigan

Chemical Name	Location Code:	Units	GSI	TW-MD-02	TW-MD-02	TW-MD-03	TW-MD-03	TW-MD-04	TW-MD-04
	Sample Code: Matrix Code: Sample Date:			TW-MD-02(072914) WG 7/29/2014	TW-MD-02_090414 WG 9/4/2014	TW-MD-03(072914) WG 7/29/2014	TW-MD-03_090414 WG 9/4/2014	DUP-01(073014) WG 7/30/2014	TW-MD-04(073014) WG 7/30/2014
PCBs									
Aroclor-1016 (PCB-1016)		ug/L	0.2(M)	< 0.10	< 0.097	< 0.10	< 0.11	< 0.097	< 0.10
Aroclor-1016 (PCB-1016) (dissolved)		ug/L	0.2(M)	NA	< 0.098	NA	< 0.11	NA	NA
Aroclor-1221 (PCB-1221)		ug/L	0.2(M)	< 0.10	< 0.097	< 0.10	< 0.11	< 0.097	< 0.10
Aroclor-1221 (PCB-1221) (dissolved)		ug/L	0.2(M)	NA	< 0.098	NA	< 0.11	NA	NA
Aroclor-1232 (PCB-1232)		ug/L	0.2(M)	< 0.10	< 0.097	< 0.10	< 0.11	< 0.097	< 0.10
Aroclor-1232 (PCB-1232) (dissolved)		ug/L	0.2(M)	NA	< 0.098	NA	< 0.11	NA	NA
Aroclor-1242 (PCB-1242)		ug/L	0.2(M)	< 0.10	< 0.097	< 0.10	< 0.11	< 0.097	< 0.10
Aroclor-1242 (PCB-1242) (dissolved)		ug/L	0.2(M)	NA	< 0.098	NA	< 0.11	NA	NA
Aroclor-1248 (PCB-1248)		ug/L	0.2(M)	< 0.10	< 0.097	< 0.10	< 0.11	< 0.097	< 0.10
Aroclor-1248 (PCB-1248) (dissolved)		ug/L	0.2(M)	NA	< 0.098	NA	< 0.11	NA	NA
Aroclor-1254 (PCB-1254)		ug/L	0.2(M)	< 0.10	< 0.097	< 0.10	< 0.11	< 0.097	< 0.10
Aroclor-1254 (PCB-1254) (dissolved)		ug/L	0.2(M)	NA	< 0.098	NA	< 0.11	NA	NA
Aroclor-1260 (PCB-1260)		ug/L	0.2(M)	< 0.10	< 0.097	< 0.10	< 0.11	< 0.097	< 0.10
Aroclor-1260 (PCB-1260) (dissolved)		ug/L	0.2(M)	NA	< 0.098	NA	< 0.11	NA	NA
Volatile Organic Compounds									
1,1,1-Trichloroethane		ug/L	89	NA	< 1.0	NA	< 1.0	NA	NA
1,1,2,2-Tetrachloroethane		ug/L	78 (X)	NA	< 1.0	NA	< 1.0	NA	NA
1,1,2-Trichloroethane		ug/L	330 (X)	NA	< 1.0	NA	< 1.0	NA	NA
1,1-Dichloroethane		ug/L	740	NA	< 1.0	NA	< 1.0	NA	NA
1,1-Dichloroethene		ug/L	130	NA	< 1.0	NA	< 1.0	NA	NA
1,2,4-Trichlorobenzene		ug/L	99 (X)	NA	< 1.0	NA	< 1.0	NA	NA
1,2-Dibromo-3-chloropropane (DBCP)		ug/L	0.0 ID	NA	< 1.0	NA	< 1.0	NA	NA
1,2-Dibromoethane (Ethylene dibromide)		ug/L	5.7 (X)	NA	< 1.0	NA	< 1.0	NA	NA
1,2-Dichlorobenzene		ug/L	13	NA	< 1.0	NA	< 1.0	NA	NA
1,2-Dichloroethane		ug/L	360 (X)	NA	< 1.0	NA	< 1.0	NA	NA
1,2-Dichloropropane		ug/L	230 (X)	NA	< 1.0	NA	< 1.0	NA	NA
1,3-Dichlorobenzene		ug/L	28	NA	< 1.0	NA	< 1.0	NA	NA
1,4-Dichlorobenzene		ug/L	17	NA	< 1.0	NA	< 1.0	NA	NA
2-Butanone (Methyl ethyl ketone) (MEK)		ug/L	2,200	NA	< 25	NA	< 25	NA	NA
2-Hexanone		ug/L	ID	NA	< 50	NA	< 50	NA	NA
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)		ug/L	ID	NA	< 50	NA	< 50	NA	NA
Acetone		ug/L	1,700	NA	7.5 J	NA	< 25	NA	NA
Benzene		ug/L	200 (X)	NA	< 1.0	NA	< 1.0	NA	NA
Bromodichloromethane		ug/L	0.0 ID	NA	< 1.0	NA	< 1.0	NA	NA
Bromoform		ug/L	0.0 ID	NA	< 1.0	NA	< 1.0	NA	NA
Bromomethane (Methyl bromide)		ug/L	35	NA	< 1.0	NA	< 1.0	NA	NA

See Notes on last page.

Table 2
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RACER Trust
Pontiac North Campus
Pontiac, Michigan

Chemical Name	Location Code:	Units	GSI	TW-MD-02	TW-MD-02	TW-MD-03	TW-MD-03	TW-MD-04	TW-MD-04
	Sample Code: Matrix Code: Sample Date:			TW-MD-02(072914) WG 7/29/2014	TW-MD-02_090414 WG 9/4/2014	TW-MD-03(072914) WG 7/29/2014	TW-MD-03_090414 WG 9/4/2014	DUP-01(073014) WG 7/30/2014	TW-MD-04(073014) WG 7/30/2014
Carbon disulfide		ug/L	0.0 ID	NA	< 5.0	NA	< 5.0	NA	NA
Carbon tetrachloride		ug/L	45 (X)	NA	< 1.0	NA	< 1.0	NA	NA
Chlorobenzene		ug/L	25	NA	< 1.0	NA	< 1.0	NA	NA
Chloroethane		ug/L	1,100 (X)	NA	< 1.0	NA	< 1.0	NA	NA
Chloroform (Trichloromethane)		ug/L	350	NA	< 1.0	NA	< 1.0	NA	NA
Chloromethane (Methyl chloride)		ug/L	0.0 ID	NA	< 1.0	NA	< 1.0	NA	NA
cis-1,2-Dichloroethene		ug/L	620	NA	< 1.0	NA	< 1.0	NA	NA
cis-1,3-Dichloropropene		ug/L	NA	NA	< 1.0	NA	< 1.0	NA	NA
Cyclohexane		ug/L	NA	NA	< 1.0	NA	< 1.0	NA	NA
Dibromochloromethane		ug/L	0.0 ID	NA	< 1.0	NA	< 1.0	NA	NA
Dichlorodifluoromethane (CFC-12)		ug/L	0.0 ID	NA	< 1.0	NA	< 1.0	NA	NA
Ethylbenzene		ug/L	18	NA	< 1.0	NA	< 1.0	NA	NA
Isopropyl benzene		ug/L	28	NA	< 5.0	NA	< 5.0	NA	NA
Methyl acetate		ug/L	NA	NA	< 10	NA	< 10	NA	NA
Methyl cyclohexane		ug/L	NA	NA	< 1.0	NA	< 1.0	NA	NA
Methyl tert butyl ether (MTBE)		ug/L	7,100 (X)	NA	< 5.0	NA	< 5.0	NA	NA
Methylene chloride		ug/L	1,500 (X)	NA	< 5.0	NA	< 5.0	NA	NA
Styrene		ug/L	80 (X)	NA	< 1.0	NA	< 1.0	NA	NA
Tetrachloroethene		ug/L	60 (X)	NA	< 1.0	NA	< 1.0	NA	NA
Toluene		ug/L	270	NA	< 1.0	NA	< 1.0	NA	NA
trans-1,2-Dichloroethene		ug/L	1,500 (X)	NA	< 1.0	NA	< 1.0	NA	NA
trans-1,3-Dichloropropene		ug/L	NA	NA	< 1.0	NA	< 1.0	NA	NA
Trichloroethene		ug/L	200 (X)	NA	< 1.0	NA	< 1.0	NA	NA
Trichlorofluoromethane (CFC-11)		ug/L	0.0	NA	< 1.0	NA	< 1.0	NA	NA
Trifluorotrchloroethane (Freon 113)		ug/L	32	NA	< 1.0	NA	< 1.0	NA	NA
Vinyl chloride		ug/L	13 (X)	NA	< 1.0	NA	< 1.0	NA	NA
Xylene (total)		ug/L	41	NA	< 2.0	NA	< 2.0	NA	NA
Semivolatile Organic Compounds									
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)		ug/L	NA	NA	< 10	NA	< 9.6	NA	NA
2,4,5-Trichlorophenol		ug/L	0.0	NA	< 50	NA	< 48	NA	NA
2,4,6-Trichlorophenol		ug/L	5	NA	< 40	NA	< 38	NA	NA
2,4-Dichlorophenol		ug/L	11	NA	< 100	NA	< 96	NA	NA
2,4-Dimethylphenol		ug/L	380	NA	< 50	NA	< 48	NA	NA
2,4-Dinitrophenol		ug/L	NA	NA	< 200	NA	< 190	NA	NA
2,4-Dinitrotoluene		ug/L	0.0	NA	< 50	NA	< 48	NA	NA
2,6-Dinitrotoluene		ug/L	NA	NA	< 50	NA	< 48	NA	NA
2-Chloronaphthalene		ug/L	0.0	NA	< 50	NA	< 48	NA	NA
2-Chlorophenol		ug/L	18	NA	< 50	NA	< 48	NA	NA
2-Methylnaphthalene		ug/L	19	NA	< 50	NA	< 48	NA	NA
2-Methylphenol		ug/L	NA	NA	< 50	NA	< 48	NA	NA

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RACER Trust
Pontiac North Campus
Pontiac, Michigan

Chemical Name	Location Code:	Units	GSI	TW-MD-02	TW-MD-02	TW-MD-03	TW-MD-03	TW-MD-04	TW-MD-04
	Sample Code: Matrix Code: Sample Date:			TW-MD-02(072914) WG 7/29/2014	TW-MD-02_090414 WG 9/4/2014	TW-MD-03(072914) WG 7/29/2014	TW-MD-03_090414 WG 9/4/2014	DUP-01(073014) WG 7/30/2014	TW-MD-04(073014) WG 7/30/2014
2-Nitroaniline		ug/L	NA	NA	< 200	NA	< 190	NA	NA
2-Nitrophenol		ug/L	0.0 ID	NA	< 50	NA	< 48	NA	NA
3,3'-Dichlorobenzidine		ug/L	0.3 (M); 0.2	NA	< 50	NA	< 48	NA	NA
3-Nitroaniline		ug/L	NA	NA	< 200	NA	< 190	NA	NA
4,6-Dinitro-2-methylphenol		ug/L	NA	NA	< 200	NA	< 190	NA	NA
4-Bromophenyl phenyl ether		ug/L	NA	NA	< 50	NA	< 48	NA	NA
4-Chloro-3-methylphenol		ug/L	7.4	NA	< 50	NA	< 48	NA	NA
4-Chloroaniline		ug/L	NA	NA	< 20	NA	< 19	NA	NA
4-Chlorophenyl phenyl ether		ug/L	NA	NA	< 50	NA	< 48	NA	NA
4-Methylphenol		ug/L	NA	NA	< 50	NA	< 48	NA	NA
4-Nitroaniline		ug/L	NA	NA	< 200	NA	< 190	NA	NA
4-Nitrophenol		ug/L	NA	NA	< 200	NA	< 190	NA	NA
Acenaphthene		ug/L	38	NA	< 50	NA	< 48	NA	NA
Acenaphthylene		ug/L	0.0 ID	NA	< 50	NA	< 48	NA	NA
Acetophenone		ug/L	0.0 ID	NA	< 10	NA	< 9.6	NA	NA
Anthracene		ug/L	0.0 ID	NA	< 50	NA	< 48	NA	NA
Atrazine		ug/L	7.3	NA	< 10	NA	< 9.6	NA	NA
Benzaldehyde		ug/L	NA	NA	< 10 *	NA	< 9.6 *	NA	NA
Benzo(a)anthracene		ug/L	0.0 ID	NA	< 10	NA	< 9.6	NA	NA
Benzo(a)pyrene		ug/L	0.0 ID	NA	< 10	NA	< 9.6	NA	NA
Benzo(b)fluoranthene		ug/L	0.0 ID	NA	< 10	NA	< 9.6	NA	NA
Benzo(g,h,i)perylene		ug/L	0.0 ID	NA	< 10	NA	< 9.6	NA	NA
Benzo(k)fluoranthene		ug/L	0.0	NA	< 10	NA	< 9.6	NA	NA
Biphenyl (1,1-Biphenyl)		ug/L	NA	NA	< 10	NA	< 9.6	NA	NA
bis(2-Chloroethoxy)methane		ug/L	NA	NA	< 50	NA	< 48	NA	NA
bis(2-Chloroethyl)ether		ug/L	1 (M); 0.79	NA	< 10	NA	< 9.6	NA	NA
bis(2-Ethylhexyl)phthalate (DEHP)		ug/L	25	NA	2.9 JB	NA	2.5 JB	NA	NA
Butyl benzylphthalate (BBP)		ug/L	67 (X)	NA	< 50	NA	< 48	NA	NA
Caprolactam		ug/L	NA	NA	4.8 JB	NA	< 48	NA	NA
Carbazole		ug/L	10 (M); 4.0	NA	< 100	NA	< 96	NA	NA
Chrysene		ug/L	0.0 ID	NA	< 10	NA	< 9.6	NA	NA
Dibenz(a,h)anthracene		ug/L	0.0 ID	NA	< 20	NA	< 19	NA	NA
Dibenzofuran		ug/L	4	NA	< 40	NA	< 38	NA	NA
Diethyl phthalate		ug/L	110	NA	< 50	NA	< 48	NA	NA
Dimethyl phthalate		ug/L	0.0	NA	< 50	NA	< 48	NA	NA
Di-n-butylphthalate (DBP)		ug/L	9.7	NA	1.7 JB	NA	0.76 JB	NA	NA
Di-n-octyl phthalate (DnOP)		ug/L	0.0 ID	NA	< 50	NA	< 48	NA	NA
Fluoranthene		ug/L	1.6	NA	< 10	NA	< 9.6	NA	NA
Fluorene		ug/L	12	NA	< 50	NA	< 48	NA	NA

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RACER Trust
Pontiac North Campus
Pontiac, Michigan

Chemical Name	Location Code:	Units	GSI	TW-MD-02	TW-MD-02	TW-MD-03	TW-MD-03	TW-MD-04	TW-MD-04
	Sample Code:			TW-MD-02(072914)	TW-MD-02_090414	TW-MD-03(072914)	TW-MD-03_090414	DUP-01(073014)	TW-MD-04(073014)
	Matrix Code:			WG	WG	WG	WG	WG	WG
	Sample Date:			7/29/2014	9/4/2014	7/29/2014	9/4/2014	7/30/2014	7/30/2014
Hexachlorobenzene		ug/L	0.2 (M); 0.0003	NA	< 2.0	NA	< 1.9	NA	NA
Hexachlorobutadiene		ug/L	0.053	NA	< 10	NA	< 9.6	NA	NA
Hexachlorocyclopentadiene		ug/L	0.0 ID	NA	< 50	NA	< 48	NA	NA
Hexachloroethane		ug/L	6.7 (X)	NA	< 50	NA	< 48	NA	NA
Indeno(1,2,3-cd)pyrene		ug/L	0.0 ID	NA	< 20	NA	< 19	NA	NA
Isophorone		ug/L	1,300 (X)	NA	< 50	NA	< 48	NA	NA
Naphthalene		ug/L	11	NA	< 50	NA	< 48	NA	NA
Nitrobenzene		ug/L	180 (X)	NA	< 30	NA	< 29	NA	NA
N-Nitrosodi-n-propylamine		ug/L	0.0	NA	< 50	NA	< 48	NA	NA
N-Nitrosodiphenylamine		ug/L	0.0	NA	< 50	NA	< 48	NA	NA
Pentachlorophenol		ug/L	0.0 (G,X)	NA	< 50	NA	< 48	NA	NA
Phenanthrene		ug/L	2 (M); 1.4	NA	< 20	NA	< 19	NA	NA
Phenol		ug/L	450	NA	< 50	NA	< 48	NA	NA
Pyrene		ug/L	0.0 ID	NA	< 50	NA	< 48	NA	NA
Field Parameters									
Turbidity		NTU		3.47	4.29	3.89	4.99	3.23	3.23

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Table 2
Groundwater Analytical Data
RACER Trust
Pontiac North Campus
Pontiac, Michigan

Location Code: Sample Code: Matrix Code: Sample Date:	Units	GSI	TW-MD-04 DUP-01_090414 WG 9/4/2014	TW-MD-04 TW-MD-04_090414 WG 9/4/2014	TW-MD-05 TW-MD-05(073014) WG 7/30/2014	TW-MD-05 TW-MD-05_090514 WG 9/5/2014	TW-MD-06 TW-MD-06(080114) WG 8/1/2014	TW-MD-06 TW-MD-06_090914 WG 9/9/2014	TW-MD-07 TW-MD-07(073014) WG 7/30/2014	TW-MD-07 TW-MD-07_090514 WG 9/5/2014
Miscellaneous										
Alkalinity, total (as CaCO3)	mg/L	NA	NA	NA	< 5.0	NA	430	NA	NA	NA
Ammonia	mg/L	NA	NA	NA	9.7	NA	7.1	NA	NA	NA
Cyanide (total)	mg/L	0.0052	NA	NA	0.0026 J	NA	0.0033 J	NA	NA	NA
Nitrite (as N)	mg/L	NA	NA	NA	< 0.10	NA	< 0.10	NA	NA	NA
pH	ph units	6.5 to 9.0	NA	NA	7.22 H	NA	7.61	NA	NA	NA
Phosphate, total	mg/L	NA	NA	NA	0.40	NA	0.40	NA	NA	NA
Sulfate	mg/L	NA	NA	NA	1.3	NA	5.6	NA	NA	NA
Sulfide	mg/L	NA	NA	NA	< 3.0	NA	< 3.0	NA	NA	NA
Total dissolved solids (TDS)	mg/L	NA	NA	NA	620	NA	910	NA	NA	NA
Inorganics										
Antimony	ug/L	130 (X)	NA	NA	0.40 JB	NA	0.24 JB	NA	0.27 JB	NA
Antimony (dissolved)	ug/L	130 (X)	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	ug/L	10	NA	NA	3.2 B	NA	7.9 B	NA	2.6 B	NA
Arsenic (dissolved)	ug/L	10	NA	NA	NA	NA	NA	NA	NA	NA
Barium	ug/L	670 (G)	NA	NA	98 B	NA	160 B	NA	230 B	NA
Barium (dissolved)	ug/L	670 (G)	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	ug/L	6.7 (G)	NA	NA	0.054 J	NA	< 1.0	NA	< 1.0	NA
Beryllium (dissolved)	ug/L	6.7 (G)	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	ug/L	3.0 (G,X)	NA	NA	< 0.50	NA	< 0.50	NA	< 0.50	NA
Cadmium (dissolved)	ug/L	3.0 (G,X)	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	ug/L	100	NA	NA	0.52 JB	NA	0.48 JB	NA	0.33 JB	NA
Chromium Total (dissolved)	ug/L	100	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	ug/L	100	NA	NA	0.84 J	NA	0.85 J	NA	0.49 J	NA
Cobalt (dissolved)	ug/L	100	NA	NA	NA	NA	NA	NA	NA	NA
Copper	ug/L	13 (G)	NA	NA	0.62 JB	NA	1.1 JB	NA	0.50 JB	NA
Copper (dissolved)	ug/L	13 (G)	NA	NA	NA	NA	NA	NA	NA	NA
Iron (dissolved)	ug/L	NA	NA	NA	8600 B	NA	11000 B	NA	20000 B	NA
Lead	ug/L	29 (G,X)	NA	NA	0.70 JB	NA	1.1 B	NA	0.28 JB	NA
Lead (dissolved)	ug/L	29 (G,X)	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	ug/L	2,800 (G,X)	NA	NA	650	NA	1600	NA	220	NA
Manganese (dissolved)	ug/L	2,800 (G,X)	NA	NA	720	NA	1600	NA	220	NA
Mercury	ug/L	0.0013	NA	NA	< 0.20	NA	< 0.20	NA	< 0.20	NA
Mercury (dissolved)	ug/L	0.0013	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	ug/L	73 (G)	NA	NA	3.1 B	NA	2.9 B	NA	1.4 JB	NA
Nickel (dissolved)	ug/L	73 (G)	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	ug/L	5	NA	NA	0.57 J	NA	0.56 J	NA	0.56 J	NA
Selenium (dissolved)	ug/L	5	NA	NA	NA	NA	NA	NA	NA	NA
Silver	ug/L	0.2 (M); 0.06	NA	NA	NA	NA	NA	NA	NA	NA
Silver (dissolved)	ug/L	0.2 (M); 0.06	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	ug/L	3.7 (X)	NA	NA	< 1.0	NA	< 1.0	NA	< 1.0	NA
Thallium (dissolved)	ug/L	3.7 (X)	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	ug/L	27	NA	NA	< 4.0	NA	< 4.0	NA	< 4.0	NA
Vanadium (dissolved)	ug/L	27	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	ug/L	170 (G)	NA	NA	< 10	NA	2.1 JB	NA	< 10	NA
Zinc (dissolved)	ug/L	170 (G)	NA	NA	NA	NA	NA	NA	NA	NA

See Notes on last page.

Table 2
Groundwater Analytical Data
RACER Trust
Pontiac North Campus
Pontiac, Michigan

Location Code: Sample Code: Matrix Code: Sample Date:	Units	GSI	TW-MD-04 DUP-01_090414 WG 9/4/2014	TW-MD-04 TW-MD-04_090414 WG 9/4/2014	TW-MD-05 TW-MD-05(073014) WG 7/30/2014	TW-MD-05 TW-MD-05_090514 WG 9/5/2014	TW-MD-06 TW-MD-06(080114) WG 8/1/2014	TW-MD-06 TW-MD-06_090914 WG 9/9/2014	TW-MD-07 TW-MD-07(073014) WG 7/30/2014	TW-MD-07 TW-MD-07_090514 WG 9/5/2014
PCBs										
Aroclor-1016 (PCB-1016)	ug/L	0.2(M)	< 0.098	< 0.10	< 0.099	< 0.10	< 0.098	< 0.097	< 0.11	< 0.099
Aroclor-1016 (PCB-1016) (dissolved)	ug/L	0.2(M)	< 0.11	< 0.098	NA	< 0.099	NA	< 0.097	NA	< 0.098
Aroclor-1221 (PCB-1221)	ug/L	0.2(M)	< 0.098	< 0.10	< 0.099	< 0.10	< 0.098	< 0.097	< 0.11	< 0.099
Aroclor-1221 (PCB-1221) (dissolved)	ug/L	0.2(M)	< 0.11	< 0.098	NA	< 0.099	NA	< 0.097	NA	< 0.098
Aroclor-1232 (PCB-1232)	ug/L	0.2(M)	< 0.098	< 0.10	< 0.099	< 0.10	< 0.098	< 0.097	< 0.11	< 0.099
Aroclor-1232 (PCB-1232) (dissolved)	ug/L	0.2(M)	< 0.11	< 0.098	NA	< 0.099	NA	< 0.097	NA	< 0.098
Aroclor-1242 (PCB-1242)	ug/L	0.2(M)	< 0.098	< 0.10	< 0.099	< 0.10	0.23	< 0.097	< 0.11	< 0.099
Aroclor-1242 (PCB-1242) (dissolved)	ug/L	0.2(M)	< 0.11	< 0.098	NA	< 0.099	NA	< 0.097	NA	< 0.098
Aroclor-1248 (PCB-1248)	ug/L	0.2(M)	< 0.098	< 0.10	< 0.099	< 0.10	< 0.098	0.17	< 0.11	< 0.099
Aroclor-1248 (PCB-1248) (dissolved)	ug/L	0.2(M)	< 0.11	< 0.098	NA	< 0.099	NA	< 0.097	NA	< 0.098
Aroclor-1254 (PCB-1254)	ug/L	0.2(M)	< 0.098	< 0.10	< 0.099	< 0.10	< 0.098	< 0.097	< 0.11	< 0.099
Aroclor-1254 (PCB-1254) (dissolved)	ug/L	0.2(M)	< 0.11	< 0.098	NA	< 0.099	NA	< 0.097	NA	< 0.098
Aroclor-1260 (PCB-1260)	ug/L	0.2(M)	< 0.098	< 0.10	< 0.099	< 0.10	< 0.098	< 0.097	< 0.11	< 0.099
Aroclor-1260 (PCB-1260) (dissolved)	ug/L	0.2(M)	< 0.11	< 0.098	NA	< 0.099	NA	< 0.097	NA	< 0.098
Volatile Organic Compounds										
1,1,1-Trichloroethane	ug/L	89	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
1,1,2,2-Tetrachloroethane	ug/L	78 (X)	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
1,1,2-Trichloroethane	ug/L	330 (X)	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
1,1-Dichloroethane	ug/L	740	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
1,1-Dichloroethene	ug/L	130	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
1,2,4-Trichlorobenzene	ug/L	99 (X)	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.0 ID	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
1,2-Dibromoethane (Ethylene dibromide)	ug/L	5.7 (X)	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
1,2-Dichlorobenzene	ug/L	13	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
1,2-Dichloroethane	ug/L	360 (X)	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
1,2-Dichloropropane	ug/L	230 (X)	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
1,3-Dichlorobenzene	ug/L	28	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
1,4-Dichlorobenzene	ug/L	17	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	2,200	< 25	< 25	NA	< 25	NA	< 25	NA	< 25
2-Hexanone	ug/L	ID	< 50	< 50	NA	< 50	NA	< 50	NA	< 50
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	ID	< 50	< 50	NA	< 50	NA	< 50	NA	< 50
Acetone	ug/L	1,700	< 25	< 25	NA	4.2 J	NA	< 25	NA	< 25
Benzene	ug/L	200 (X)	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
Bromodichloromethane	ug/L	0.0 ID	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
Bromoform	ug/L	0.0 ID	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
Bromomethane (Methyl bromide)	ug/L	35	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0

See Notes on last page.

Table 2
Groundwater Analytical Data
RACER Trust
Pontiac North Campus
Pontiac, Michigan

Chemical Name	Location Code:	Units	GSI	TW-MD-04	TW-MD-04	TW-MD-05	TW-MD-05	TW-MD-06	TW-MD-06	TW-MD-07	TW-MD-07
	Sample Code:			DUP-01_090414	TW-MD-04_090414	TW-MD-05(073014)	TW-MD-05_090514	TW-MD-06(080114)	TW-MD-06_090914	TW-MD-07(073014)	TW-MD-07_090514
Matrix Code:	Sample Date:			WG	WG	WG	WG	WG	WG	WG	WG
				9/4/2014	9/4/2014	7/30/2014	9/5/2014	8/1/2014	9/9/2014	7/30/2014	9/5/2014
Carbon disulfide		ug/L	0.0 ID	< 5.0	< 5.0	NA	< 5.0	NA	< 5.0	NA	< 5.0
Carbon tetrachloride		ug/L	45 (X)	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
Chlorobenzene		ug/L	25	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
Chloroethane		ug/L	1,100 (X)	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
Chloroform (Trichloromethane)		ug/L	350	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
Chloromethane (Methyl chloride)		ug/L	0.0 ID	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
cis-1,2-Dichloroethene		ug/L	620	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
cis-1,3-Dichloropropene		ug/L	NA	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
Cyclohexane		ug/L	NA	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
Dibromochloromethane		ug/L	0.0 ID	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
Dichlorodifluoromethane (CFC-12)		ug/L	0.0 ID	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
Ethylbenzene		ug/L	18	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
Isopropyl benzene		ug/L	28	< 5.0	< 5.0	NA	< 5.0	NA	< 5.0	NA	< 5.0
Methyl acetate		ug/L	NA	< 10	< 10	NA	< 10	NA	< 10	NA	< 10
Methyl cyclohexane		ug/L	NA	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
Methyl tert butyl ether (MTBE)		ug/L	7,100 (X)	< 5.0	< 5.0	NA	< 5.0	NA	< 5.0	NA	< 5.0
Methylene chloride		ug/L	1,500 (X)	< 5.0	< 5.0	NA	< 5.0	NA	< 5.0	NA	< 5.0
Styrene		ug/L	80 (X)	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
Tetrachloroethene		ug/L	60 (X)	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
Toluene		ug/L	270	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
trans-1,2-Dichloroethene		ug/L	1,500 (X)	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
trans-1,3-Dichloropropene		ug/L	NA	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
Trichloroethene		ug/L	200 (X)	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
Trichlorofluoromethane (CFC-11)		ug/L	0.0	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
Trifluorotrchloroethane (Freon 113)		ug/L	32	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
Vinyl chloride		ug/L	13 (X)	< 1.0	< 1.0	NA	< 1.0	NA	< 1.0	NA	< 1.0
Xylene (total)		ug/L	41	< 2.0	< 2.0	NA	< 2.0	NA	< 2.0	NA	< 2.0
Semivolatile Organic Compounds											
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)		ug/L	NA	< 9.6	< 9.6	NA	< 9.6	NA	< 9.6	NA	< 9.6
2,4,5-Trichlorophenol		ug/L	0.0	< 48	< 48	NA	< 48	NA	< 48 *	NA	< 48
2,4,6-Trichlorophenol		ug/L	5	< 38	< 38	NA	< 38	NA	< 38 *	NA	< 38
2,4-Dichlorophenol		ug/L	11	< 96	< 96	NA	< 96	NA	< 96	NA	< 96
2,4-Dimethylphenol		ug/L	380	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
2,4-Dinitrophenol		ug/L	NA	< 190	< 190	NA	< 190	NA	< 190 *	NA	< 190
2,4-Dinitrotoluene		ug/L	0.0	< 48	< 48	NA	< 48	NA	< 48 *	NA	< 48
2,6-Dinitrotoluene		ug/L	NA	< 48	< 48	NA	< 48	NA	< 48 *	NA	< 48
2-Chloronaphthalene		ug/L	0.0	< 48	< 48	NA	< 48	NA	< 48 *	NA	< 48
2-Chlorophenol		ug/L	18	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
2-Methylnaphthalene		ug/L	19	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
2-Methylphenol		ug/L	NA	< 48	< 48	NA	< 48	NA	< 48	NA	< 48

See Notes on last page.

Table 2
Groundwater Analytical Data
RACER Trust
Pontiac North Campus
Pontiac, Michigan

Location Code: Sample Code: Matrix Code: Sample Date:	Units	GSI	TW-MD-04 DUP-01_090414 WG 9/4/2014	TW-MD-04 TW-MD-04_090414 WG 9/4/2014	TW-MD-05 TW-MD-05(073014) WG 7/30/2014	TW-MD-05 TW-MD-05_090514 WG 9/5/2014	TW-MD-06 TW-MD-06(080114) WG 8/1/2014	TW-MD-06 TW-MD-06_090914 WG 9/9/2014	TW-MD-07 TW-MD-07(073014) WG 7/30/2014	TW-MD-07 TW-MD-07_090514 WG 9/5/2014
2-Nitroaniline	ug/L	NA	< 190	< 190	NA	< 190	NA	< 190 *	NA	< 190
2-Nitrophenol	ug/L	0.0 ID	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
3,3'-Dichlorobenzidine	ug/L	0.3 (M); 0.2	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
3-Nitroaniline	ug/L	NA	< 190	< 190	NA	< 190	NA	< 190 *	NA	< 190
4,6-Dinitro-2-methylphenol	ug/L	NA	< 190	< 190	NA	< 190	NA	< 190	NA	< 190
4-Bromophenyl phenyl ether	ug/L	NA	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
4-Chloro-3-methylphenol	ug/L	7.4	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
4-Chloroaniline	ug/L	NA	< 19	< 19	NA	< 19	NA	< 19	NA	< 19
4-Chlorophenyl phenyl ether	ug/L	NA	< 48	< 48	NA	< 48	NA	< 48 *	NA	< 48
4-Methylphenol	ug/L	NA	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
4-Nitroaniline	ug/L	NA	< 190	< 190	NA	< 190	NA	< 190 *	NA	< 190
4-Nitrophenol	ug/L	NA	< 190	< 190	NA	< 190	NA	< 190 *	NA	< 190
Acenaphthene	ug/L	38	< 48	< 48	NA	< 48	NA	< 48 *	NA	< 48
Acenaphthylene	ug/L	0.0 ID	< 48	< 48	NA	< 48	NA	< 48 *	NA	< 48
Acetophenone	ug/L	0.0 ID	< 9.6	< 9.6	NA	< 9.6	NA	< 9.6	NA	< 9.6
Anthracene	ug/L	0.0 ID	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
Atrazine	ug/L	7.3	< 9.6	< 9.6	NA	< 9.6	NA	< 9.6	NA	< 9.6
Benzaldehyde	ug/L	NA	< 9.6 *	< 9.6 *	NA	< 9.6 *	NA	< 9.6 *	NA	< 9.6 *
Benzo(a)anthracene	ug/L	0.0 ID	< 9.6	< 9.6	NA	< 9.6	NA	< 9.6	NA	< 9.6
Benzo(a)pyrene	ug/L	0.0 ID	< 9.6	< 9.6	NA	< 9.6	NA	< 9.6	NA	< 9.6
Benzo(b)fluoranthene	ug/L	0.0 ID	< 9.6	< 9.6	NA	< 9.6	NA	< 9.6	NA	< 9.6
Benzo(g,h,i)perylene	ug/L	0.0 ID	< 9.6	< 9.6	NA	< 9.6	NA	< 9.6	NA	< 9.6
Benzo(k)fluoranthene	ug/L	0.0	< 9.6	< 9.6	NA	< 9.6	NA	< 9.6	NA	< 9.6
Biphenyl (1,1-Biphenyl)	ug/L	NA	< 9.6	< 9.6	NA	< 9.6	NA	< 9.6 *	NA	< 9.6
bis(2-Chloroethoxy)methane	ug/L	NA	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
bis(2-Chloroethyl)ether	ug/L	1 (M); 0.79	< 9.6	< 9.6	NA	< 9.6	NA	< 9.6	NA	< 9.6
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	25	2.3 JB	3.5 JB	NA	2.4 JB	NA	7.0 JB	NA	2.9 JB
Butyl benzylphthalate (BBP)	ug/L	67 (X)	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
Caprolactam	ug/L	NA	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
Carbazole	ug/L	10 (M); 4.0	< 96	< 96	NA	< 96	NA	< 96	NA	< 96
Chrysene	ug/L	0.0 ID	< 9.6	< 9.6	NA	< 9.6	NA	< 9.6	NA	< 9.6
Dibenz(a,h)anthracene	ug/L	0.0 ID	< 19	< 19	NA	< 19	NA	< 19	NA	< 19
Dibenzofuran	ug/L	4	< 38	< 38	NA	< 38	NA	< 38 *	NA	< 38
Diethyl phthalate	ug/L	110	< 48	< 48	NA	< 48	NA	< 48 *	NA	< 48
Dimethyl phthalate	ug/L	0.0	< 48	< 48	NA	< 48	NA	< 48 *	NA	< 48
Di-n-butylphthalate (DBP)	ug/L	9.7	2.6 JB	2.8 JB	NA	1.4 JB	NA	1.8 JB	NA	1.3 JB
Di-n-octyl phthalate (DnOP)	ug/L	0.0 ID	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
Fluoranthene	ug/L	1.6	< 9.6	< 9.6	NA	< 9.6	NA	< 9.6	NA	< 9.6
Fluorene	ug/L	12	< 48	< 48	NA	< 48	NA	< 48 *	NA	< 48

See Notes on last page.

Table 2
Groundwater Analytical Data
RACER Trust
Pontiac North Campus
Pontiac, Michigan

Location Code: Sample Code: Matrix Code: Sample Date:	Units	GSI	TW-MD-04 DUP-01_090414 WG 9/4/2014	TW-MD-04 TW-MD-04_090414 WG 9/4/2014	TW-MD-05 TW-MD-05(073014) WG 7/30/2014	TW-MD-05 TW-MD-05_090514 WG 9/5/2014	TW-MD-06 TW-MD-06(080114) WG 8/1/2014	TW-MD-06 TW-MD-06_090914 WG 9/9/2014	TW-MD-07 TW-MD-07(073014) WG 7/30/2014	TW-MD-07 TW-MD-07_090514 WG 9/5/2014
Hexachlorobenzene	ug/L	0.2 (M); 0.0003	< 1.9	< 1.9	NA	< 1.9	NA	< 1.9	NA	< 1.9
Hexachlorobutadiene	ug/L	0.053	< 9.6	< 9.6	NA	< 9.6	NA	< 9.6	NA	< 9.6
Hexachlorocyclopentadiene	ug/L	0.0 ID	< 48	< 48	NA	< 48	NA	< 48 *	NA	< 48
Hexachloroethane	ug/L	6.7 (X)	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
Indeno(1,2,3-cd)pyrene	ug/L	0.0 ID	< 19	< 19	NA	< 19	NA	< 19	NA	< 19
Isophorone	ug/L	1,300 (X)	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
Naphthalene	ug/L	11	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
Nitrobenzene	ug/L	180 (X)	< 29	< 29	NA	< 29	NA	< 29	NA	< 29
N-Nitrosodi-n-propylamine	ug/L	0.0	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
N-Nitrosodiphenylamine	ug/L	0.0	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
Pentachlorophenol	ug/L	0.0 (G,X)	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
Phenanthrene	ug/L	2 (M); 1.4	< 19	< 19	NA	< 19	NA	< 19	NA	< 19
Phenol	ug/L	450	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
Pyrene	ug/L	0.0 ID	< 48	< 48	NA	< 48	NA	< 48	NA	< 48
Field Parameters										
Turbidity	NTU		2.31	2.31	4.75	2.06	3.12	2.68	4.27	3.18

See Notes on last page.

**Table X
Groundwater Analytical Data
RACER
Pontiac North Campus
Montcalm Seep Area
Pontiac, Michigan**

General Notes:

1. Remediation and Redevelopment Operational Memorandum No. 1, Part 201 Cleanup Criteria and Part 213 Risk-Based Screening Levels, December 29, 2013.
2. Shaded result denotes exceedance of Groundwater Surface Water Interface (GSI) Criteria.

Footnote:

* LCS or LCSD exceeds the control limits.

Acronyms and Abbreviations:

B	Compound was found in the blank and sample
G	Groundwater surface water interface (GSI) criterion depends on the pH or waterhardness, or both, of the receiving surface water.
GSI	Groundwater Surface Water Interface
ID	Inadequate data to develop criterion
J	Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.
LCS	Laboratory control samples
LCSD	Laboratory control samples, duplicates
M	Calculated criterion is below the analytical target detection limit; therefore, the criterion defaults to the target detection limit.
mg/L	Milligrams per liter
NA	Not analyzed
U	Indicates the analyte was analyzed for but not detected
µg/L	Micrograms per liter
X	The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source.

Table 3
Surface Water Analytical
RACER Trust
Pontiac North Campus
Pontiac, Michigan

Location Code: Sample Code: Matrix: Sample Date:	Units	GSI Criteria	SW-1 MSW-070113-SW-1 WG 7/1/2013	SW-1 SW-01-DW(06.02.14) WG 6/2/2014	SW-1 SW-01-WW (06.12.14) WG 6/12/2014	SW-1 SW-01-WW (06.25.14) WG 6/25/2014	SW-1 SW-01-WW(05.13.14) WG 5/13/2014	SW-1 SW-01-WW(07.09.14) WG 7/9/2014
Miscellaneous								
pH	ph units	6.5-9.0	NA	7.18	6.90	7.21 H	7.53	6.93
Total suspended solids (TSS)	mg/L	NA	NA	2,100	13,000	7,600	110	170
Inorganics								
Antimony	ug/L	130 (X)	1.3 JB	20 B	57 B	15 B	3.6	0.19 J
Arsenic	ug/L	10	22 B	550 B	600 B	520 B	83 B	16 B
Barium	ug/L	670 (G)	200 B	1,700 B	2,100 B	1,200 B	440 B	160 B
Beryllium	ug/L	6.7 (G)	0.075 J	5.5	5.9 J	2.3	0.65 J	0.093 J
Cadmium	ug/L	3 (G,X)	0.29 J	14	25	7.8	2.4	< 0.50
Chromium	ug/L	100 (G,X)	6.8 B	450 B	570	240	58 B	0.67 JB
Cobalt	ug/L	100 (G,X)	1.7	53 B	70	30	11	0.42 JB
Copper	ug/L	13 (G)	17 B	690 B	1,000 B	390 B	89 B	1.1 JB
Lead	ug/L	29 (G,X)	40	1,600	2300	780	180	1.3
Manganese	ug/L	2,800 (G,X)	700 B	18,000 B	20,000 B	13,000	5,200 B	610 B
Mercury	ug/L	0.0013	< 0.20	0.97	0.91	0.37	< 0.20	< 0.20
Nickel	ug/L	73 (G)	11 B	300 B	440	170	40 B	1.7 JB
Selenium	ug/L	5	1.0 J	6.3	15 J	3.3	2.0 B	< 2.0
Silver	ug/L	0.2 (M); 0.06	0.063 JB	2.4 B	3.1	1.3	0.21	< 0.20
Thallium	ug/L	3.7 (X)	< 1.0	1.4	< 10	0.80 J	< 1.0	< 1.0
Vanadium	ug/L	27	3.8 JB	160	230	95 B	25	0.33 J
Zinc	ug/L	170 (G)	71 B	5,200 B	8,600 B	3,800 B	830 B	7.3 JB
PCBs								
Aroclor-1016 (PCB-1016)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	< 0.10	< 0.095	< 0.24	< 0.10	< 0.099
Aroclor-1221 (PCB-1221)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	< 0.10	< 0.095	< 0.24	< 0.10	< 0.099
Aroclor-1232 (PCB-1232)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	< 0.10	< 0.095	< 0.24	< 0.10	< 0.099
Aroclor-1242 (PCB-1242)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	< 0.10	< 0.095	< 0.24	< 0.10	< 0.099
Aroclor-1248 (PCB-1248)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	< 0.10	< 0.095	< 0.24	< 0.10	< 0.099
Aroclor-1254 (PCB-1254)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	0.069 J	0.14	< 0.24	< 0.10	< 0.099
Aroclor-1260 (PCB-1260)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	< 0.10	< 0.095	< 0.24	< 0.10	< 0.099
Volatile Organic Compounds								
1,1,1-Trichloroethane	ug/L	89	< 1.0	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	ug/L	78 (X)	< 1.0	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	ug/L	330 (X)	< 1.0	NA	NA	NA	NA	NA
1,1-Dichloroethane	ug/L	740	< 1.0	NA	NA	NA	NA	NA
1,1-Dichloroethene	ug/L	130	< 1.0	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	ug/L	99 (X)	< 1.0	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	ID	< 1.0	NA	NA	NA	NA	NA
1,2-Dibromoethane (Ethylene dibromide)	ug/L	5.7 (X)	< 1.0	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	ug/L	13	< 1.0	NA	NA	NA	NA	NA

**Table 3
Surface Water Analytical
RACER Trust
Pontiac North Campus
Pontiac, Michigan**

Location Code: Sample Code: Matrix: Sample Date:	Units	GSI Criteria	SW-1 MSW-070113-SW-1 WG 7/1/2013	SW-1 SW-01-DW(06.02.14) WG 6/2/2014	SW-1 SW-01-WW (06.12.14) WG 6/12/2014	SW-1 SW-01-WW (06.25.14) WG 6/25/2014	SW-1 SW-01-WW(05.13.14) WG 5/13/2014	SW-1 SW-01-WW(07.09.14) WG 7/9/2014
1,2-Dichloroethane	ug/L	360 (X)	< 1.0	NA	NA	NA	NA	NA
1,2-Dichloropropane	ug/L	230 (X)	< 1.0	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	ug/L	28	< 1.0	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	ug/L	17	< 1.0	NA	NA	NA	NA	NA
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	2,200	0.91 J	NA	NA	NA	NA	NA
2-Hexanone	ug/L	ID	< 50	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	ID	< 50	NA	NA	NA	NA	NA
Acetone	ug/L	1,700	3.8 J	NA	NA	NA	NA	NA
Benzene	ug/L	200 (X)	< 1.0	NA	NA	NA	NA	NA
Bromodichloromethane	ug/L	ID	< 1.0	NA	NA	NA	NA	NA
Bromoform	ug/L	ID	< 1.0	NA	NA	NA	NA	NA
Bromomethane (Methyl bromide)	ug/L	35	< 1.0	NA	NA	NA	NA	NA
Carbon disulfide	ug/L	ID	< 5.0	NA	NA	NA	NA	NA
Carbon tetrachloride	ug/L	45 (X)	< 1.0	NA	NA	NA	NA	NA
Chlorobenzene	ug/L	25	< 1.0	NA	NA	NA	NA	NA
Chloroethane	ug/L	1,100 (X)	< 1.0	NA	NA	NA	NA	NA
Chloroform (Trichloromethane)	ug/L	350	< 1.0	NA	NA	NA	NA	NA
Chloromethane (Methyl chloride)	ug/L	ID	< 1.0	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	ug/L	620	< 1.0	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene+trans (J)	ug/L	9 (X)	< 1.0	NA	NA	NA	NA	NA
Cyclohexane	ug/L	NA	< 1.0	NA	NA	NA	NA	NA
Dibromochloromethane	ug/L	ID	< 1.0	NA	NA	NA	NA	NA
Dichlorodifluoromethane (CFC-12)	ug/L	ID	< 1.0	NA	NA	NA	NA	NA
Ethylbenzene	ug/L	18	< 1.0	NA	NA	NA	NA	NA
Isopropyl benzene	ug/L	28	< 5.0	NA	NA	NA	NA	NA
Methyl acetate	ug/L	NA	< 10	NA	NA	NA	NA	NA
Methyl cyclohexane	ug/L	NA	< 1.0	NA	NA	NA	NA	NA
Methyl tert butyl ether (MTBE)	ug/L	7,100 (X)	< 5.0	NA	NA	NA	NA	NA
Methylene chloride	ug/L	1,500 (X)	< 5.0	NA	NA	NA	NA	NA
Styrene	ug/L	80 (X)	< 1.0	NA	NA	NA	NA	NA
Tetrachloroethene	ug/L	60 (X)	< 1.0	NA	NA	NA	NA	NA
Toluene	ug/L	270	0.15 J	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	ug/L	1,500 (X)	< 1.0	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene+cis (J)	ug/L	9 (X)	< 1.0	NA	NA	NA	NA	NA
Trichloroethene	ug/L	200 (X)	< 1.0	NA	NA	NA	NA	NA
Trichlorofluoromethane (CFC-11)	ug/L	NA	< 1.0	NA	NA	NA	NA	NA
Trifluorotrchloroethane (Freon 113)	ug/L	NA	< 1.0	NA	NA	NA	NA	NA
Vinyl chloride	ug/L	13 (X)	< 1.0	NA	NA	NA	NA	NA
Xylene (total)	ug/L	41	< 2.0	NA	NA	NA	NA	NA

Table 3
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Pontiac North Campus
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Location Code: Sample Code: Matrix: Sample Date:	Units	GSI Criteria	SW-1 MSW-070113-SW-1 WG 7/1/2013	SW-1 SW-01-DW(06.02.14) WG 6/2/2014	SW-1 SW-01-WW (06.12.14) WG 6/12/2014	SW-1 SW-01-WW (06.25.14) WG 6/25/2014	SW-1 SW-01-WW(05.13.14) WG 5/13/2014	SW-1 SW-01-WW(07.09.14) WG 7/9/2014
Semivolatile Organic Compounds								
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	NA	< 0.95	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	ug/L	5	< 3.8	NA	NA	NA	NA	NA
2,4-Dichlorophenol	ug/L	NA	< 9.5	NA	NA	NA	NA	NA
2,4-Dimethylphenol	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
2,4-Dinitrophenol	ug/L	NA	< 19	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
2-Chloronaphthalene	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
2-Chlorophenol	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
2-Methylnaphthalene	ug/L	19	< 4.8	NA	NA	NA	NA	NA
2-Methylphenol (J)	ug/L	30 (M); 25	< 4.8	NA	NA	NA	NA	NA
2-Nitroaniline	ug/L	NA	< 19	NA	NA	NA	NA	NA
2-Nitrophenol	ug/L	ID	< 4.8	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	ug/L	0.3 (M); 0.2	< 4.8	NA	NA	NA	NA	NA
3-Nitroaniline	ug/L	NA	< 19	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	ug/L	NA	< 19	NA	NA	NA	NA	NA
4-Bromophenyl phenyl ether	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	ug/L	7.4	< 4.8	NA	NA	NA	NA	NA
4-Chloroaniline	ug/L	NA	< 1.9	NA	NA	NA	NA	NA
4-Chlorophenyl phenyl ether	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
4-Methylphenol (J)	ug/L	30 (M); 25	< 4.8	NA	NA	NA	NA	NA
4-Nitroaniline	ug/L	NA	< 19	NA	NA	NA	NA	NA
4-Nitrophenol	ug/L	NA	< 19	NA	NA	NA	NA	NA
Acenaphthene	ug/L	38	< 4.8	NA	NA	NA	NA	NA
Acenaphthylene	ug/L	ID	< 4.8	NA	NA	NA	NA	NA
Acetophenone	ug/L	ID	< 0.95	NA	NA	NA	NA	NA
Anthracene	ug/L	ID	< 4.8	NA	NA	NA	NA	NA
Atrazine	ug/L	7.3	< 0.95	NA	NA	NA	NA	NA
Benzaldehyde	ug/L	NA	< 0.95	NA	NA	NA	NA	NA
Benzo(a)anthracene	ug/L	ID	< 0.95	NA	NA	NA	NA	NA
Benzo(a)pyrene	ug/L	ID	< 0.95	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	ug/L	ID	< 0.95	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	ug/L	ID	< 0.95	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	ug/L	NA	< 0.95	NA	NA	NA	NA	NA
Biphenyl (1,1-Biphenyl)	ug/L	NA	< 0.95	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	ug/L	1.0 (M); 0.79	< 0.95	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	25	1.0 JB	NA	NA	NA	NA	NA
Butyl benzylphthalate (BBP)	ug/L	67 (X)	0.83 J	NA	NA	NA	NA	NA

**Table 3
Surface Water Analytical
RACER Trust
Pontiac North Campus
Pontiac, Michigan**

Location Code: Sample Code: Matrix: Sample Date:	Units	GSI Criteria	SW-1 MSW-070113-SW-1 WG 7/1/2013	SW-1 SW-01-DW(06.02.14) WG 6/2/2014	SW-1 SW-01-WW (06.12.14) WG 6/12/2014	SW-1 SW-01-WW (06.25.14) WG 6/25/2014	SW-1 SW-01-WW(05.13.14) WG 5/13/2014	SW-1 SW-01-WW(07.09.14) WG 7/9/2014
Caprolactam	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
Carbazole	ug/L	10 (M); 4.0	< 9.5	NA	NA	NA	NA	NA
Chrysene	ug/L	ID	< 0.95	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	ug/L	ID	< 1.9	NA	NA	NA	NA	NA
Dibenzofuran	ug/L	4	< 3.8	NA	NA	NA	NA	NA
Diethyl phthalate	ug/L	110	< 4.8	NA	NA	NA	NA	NA
Dimethyl phthalate	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
Di-n-butylphthalate (DBP)	ug/L	9.7	0.94 JB	NA	NA	NA	NA	NA
Di-n-octyl phthalate (DnOP)	ug/L	ID	< 4.8	NA	NA	NA	NA	NA
Fluoranthene	ug/L	1.6	< 0.95	NA	NA	NA	NA	NA
Fluorene	ug/L	12	< 4.8	NA	NA	NA	NA	NA
Hexachlorobenzene	ug/L	0.2 (M); 0.0003	< 0.19	NA	NA	NA	NA	NA
Hexachlorobutadiene	ug/L	0.053	< 0.95	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	ug/L	ID	< 4.8	NA	NA	NA	NA	NA
Hexachloroethane	ug/L	6.7 (X0	< 4.8	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	ug/L	ID	< 1.9	NA	NA	NA	NA	NA
Isophorone	ug/L	1,300 (X)	< 4.8	NA	NA	NA	NA	NA
Naphthalene	ug/L	11	< 4.8	NA	NA	NA	NA	NA
Nitrobenzene	ug/L	180 (X)	< 2.9	NA	NA	NA	NA	NA
N-Nitrosodi-n-propylamine	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
Pentachlorophenol	ug/L	2.8 (G,X)	< 4.8	NA	NA	NA	NA	NA
Phenanthrene	ug/L	2.0 (M); 1.4	< 1.9	NA	NA	NA	NA	NA
Phenol	ug/L	450	< 4.8	NA	NA	NA	NA	NA
Pyrene	ug/L	ID	< 4.8	NA	NA	NA	NA	NA

**Table 3
Surface Water Analytical
RACER Trust
Pontiac North Campus
Pontiac, Michigan**

Location Code: Sample Code: Matrix: Sample Date:	Units	GSI Criteria	SW-2 MSW-070113-SW-2 WG 7/1/2013	SW-2 SW-02-DW(06.02.14) WG 6/2/2014	SW-2 SW-02-WW (06.12.14) WG 6/12/2014	SW-2 SW-02-WW (06.25.14) WG 6/25/2014	SW-2 SW-02-WW(05.13.14) WG 5/13/2014	SW-2 SW-02-WW(07.09.14) WG 7/9/2014
Miscellaneous								
pH	ph units	6.5-9.0	NA	7.17	6.88	7.21 H	7.00	6.98
Total suspended solids (TSS)	mg/L	NA	NA	2,700	12,000	710	6,200	79
Inorganics								
Antimony	ug/L	130 (X)	0.47 JB	18 B	70 B	1.9 JB	160	0.30 J
Arsenic	ug/L	10	17 B	500 B	810 B	41 B	4,200 B	12 B
Barium	ug/L	670 (G)	160 B	1,600 B	2,800 B	240 B	14,000 B	170 B
Beryllium	ug/L	6.7 (G)	< 1.0	3.5	7.3 J	0.18 J	73	0.084 J
Cadmium	ug/L	3 (G,X)	0.052 J	10	26	0.62	210	0.037 J
Chromium	ug/L	100 (G,X)	1.0 JB	300 B	770	19	5,600 B	1.3 JB
Cobalt	ug/L	100 (G,X)	0.75 J	39 B	96	2.6	760	0.55 JB
Copper	ug/L	13 (G)	2.2 B	480 B	1,400 B	33 B	11,000 B	2.3 B
Lead	ug/L	29 (G,X)	2.9	1,200	3,100	74	25,000	4.5
Manganese	ug/L	2,800 (G,X)	990 B	17,000 B	27,000 B	1200	160,000 B	630 B
Mercury	ug/L	0.0013	< 0.20	0.70	0.76	< 0.20	12	< 0.20
Nickel	ug/L	73 (G)	2.9 B	220 B	580	14	4,400 B	2.3 B
Selenium	ug/L	5	0.40 J	4.4	19 J	0.37 J	110	< 2.0
Silver	ug/L	0.2 (M); 0.06	0.015 JB	1.6 B	4.0	0.11 J	34	0.011 JB
Thallium	ug/L	3.7 (X)	< 1.0	0.92 J	< 10	< 1.0	23	< 1.0
Vanadium	ug/L	27	0.75 JB	110	310	7.3 B	2,300	0.62 J
Zinc	ug/L	170 (G)	18 B	4,000 B	12,000 B	290 B	62,000 B	17 B
PCBs								
Aroclor-1016 (PCB-1016)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	< 0.099	< 0.095	< 0.11	< 0.10	< 0.099
Aroclor-1221 (PCB-1221)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	< 0.099	< 0.095	< 0.11	< 0.10	< 0.099
Aroclor-1232 (PCB-1232)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	< 0.099	< 0.095	< 0.11	< 0.10	< 0.099
Aroclor-1242 (PCB-1242)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	< 0.099	< 0.095	< 0.11	< 0.10	< 0.099
Aroclor-1248 (PCB-1248)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	< 0.099	< 0.095	0.090 J	< 0.10	< 0.099
Aroclor-1254 (PCB-1254)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	0.11	0.073 J	< 0.11	0.042 J	< 0.099
Aroclor-1260 (PCB-1260)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	< 0.099	< 0.095	< 0.11	< 0.10	< 0.099
Volatile Organic Compounds								
1,1,1-Trichloroethane	ug/L	89	< 1.0	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	ug/L	78 (X)	< 1.0	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	ug/L	330 (X)	< 1.0	NA	NA	NA	NA	NA
1,1-Dichloroethane	ug/L	740	< 1.0	NA	NA	NA	NA	NA
1,1-Dichloroethene	ug/L	130	< 1.0	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	ug/L	99 (X)	< 1.0	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	ID	< 1.0	NA	NA	NA	NA	NA
1,2-Dibromoethane (Ethylene dibromide)	ug/L	5.7 (X)	< 1.0	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	ug/L	13	< 1.0	NA	NA	NA	NA	NA

**Table 3
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RACER Trust
Pontiac North Campus
Pontiac, Michigan**

Location Code: Sample Code: Matrix: Sample Date:	Units	GSI Criteria	SW-2 MSW-070113-SW-2 WG 7/1/2013	SW-2 SW-02-DW(06.02.14) WG 6/2/2014	SW-2 SW-02-WW (06.12.14) WG 6/12/2014	SW-2 SW-02-WW (06.25.14) WG 6/25/2014	SW-2 SW-02-WW(05.13.14) WG 5/13/2014	SW-2 SW-02-WW(07.09.14) WG 7/9/2014
1,2-Dichloroethane	ug/L	360 (X)	< 1.0	NA	NA	NA	NA	NA
1,2-Dichloropropane	ug/L	230 (X)	< 1.0	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	ug/L	28	< 1.0	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	ug/L	17	< 1.0	NA	NA	NA	NA	NA
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	2,200	0.79 J	NA	NA	NA	NA	NA
2-Hexanone	ug/L	ID	< 50	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	ID	< 50	NA	NA	NA	NA	NA
Acetone	ug/L	1,700	< 25	NA	NA	NA	NA	NA
Benzene	ug/L	200 (X)	< 1.0	NA	NA	NA	NA	NA
Bromodichloromethane	ug/L	ID	< 1.0	NA	NA	NA	NA	NA
Bromoform	ug/L	ID	< 1.0	NA	NA	NA	NA	NA
Bromomethane (Methyl bromide)	ug/L	35	< 1.0	NA	NA	NA	NA	NA
Carbon disulfide	ug/L	ID	< 5.0	NA	NA	NA	NA	NA
Carbon tetrachloride	ug/L	45 (X)	< 1.0	NA	NA	NA	NA	NA
Chlorobenzene	ug/L	25	< 1.0	NA	NA	NA	NA	NA
Chloroethane	ug/L	1,100 (X)	< 1.0	NA	NA	NA	NA	NA
Chloroform (Trichloromethane)	ug/L	350	< 1.0	NA	NA	NA	NA	NA
Chloromethane (Methyl chloride)	ug/L	ID	< 1.0	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	ug/L	620	< 1.0	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene+trans (J)	ug/L	9 (X)	< 1.0	NA	NA	NA	NA	NA
Cyclohexane	ug/L	NA	< 1.0	NA	NA	NA	NA	NA
Dibromochloromethane	ug/L	ID	< 1.0	NA	NA	NA	NA	NA
Dichlorodifluoromethane (CFC-12)	ug/L	ID	< 1.0	NA	NA	NA	NA	NA
Ethylbenzene	ug/L	18	< 1.0	NA	NA	NA	NA	NA
Isopropyl benzene	ug/L	28	< 5.0	NA	NA	NA	NA	NA
Methyl acetate	ug/L	NA	< 10	NA	NA	NA	NA	NA
Methyl cyclohexane	ug/L	NA	< 1.0	NA	NA	NA	NA	NA
Methyl tert butyl ether (MTBE)	ug/L	7,100 (X)	< 5.0	NA	NA	NA	NA	NA
Methylene chloride	ug/L	1,500 (X)	< 5.0	NA	NA	NA	NA	NA
Styrene	ug/L	80 (X)	< 1.0	NA	NA	NA	NA	NA
Tetrachloroethene	ug/L	60 (X)	< 1.0	NA	NA	NA	NA	NA
Toluene	ug/L	270	< 1.0	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	ug/L	1,500 (X)	< 1.0	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene+cis (J)	ug/L	9 (X)	< 1.0	NA	NA	NA	NA	NA
Trichloroethene	ug/L	200 (X)	< 1.0	NA	NA	NA	NA	NA
Trichlorofluoromethane (CFC-11)	ug/L	NA	< 1.0	NA	NA	NA	NA	NA
Trifluorotrchloroethane (Freon 113)	ug/L	NA	< 1.0	NA	NA	NA	NA	NA
Vinyl chloride	ug/L	13 (X)	< 1.0	NA	NA	NA	NA	NA
Xylene (total)	ug/L	41	< 2.0	NA	NA	NA	NA	NA

**Table 3
Surface Water Analytical
RACER Trust
Pontiac North Campus
Pontiac, Michigan**

Location Code: Sample Code: Matrix: Sample Date:	Units	GSI Criteria	SW-2 MSW-070113-SW-2 WG 7/1/2013	SW-2 SW-02-DW(06.02.14) WG 6/2/2014	SW-2 SW-02-WW (06.12.14) WG 6/12/2014	SW-2 SW-02-WW (06.25.14) WG 6/25/2014	SW-2 SW-02-WW(05.13.14) WG 5/13/2014	SW-2 SW-02-WW(07.09.14) WG 7/9/2014
Semivolatile Organic Compounds								
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	NA	< 0.95	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	ug/L	5	< 3.8	NA	NA	NA	NA	NA
2,4-Dichlorophenol	ug/L	NA	< 9.5	NA	NA	NA	NA	NA
2,4-Dimethylphenol	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
2,4-Dinitrophenol	ug/L	NA	< 19	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
2-Chloronaphthalene	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
2-Chlorophenol	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
2-Methylnaphthalene	ug/L	19	< 4.8	NA	NA	NA	NA	NA
2-Methylphenol (J)	ug/L	30 (M); 25	< 4.8	NA	NA	NA	NA	NA
2-Nitroaniline	ug/L	NA	< 19	NA	NA	NA	NA	NA
2-Nitrophenol	ug/L	ID	< 4.8	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	ug/L	0.3 (M); 0.2	< 4.8	NA	NA	NA	NA	NA
3-Nitroaniline	ug/L	NA	< 19	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	ug/L	NA	< 19	NA	NA	NA	NA	NA
4-Bromophenyl phenyl ether	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	ug/L	7.4	< 4.8	NA	NA	NA	NA	NA
4-Chloroaniline	ug/L	NA	< 1.9	NA	NA	NA	NA	NA
4-Chlorophenyl phenyl ether	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
4-Methylphenol (J)	ug/L	30 (M); 25	< 4.8	NA	NA	NA	NA	NA
4-Nitroaniline	ug/L	NA	< 19	NA	NA	NA	NA	NA
4-Nitrophenol	ug/L	NA	< 19	NA	NA	NA	NA	NA
Acenaphthene	ug/L	38	< 4.8	NA	NA	NA	NA	NA
Acenaphthylene	ug/L	ID	< 4.8	NA	NA	NA	NA	NA
Acetophenone	ug/L	ID	< 0.95	NA	NA	NA	NA	NA
Anthracene	ug/L	ID	< 4.8	NA	NA	NA	NA	NA
Atrazine	ug/L	7.3	< 0.95	NA	NA	NA	NA	NA
Benzaldehyde	ug/L	NA	< 0.95	NA	NA	NA	NA	NA
Benzo(a)anthracene	ug/L	ID	< 0.95	NA	NA	NA	NA	NA
Benzo(a)pyrene	ug/L	ID	< 0.95	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	ug/L	ID	< 0.95	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	ug/L	ID	< 0.95	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	ug/L	NA	< 0.95	NA	NA	NA	NA	NA
Biphenyl (1,1-Biphenyl)	ug/L	NA	< 0.95	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	ug/L	1.0 (M); 0.79	< 0.95	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	25	0.92 JB	NA	NA	NA	NA	NA
Butyl benzylphthalate (BBP)	ug/L	67 (X)	0.71 J	NA	NA	NA	NA	NA

**Table 3
Surface Water Analytical
RACER Trust
Pontiac North Campus
Pontiac, Michigan**

Location Code: Sample Code: Matrix: Sample Date:	Units	GSI Criteria	SW-2 MSW-070113-SW-2 WG 7/1/2013	SW-2 SW-02-DW(06.02.14) WG 6/2/2014	SW-2 SW-02-WW (06.12.14) WG 6/12/2014	SW-2 SW-02-WW (06.25.14) WG 6/25/2014	SW-2 SW-02-WW(05.13.14) WG 5/13/2014	SW-2 SW-02-WW(07.09.14) WG 7/9/2014
Caprolactam	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
Carbazole	ug/L	10 (M); 4.0	< 9.5	NA	NA	NA	NA	NA
Chrysene	ug/L	ID	< 0.95	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	ug/L	ID	< 1.9	NA	NA	NA	NA	NA
Dibenzofuran	ug/L	4	< 3.8	NA	NA	NA	NA	NA
Diethyl phthalate	ug/L	110	< 4.8	NA	NA	NA	NA	NA
Dimethyl phthalate	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
Di-n-butylphthalate (DBP)	ug/L	9.7	< 4.8	NA	NA	NA	NA	NA
Di-n-octyl phthalate (DnOP)	ug/L	ID	< 4.8	NA	NA	NA	NA	NA
Fluoranthene	ug/L	1.6	< 0.95	NA	NA	NA	NA	NA
Fluorene	ug/L	12	< 4.8	NA	NA	NA	NA	NA
Hexachlorobenzene	ug/L	0.2 (M); 0.0003	< 0.19	NA	NA	NA	NA	NA
Hexachlorobutadiene	ug/L	0.053	< 0.95	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	ug/L	ID	< 4.8	NA	NA	NA	NA	NA
Hexachloroethane	ug/L	6.7 (X0	< 4.8	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	ug/L	ID	< 1.9	NA	NA	NA	NA	NA
Isophorone	ug/L	1,300 (X)	< 4.8	NA	NA	NA	NA	NA
Naphthalene	ug/L	11	< 4.8	NA	NA	NA	NA	NA
Nitrobenzene	ug/L	180 (X)	< 2.9	NA	NA	NA	NA	NA
N-Nitrosodi-n-propylamine	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
Pentachlorophenol	ug/L	2.8 (G,X)	< 4.8	NA	NA	NA	NA	NA
Phenanthrene	ug/L	2.0 (M); 1.4	< 1.9	NA	NA	NA	NA	NA
Phenol	ug/L	450	< 4.8	NA	NA	NA	NA	NA
Pyrene	ug/L	ID	< 4.8	NA	NA	NA	NA	NA

Table 3
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Pontiac North Campus
Pontiac, Michigan

Location Code: Sample Code: Matrix: Sample Date:	Units	GSI Criteria	SW-3 MSW-070113-SW-3 WG 7/1/2013	SW-3 SW-03-DW(06.02.14) WG 6/2/2014	SW-3 SW-03-WW (06.12.14) WG 6/12/2014	SW-3 SW-03-WW (06.25.14) WG 6/25/2014	SW-3 SW-03-WW(05.13.14) WG 5/13/2014	SW-3 SW-03-WW(07.09.14) WG 7/9/2014	SW-4 MSW-070113-DUP WG 7/1/2013
Miscellaneous									
pH	ph units	6.5-9.0	NA	6.95	7.02	7.09 H	7.06	6.99	NA
Total suspended solids (TSS)	mg/L	NA	NA	4,200	20,000	1,000	1,700	150	NA
Inorganics									
Antimony	ug/L	130 (X)	0.49 JB	19 B	65 B	6.6 B	8.9	0.31 J	0.88 JB
Arsenic	ug/L	10	17 B	470 B	1,200 B	300 B	460 B	12 B	68 B
Barium	ug/L	670 (G)	150 B	1,200 B	3,200 B	300 B	580 B	160 B	81 B
Beryllium	ug/L	6.7 (G)	0.031 J	4.3	7.1 J	0.77 J	1.5	0.10 J	0.15 J
Cadmium	ug/L	3 (G,X)	0.060 J	11	27	2.9	4.0	0.045 J	0.27 J
Chromium	ug/L	100 (G,X)	1.8 JB	370 B	670	96	130 B	1.5 JB	0.57 J
Cobalt	ug/L	100 (G,X)	1.2	48 B	90	12	16	0.59 JB	1.2
Copper	ug/L	13 (G)	3.4 B	570 B	1,300 B	150 B	190 B	2.8 B	4.7 B
Lead	ug/L	29 (G,X)	7.5	1,400	3,000	340	480	4.9	3.1
Manganese	ug/L	2,800 (G,X)	1800 B	14,000 B	35,000 B	4,400	6,300 B	620 B	680 B
Mercury	ug/L	0.0013	< 0.20	0.82	1.0	0.19 J	0.26	< 0.20	< 0.20
Nickel	ug/L	73 (G)	5.2 B	270 B	540	68	89 B	2.4 B	5.5 B
Selenium	ug/L	5	0.62 J	5.5	18 J	1.3 J	2.6 B	< 2.0	0.52 J
Silver	ug/L	0.2 (M); 0.06	0.0090 JB	2.0 B	3.8	0.51	0.73	0.010 JB	0.037 J
Thallium	ug/L	3.7 (X)	< 1.0	1.1	< 10	< 1.0	0.43 J	< 1.0	0.81 J
Vanadium	ug/L	27	0.99 JB	140	270	32 B	48	0.74 J	0.88 J
Zinc	ug/L	170 (G)	57 B	3,700 B	14,000 B	1,000 B	1,300 B	19 B	55 B
PCBs									
Aroclor-1016 (PCB-1016)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	< 0.099	< 0.095	< 0.098	< 0.10	< 0.099	< 0.095
Aroclor-1221 (PCB-1221)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	< 0.099	< 0.095	< 0.098	< 0.10	< 0.099	< 0.095
Aroclor-1232 (PCB-1232)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	< 0.099	< 0.095	< 0.098	< 0.10	< 0.099	< 0.095
Aroclor-1242 (PCB-1242)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	< 0.099	< 0.095	< 0.098	< 0.10	< 0.099	< 0.095
Aroclor-1248 (PCB-1248)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	< 0.099	< 0.095	< 0.098	< 0.10	< 0.099	< 0.095
Aroclor-1254 (PCB-1254)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	< 0.099	< 0.095	< 0.098	< 0.10	< 0.099	< 0.095
Aroclor-1260 (PCB-1260)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.095	< 0.099	< 0.095	< 0.098	< 0.10	< 0.099	< 0.095
Volatile Organic Compounds									
1,1,1-Trichloroethane	ug/L	89	< 1.0	NA	NA	NA	NA	NA	< 1.0
1,1,2,2-Tetrachloroethane	ug/L	78 (X)	< 1.0	NA	NA	NA	NA	NA	< 1.0
1,1,2-Trichloroethane	ug/L	330 (X)	< 1.0	NA	NA	NA	NA	NA	< 1.0
1,1-Dichloroethane	ug/L	740	< 1.0	NA	NA	NA	NA	NA	< 1.0
1,1-Dichloroethene	ug/L	130	< 1.0	NA	NA	NA	NA	NA	< 1.0
1,2,4-Trichlorobenzene	ug/L	99 (X)	< 1.0	NA	NA	NA	NA	NA	< 1.0
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	ID	< 1.0	NA	NA	NA	NA	NA	< 1.0
1,2-Dibromoethane (Ethylene dibromide)	ug/L	5.7 (X)	< 1.0	NA	NA	NA	NA	NA	< 1.0
1,2-Dichlorobenzene	ug/L	13	< 1.0	NA	NA	NA	NA	NA	< 1.0

Table 3
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Location Code: Sample Code: Matrix: Sample Date:	Units	GSI Criteria	SW-3 MSW-070113-SW-3 WG 7/1/2013	SW-3 SW-03-DW(06.02.14) WG 6/2/2014	SW-3 SW-03-WW (06.12.14) WG 6/12/2014	SW-3 SW-03-WW (06.25.14) WG 6/25/2014	SW-3 SW-03-WW(05.13.14) WG 5/13/2014	SW-3 SW-03-WW(07.09.14) WG 7/9/2014	SW-4 MSW-070113-DUP WG 7/1/2013
1,2-Dichloroethane	ug/L	360 (X)	< 1.0	NA	NA	NA	NA	NA	< 1.0
1,2-Dichloropropane	ug/L	230 (X)	< 1.0	NA	NA	NA	NA	NA	< 1.0
1,3-Dichlorobenzene	ug/L	28	< 1.0	NA	NA	NA	NA	NA	< 1.0
1,4-Dichlorobenzene	ug/L	17	< 1.0	NA	NA	NA	NA	NA	< 1.0
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	2,200	0.81 J	NA	NA	NA	NA	NA	0.59 J
2-Hexanone	ug/L	ID	< 50	NA	NA	NA	NA	NA	< 50
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	ID	< 50	NA	NA	NA	NA	NA	< 50
Acetone	ug/L	1,700	1.2 J	NA	NA	NA	NA	NA	2.4 J
Benzene	ug/L	200 (X)	< 1.0	NA	NA	NA	NA	NA	< 1.0
Bromodichloromethane	ug/L	ID	< 1.0	NA	NA	NA	NA	NA	< 1.0
Bromoform	ug/L	ID	< 1.0	NA	NA	NA	NA	NA	< 1.0
Bromomethane (Methyl bromide)	ug/L	35	< 1.0	NA	NA	NA	NA	NA	< 1.0
Carbon disulfide	ug/L	ID	< 5.0	NA	NA	NA	NA	NA	< 5.0
Carbon tetrachloride	ug/L	45 (X)	< 1.0	NA	NA	NA	NA	NA	< 1.0
Chlorobenzene	ug/L	25	< 1.0	NA	NA	NA	NA	NA	< 1.0
Chloroethane	ug/L	1,100 (X)	< 1.0	NA	NA	NA	NA	NA	< 1.0
Chloroform (Trichloromethane)	ug/L	350	< 1.0	NA	NA	NA	NA	NA	< 1.0
Chloromethane (Methyl chloride)	ug/L	ID	< 1.0	NA	NA	NA	NA	NA	< 1.0
cis-1,2-Dichloroethene	ug/L	620	< 1.0	NA	NA	NA	NA	NA	< 1.0
cis-1,3-Dichloropropene+trans (J)	ug/L	9 (X)	< 1.0	NA	NA	NA	NA	NA	< 1.0
Cyclohexane	ug/L	NA	< 1.0	NA	NA	NA	NA	NA	< 1.0
Dibromochloromethane	ug/L	ID	< 1.0	NA	NA	NA	NA	NA	< 1.0
Dichlorodifluoromethane (CFC-12)	ug/L	ID	< 1.0	NA	NA	NA	NA	NA	< 1.0
Ethylbenzene	ug/L	18	< 1.0	NA	NA	NA	NA	NA	< 1.0
Isopropyl benzene	ug/L	28	< 5.0	NA	NA	NA	NA	NA	< 5.0
Methyl acetate	ug/L	NA	< 10	NA	NA	NA	NA	NA	< 10
Methyl cyclohexane	ug/L	NA	< 1.0	NA	NA	NA	NA	NA	< 1.0
Methyl tert butyl ether (MTBE)	ug/L	7,100 (X)	< 5.0	NA	NA	NA	NA	NA	< 5.0
Methylene chloride	ug/L	1,500 (X)	< 5.0	NA	NA	NA	NA	NA	< 5.0
Styrene	ug/L	80 (X)	< 1.0	NA	NA	NA	NA	NA	< 1.0
Tetrachloroethene	ug/L	60 (X)	< 1.0	NA	NA	NA	NA	NA	< 1.0
Toluene	ug/L	270	< 1.0	NA	NA	NA	NA	NA	< 1.0
trans-1,2-Dichloroethene	ug/L	1,500 (X)	< 1.0	NA	NA	NA	NA	NA	< 1.0
trans-1,3-Dichloropropene+cis (J)	ug/L	9 (X)	< 1.0	NA	NA	NA	NA	NA	< 1.0
Trichloroethene	ug/L	200 (X)	< 1.0	NA	NA	NA	NA	NA	< 1.0
Trichlorofluoromethane (CFC-11)	ug/L	NA	< 1.0	NA	NA	NA	NA	NA	< 1.0
Trifluorotrchloroethane (Freon 113)	ug/L	NA	< 1.0	NA	NA	NA	NA	NA	< 1.0
Vinyl chloride	ug/L	13 (X)	< 1.0	NA	NA	NA	NA	NA	< 1.0
Xylene (total)	ug/L	41	< 2.0	NA	NA	NA	NA	NA	< 2.0

Table 3
Surface Water Analytical
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Pontiac North Campus
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Location Code: Sample Code: Matrix: Sample Date:	Units	GSI Criteria	SW-3 MSW-070113-SW-3 WG 7/1/2013	SW-3 SW-03-DW(06.02.14) WG 6/2/2014	SW-3 SW-03-WW (06.12.14) WG 6/12/2014	SW-3 SW-03-WW (06.25.14) WG 6/25/2014	SW-3 SW-03-WW(05.13.14) WG 5/13/2014	SW-3 SW-03-WW(07.09.14) WG 7/9/2014	SW-4 MSW-070113-DUP WG 7/1/2013
Semivolatile Organic Compounds									
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	NA	< 1.0	NA	NA	NA	NA	NA	< 0.96
2,4,5-Trichlorophenol	ug/L	NA	< 5.0	NA	NA	NA	NA	NA	< 4.8
2,4,6-Trichlorophenol	ug/L	5	< 4.0	NA	NA	NA	NA	NA	< 3.8
2,4-Dichlorophenol	ug/L	NA	< 10	NA	NA	NA	NA	NA	< 9.6
2,4-Dimethylphenol	ug/L	NA	< 5.0	NA	NA	NA	NA	NA	< 4.8
2,4-Dinitrophenol	ug/L	NA	< 20	NA	NA	NA	NA	NA	< 19
2,4-Dinitrotoluene	ug/L	NA	< 5.0	NA	NA	NA	NA	NA	< 4.8
2,6-Dinitrotoluene	ug/L	NA	< 5.0	NA	NA	NA	NA	NA	< 4.8
2-Chloronaphthalene	ug/L	NA	< 5.0	NA	NA	NA	NA	NA	< 4.8
2-Chlorophenol	ug/L	NA	< 5.0	NA	NA	NA	NA	NA	< 4.8
2-Methylnaphthalene	ug/L	19	< 5.0	NA	NA	NA	NA	NA	< 4.8
2-Methylphenol (J)	ug/L	30 (M); 25	< 5.0	NA	NA	NA	NA	NA	< 4.8
2-Nitroaniline	ug/L	NA	< 20	NA	NA	NA	NA	NA	< 19
2-Nitrophenol	ug/L	ID	< 5.0	NA	NA	NA	NA	NA	< 4.8
3,3'-Dichlorobenzidine	ug/L	0.3 (M); 0.2	< 5.0	NA	NA	NA	NA	NA	< 4.8
3-Nitroaniline	ug/L	NA	< 20	NA	NA	NA	NA	NA	< 19
4,6-Dinitro-2-methylphenol	ug/L	NA	< 20	NA	NA	NA	NA	NA	< 19
4-Bromophenyl phenyl ether	ug/L	NA	< 5.0	NA	NA	NA	NA	NA	< 4.8
4-Chloro-3-methylphenol	ug/L	7.4	< 5.0	NA	NA	NA	NA	NA	< 4.8
4-Chloroaniline	ug/L	NA	< 2.0	NA	NA	NA	NA	NA	< 1.9
4-Chlorophenyl phenyl ether	ug/L	NA	< 5.0	NA	NA	NA	NA	NA	< 4.8
4-Methylphenol (J)	ug/L	30 (M); 25	< 5.0	NA	NA	NA	NA	NA	< 4.8
4-Nitroaniline	ug/L	NA	< 20	NA	NA	NA	NA	NA	< 19
4-Nitrophenol	ug/L	NA	< 20	NA	NA	NA	NA	NA	< 19
Acenaphthene	ug/L	38	< 5.0	NA	NA	NA	NA	NA	< 4.8
Acenaphthylene	ug/L	ID	< 5.0	NA	NA	NA	NA	NA	< 4.8
Acetophenone	ug/L	ID	< 1.0	NA	NA	NA	NA	NA	< 0.96
Anthracene	ug/L	ID	< 5.0	NA	NA	NA	NA	NA	< 4.8
Atrazine	ug/L	7.3	< 1.0	NA	NA	NA	NA	NA	< 0.96
Benzaldehyde	ug/L	NA	< 1.0	NA	NA	NA	NA	NA	< 0.96
Benzo(a)anthracene	ug/L	ID	< 1.0	NA	NA	NA	NA	NA	< 0.96
Benzo(a)pyrene	ug/L	ID	< 1.0	NA	NA	NA	NA	NA	< 0.96
Benzo(b)fluoranthene	ug/L	ID	< 1.0	NA	NA	NA	NA	NA	< 0.96
Benzo(g,h,i)perylene	ug/L	ID	< 1.0	NA	NA	NA	NA	NA	< 0.96
Benzo(k)fluoranthene	ug/L	NA	< 1.0	NA	NA	NA	NA	NA	< 0.96
Biphenyl (1,1-Biphenyl)	ug/L	NA	< 1.0	NA	NA	NA	NA	NA	< 0.96
bis(2-Chloroethoxy)methane	ug/L	NA	< 5.0	NA	NA	NA	NA	NA	< 4.8
bis(2-Chloroethyl)ether	ug/L	1.0 (M); 0.79	< 1.0	NA	NA	NA	NA	NA	< 0.96
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	25	1.3 JB	NA	NA	NA	NA	NA	1.0 JB
Butyl benzylphthalate (BBP)	ug/L	67 (X)	< 5.0	NA	NA	NA	NA	NA	0.83 J

Table 3
Surface Water Analytical
RACER Trust
Pontiac North Campus
Pontiac, Michigan

Location Code: Sample Code: Matrix: Sample Date:	Units	GSI Criteria	SW-3 MSW-070113-SW-3 WG 7/1/2013	SW-3 SW-03-DW(06.02.14) WG 6/2/2014	SW-3 SW-03-WW (06.12.14) WG 6/12/2014	SW-3 SW-03-WW (06.25.14) WG 6/25/2014	SW-3 SW-03-WW(05.13.14) WG 5/13/2014	SW-3 SW-03-WW(07.09.14) WG 7/9/2014	SW-4 MSW-070113-DUP WG 7/1/2013
Caprolactam	ug/L	NA	< 5.0	NA	NA	NA	NA	NA	1.3 J
Carbazole	ug/L	10 (M); 4.0	< 10	NA	NA	NA	NA	NA	< 9.6
Chrysene	ug/L	ID	< 1.0	NA	NA	NA	NA	NA	< 0.96
Dibenzo(a,h)anthracene	ug/L	ID	< 2.0	NA	NA	NA	NA	NA	< 1.9
Dibenzofuran	ug/L	4	< 4.0	NA	NA	NA	NA	NA	< 3.8
Diethyl phthalate	ug/L	110	< 5.0	NA	NA	NA	NA	NA	< 4.8
Dimethyl phthalate	ug/L	NA	< 5.0	NA	NA	NA	NA	NA	< 4.8
Di-n-butylphthalate (DBP)	ug/L	9.7	0.85 JB	NA	NA	NA	NA	NA	0.67 JB
Di-n-octyl phthalate (DnOP)	ug/L	ID	< 5.0	NA	NA	NA	NA	NA	< 4.8
Fluoranthene	ug/L	1.6	< 1.0	NA	NA	NA	NA	NA	< 0.96
Fluorene	ug/L	12	< 5.0	NA	NA	NA	NA	NA	< 4.8
Hexachlorobenzene	ug/L	0.2 (M); 0.0003	< 0.20	NA	NA	NA	NA	NA	< 0.19
Hexachlorobutadiene	ug/L	0.053	< 1.0	NA	NA	NA	NA	NA	< 0.96
Hexachlorocyclopentadiene	ug/L	ID	< 5.0	NA	NA	NA	NA	NA	< 4.8
Hexachloroethane	ug/L	6.7 (X0	< 5.0	NA	NA	NA	NA	NA	< 4.8
Indeno(1,2,3-cd)pyrene	ug/L	ID	< 2.0	NA	NA	NA	NA	NA	< 1.9
Isophorone	ug/L	1,300 (X)	< 5.0	NA	NA	NA	NA	NA	< 4.8
Naphthalene	ug/L	11	< 5.0	NA	NA	NA	NA	NA	< 4.8
Nitrobenzene	ug/L	180 (X)	< 3.0	NA	NA	NA	NA	NA	< 2.9
N-Nitrosodi-n-propylamine	ug/L	NA	< 5.0	NA	NA	NA	NA	NA	< 4.8
N-Nitrosodiphenylamine	ug/L	NA	< 5.0	NA	NA	NA	NA	NA	< 4.8
Pentachlorophenol	ug/L	2.8 (G,X)	< 5.0	NA	NA	NA	NA	NA	< 4.8
Phenanthrene	ug/L	2.0 (M); 1.4	< 2.0	NA	NA	NA	NA	NA	< 1.9
Phenol	ug/L	450	< 5.0	NA	NA	NA	NA	NA	< 4.8
Pyrene	ug/L	ID	< 5.0	NA	NA	NA	NA	NA	< 4.8

Table 3
Surface Water Analytical
RACER Trust
Pontiac North Campus
Pontiac, Michigan

Location Code: Sample Code: Matrix: Sample Date:	Units	GSI Criteria	SW-4 MSW-070113-SW-4 WG 7/1/2013	SW-4 SW-04-DW(06.02.14) WG 6/2/2014	SW-4 SW-04-WW (06.12.14) WG 6/12/2014	SW-4 SW-04-WW (06.25.14) WG 6/25/2014	SW-4 SW-04-WW(05.13.14) WG 5/13/2014	SW-4 SW-04-WW(07.09.14) WG 7/9/2014
Miscellaneous								
pH	ph units	6.5-9.0	NA	7.77	7.01	7.22 H	7.84	6.80
Total suspended solids (TSS)	mg/L	NA	NA	1,500	24,000	11,000	100	2,000
Inorganics								
Antimony	ug/L	130 (X)	0.78 JB	3.1 B	59 B	27 B	1.0 J	0.19 J
Arsenic	ug/L	10	64 B	370 B	620 B	1,200 B	62 B	16 B
Barium	ug/L	670 (G)	82 B	250 B	2,100 B	2,300 B	120 B	160 B
Beryllium	ug/L	6.7 (G)	< 1.0	0.44 J	6.7 J	5.5 J	0.15 J	0.12 J
Cadmium	ug/L	3 (G,X)	0.074 J	1.2	22	21	0.29 J	0.038 J
Chromium	ug/L	100 (G,X)	1.5 JB	30 B	610	620	5.8 B	0.72 JB
Cobalt	ug/L	100 (G,X)	1.1	5.1 B	75	75	1.6	0.44 JB
Copper	ug/L	13 (G)	6.3 B	47 B	1,100 B	1,100 B	12 B	1.3 JB
Lead	ug/L	29 (G,X)	5.5	130	2300	2,400	22	1.4
Manganese	ug/L	2,800 (G,X)	720 B	2600 B	20,000 B	29,000	1400 B	610 B
Mercury	ug/L	0.0013	< 0.20	< 0.20	1.0	0.84	< 0.20	< 0.20
Nickel	ug/L	73 (G)	5.7 B	28 B	470	440	7.9 B	1.7 JB
Selenium	ug/L	5	0.60 J	0.82 J	18 J	9.3 J	1.3 JB	< 2.0
Silver	ug/L	0.2 (M); 0.06	0.018 JB	0.17 JB	3.8	3.9	0.047 J	0.010 JB
Thallium	ug/L	3.7 (X)	< 1.0	1.2	< 10	< 10	< 1.0	< 1.0
Vanadium	ug/L	27	1.1 JB	11	240	230 B	2.1 J	0.32 J
Zinc	ug/L	170 (G)	83 B	1,100 B	8,900 B	11,000 B	220 B	8.2 JB
PCBs								
Aroclor-1016 (PCB-1016)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.096	< 0.10	< 0.096	< 0.098	< 0.10	< 0.099
Aroclor-1221 (PCB-1221)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.096	< 0.10	< 0.096	< 0.098	< 0.10	< 0.099
Aroclor-1232 (PCB-1232)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.096	< 0.10	< 0.096	< 0.098	< 0.10	< 0.099
Aroclor-1242 (PCB-1242)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.096	< 0.10	< 0.096	< 0.098	< 0.10	< 0.099
Aroclor-1248 (PCB-1248)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.096	< 0.10	< 0.096	< 0.098	< 0.10	< 0.099
Aroclor-1254 (PCB-1254)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.096	< 0.10	0.086 J	< 0.098	< 0.10	< 0.099
Aroclor-1260 (PCB-1260)	ug/L	0.2 (M); 2.6x10 ⁻⁵	< 0.096	< 0.10	< 0.096	< 0.098	< 0.10	< 0.099
Volatile Organic Compounds								
1,1,1-Trichloroethane	ug/L	89	< 1.0	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	ug/L	78 (X)	< 1.0	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	ug/L	330 (X)	< 1.0	NA	NA	NA	NA	NA
1,1-Dichloroethane	ug/L	740	< 1.0	NA	NA	NA	NA	NA
1,1-Dichloroethene	ug/L	130	< 1.0	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	ug/L	99 (X)	< 1.0	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	ID	< 1.0	NA	NA	NA	NA	NA
1,2-Dibromoethane (Ethylene dibromide)	ug/L	5.7 (X)	< 1.0	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	ug/L	13	< 1.0	NA	NA	NA	NA	NA

**Table 3
Surface Water Analytical
RACER Trust
Pontiac North Campus
Pontiac, Michigan**

Location Code: Sample Code: Matrix: Sample Date:	Units	GSI Criteria	SW-4 MSW-070113-SW-4 WG 7/1/2013	SW-4 SW-04-DW(06.02.14) WG 6/2/2014	SW-4 SW-04-WW (06.12.14) WG 6/12/2014	SW-4 SW-04-WW (06.25.14) WG 6/25/2014	SW-4 SW-04-WW(05.13.14) WG 5/13/2014	SW-4 SW-04-WW(07.09.14) WG 7/9/2014
1,2-Dichloroethane	ug/L	360 (X)	< 1.0	NA	NA	NA	NA	NA
1,2-Dichloropropane	ug/L	230 (X)	< 1.0	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	ug/L	28	< 1.0	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	ug/L	17	< 1.0	NA	NA	NA	NA	NA
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	2,200	0.91 J	NA	NA	NA	NA	NA
2-Hexanone	ug/L	ID	< 50	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	ID	< 50	NA	NA	NA	NA	NA
Acetone	ug/L	1,700	2.5 J	NA	NA	NA	NA	NA
Benzene	ug/L	200 (X)	< 1.0	NA	NA	NA	NA	NA
Bromodichloromethane	ug/L	ID	< 1.0	NA	NA	NA	NA	NA
Bromoform	ug/L	ID	< 1.0	NA	NA	NA	NA	NA
Bromomethane (Methyl bromide)	ug/L	35	< 1.0	NA	NA	NA	NA	NA
Carbon disulfide	ug/L	ID	< 5.0	NA	NA	NA	NA	NA
Carbon tetrachloride	ug/L	45 (X)	< 1.0	NA	NA	NA	NA	NA
Chlorobenzene	ug/L	25	< 1.0	NA	NA	NA	NA	NA
Chloroethane	ug/L	1,100 (X)	< 1.0	NA	NA	NA	NA	NA
Chloroform (Trichloromethane)	ug/L	350	< 1.0	NA	NA	NA	NA	NA
Chloromethane (Methyl chloride)	ug/L	ID	< 1.0	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	ug/L	620	< 1.0	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene+trans (J)	ug/L	9 (X)	< 1.0	NA	NA	NA	NA	NA
Cyclohexane	ug/L	NA	< 1.0	NA	NA	NA	NA	NA
Dibromochloromethane	ug/L	ID	< 1.0	NA	NA	NA	NA	NA
Dichlorodifluoromethane (CFC-12)	ug/L	ID	< 1.0	NA	NA	NA	NA	NA
Ethylbenzene	ug/L	18	< 1.0	NA	NA	NA	NA	NA
Isopropyl benzene	ug/L	28	< 5.0	NA	NA	NA	NA	NA
Methyl acetate	ug/L	NA	< 10	NA	NA	NA	NA	NA
Methyl cyclohexane	ug/L	NA	< 1.0	NA	NA	NA	NA	NA
Methyl tert butyl ether (MTBE)	ug/L	7,100 (X)	< 5.0	NA	NA	NA	NA	NA
Methylene chloride	ug/L	1,500 (X)	< 5.0	NA	NA	NA	NA	NA
Styrene	ug/L	80 (X)	< 1.0	NA	NA	NA	NA	NA
Tetrachloroethene	ug/L	60 (X)	< 1.0	NA	NA	NA	NA	NA
Toluene	ug/L	270	< 1.0	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	ug/L	1,500 (X)	< 1.0	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene+cis (J)	ug/L	9 (X)	< 1.0	NA	NA	NA	NA	NA
Trichloroethene	ug/L	200 (X)	< 1.0	NA	NA	NA	NA	NA
Trichlorofluoromethane (CFC-11)	ug/L	NA	< 1.0	NA	NA	NA	NA	NA
Trifluorotrchloroethane (Freon 113)	ug/L	NA	< 1.0	NA	NA	NA	NA	NA
Vinyl chloride	ug/L	13 (X)	< 1.0	NA	NA	NA	NA	NA
Xylene (total)	ug/L	41	< 2.0	NA	NA	NA	NA	NA

**Table 3
Surface Water Analytical
RACER Trust
Pontiac North Campus
Pontiac, Michigan**

Location Code: Sample Code: Matrix: Sample Date:	Units	GSI Criteria	SW-4 MSW-070113-SW-4 WG 7/1/2013	SW-4 SW-04-DW(06.02.14) WG 6/2/2014	SW-4 SW-04-WW (06.12.14) WG 6/12/2014	SW-4 SW-04-WW (06.25.14) WG 6/25/2014	SW-4 SW-04-WW(05.13.14) WG 5/13/2014	SW-4 SW-04-WW(07.09.14) WG 7/9/2014
Semivolatile Organic Compounds								
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	NA	< 0.95	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	ug/L	5	< 3.8	NA	NA	NA	NA	NA
2,4-Dichlorophenol	ug/L	NA	< 9.5	NA	NA	NA	NA	NA
2,4-Dimethylphenol	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
2,4-Dinitrophenol	ug/L	NA	< 19	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
2-Chloronaphthalene	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
2-Chlorophenol	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
2-Methylnaphthalene	ug/L	19	< 4.8	NA	NA	NA	NA	NA
2-Methylphenol (J)	ug/L	30 (M); 25	< 4.8	NA	NA	NA	NA	NA
2-Nitroaniline	ug/L	NA	< 19	NA	NA	NA	NA	NA
2-Nitrophenol	ug/L	ID	< 4.8	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	ug/L	0.3 (M); 0.2	< 4.8	NA	NA	NA	NA	NA
3-Nitroaniline	ug/L	NA	< 19	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	ug/L	NA	< 19	NA	NA	NA	NA	NA
4-Bromophenyl phenyl ether	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	ug/L	7.4	< 4.8	NA	NA	NA	NA	NA
4-Chloroaniline	ug/L	NA	< 1.9	NA	NA	NA	NA	NA
4-Chlorophenyl phenyl ether	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
4-Methylphenol (J)	ug/L	30 (M); 25	< 4.8	NA	NA	NA	NA	NA
4-Nitroaniline	ug/L	NA	< 19	NA	NA	NA	NA	NA
4-Nitrophenol	ug/L	NA	< 19	NA	NA	NA	NA	NA
Acenaphthene	ug/L	38	< 4.8	NA	NA	NA	NA	NA
Acenaphthylene	ug/L	ID	< 4.8	NA	NA	NA	NA	NA
Acetophenone	ug/L	ID	< 0.95	NA	NA	NA	NA	NA
Anthracene	ug/L	ID	< 4.8	NA	NA	NA	NA	NA
Atrazine	ug/L	7.3	< 0.95	NA	NA	NA	NA	NA
Benzaldehyde	ug/L	NA	< 0.95	NA	NA	NA	NA	NA
Benzo(a)anthracene	ug/L	ID	< 0.95	NA	NA	NA	NA	NA
Benzo(a)pyrene	ug/L	ID	< 0.95	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	ug/L	ID	< 0.95	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	ug/L	ID	< 0.95	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	ug/L	NA	< 0.95	NA	NA	NA	NA	NA
Biphenyl (1,1-Biphenyl)	ug/L	NA	< 0.95	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	ug/L	1.0 (M); 0.79	< 0.95	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	25	0.96 JB	NA	NA	NA	NA	NA
Butyl benzylphthalate (BBP)	ug/L	67 (X)	0.99 J	NA	NA	NA	NA	NA

**Table 3
Surface Water Analytical
RACER Trust
Pontiac North Campus
Pontiac, Michigan**

Location Code: Sample Code: Matrix: Sample Date:	Units	GSI Criteria	SW-4 MSW-070113-SW-4 WG 7/1/2013	SW-4 SW-04-DW(06.02.14) WG 6/2/2014	SW-4 SW-04-WW (06.12.14) WG 6/12/2014	SW-4 SW-04-WW (06.25.14) WG 6/25/2014	SW-4 SW-04-WW(05.13.14) WG 5/13/2014	SW-4 SW-04-WW(07.09.14) WG 7/9/2014
Caprolactam	ug/L	NA	1.2 J	NA	NA	NA	NA	NA
Carbazole	ug/L	10 (M); 4.0	< 9.5	NA	NA	NA	NA	NA
Chrysene	ug/L	ID	< 0.95	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	ug/L	ID	< 1.9	NA	NA	NA	NA	NA
Dibenzofuran	ug/L	4	< 3.8	NA	NA	NA	NA	NA
Diethyl phthalate	ug/L	110	< 4.8	NA	NA	NA	NA	NA
Dimethyl phthalate	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
Di-n-butylphthalate (DBP)	ug/L	9.7	0.82 JB	NA	NA	NA	NA	NA
Di-n-octyl phthalate (DnOP)	ug/L	ID	< 4.8	NA	NA	NA	NA	NA
Fluoranthene	ug/L	1.6	< 0.95	NA	NA	NA	NA	NA
Fluorene	ug/L	12	< 4.8	NA	NA	NA	NA	NA
Hexachlorobenzene	ug/L	0.2 (M); 0.0003	< 0.19	NA	NA	NA	NA	NA
Hexachlorobutadiene	ug/L	0.053	< 0.95	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	ug/L	ID	< 4.8	NA	NA	NA	NA	NA
Hexachloroethane	ug/L	6.7 (X)	< 4.8	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	ug/L	ID	< 1.9	NA	NA	NA	NA	NA
Isophorone	ug/L	1,300 (X)	< 4.8	NA	NA	NA	NA	NA
Naphthalene	ug/L	11	< 4.8	NA	NA	NA	NA	NA
Nitrobenzene	ug/L	180 (X)	< 2.9	NA	NA	NA	NA	NA
N-Nitrosodi-n-propylamine	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	ug/L	NA	< 4.8	NA	NA	NA	NA	NA
Pentachlorophenol	ug/L	2.8 (G,X)	< 4.8	NA	NA	NA	NA	NA
Phenanthrene	ug/L	2.0 (M); 1.4	< 1.9	NA	NA	NA	NA	NA
Phenol	ug/L	450	< 4.8	NA	NA	NA	NA	NA
Pyrene	ug/L	ID	< 4.8	NA	NA	NA	NA	NA

**Table 3
RACER**

General Notes:

1. Remediation and Redevelopment Operational Memorandum No. 1, Part 201 Cleanup Criteria and Part 213 Risk-Based Screening Levels, December 29, 2013.
2. Shaded result denotes exceedance of Groundwater Surface Water Interface (GSI) Criteria.

Footnote:

* LCS or LCSD exceeds the control limits.

Acronyms and Abbreviations:

B	Compound was found in the blank and sample
G	Groundwater surface water interface (GSI) criterion depends on the pH or waterhardness, or both, of the receiving surface water.
GSI	Groundwater Surface Water Interface
H	Sample was prepped or analyzed beyond the specified holding time
ID	Inadequate data to develop criterion
J	Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.
LCS	Laboratory control samples
LCSD	Laboratory control samples, duplicates
M	Calculated criterion is below the analytical target detection limit; therefore, the criterion defaults to the target detection limit.
mg/L	Milligrams per liter
NA	Not analyzed
U	Indicates the analyte was analyzed for but not detected
µg/L	Micrograms per liter
X	The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source.

Table 4
Sheen Analytical Data
RACER Trust
Pontiac North Campus
Pontiac, Michigan

				System Location Code: System Sample Code: Matrix Code: Sample Type Code: Sample Date: Analysis Date:	SHEEN1 MSW-070113-SHEEN1-J WG N 7/1/2013 7/11/13 20:03	SHEEN2 MSW-070113-SHEEN2-J WG N 7/1/2013 7/11/13 20:33
Cas-rn	Chemical Name	Analytic Method	Report Result Unit			
ARC-TPH-C10C20	C10-C20	M8015D	mg/L	2.1	1.9 J	
ARC-TPH-C20C34	C20-C34	M8015D	mg/L	2.0	< 2.5 U	

				System Location Code: System Sample Code: Matrix Code: Sample Type Code: Sample Date: Analysis Date:	SHEEN1 MSW-070113-SHEEN1-N SW N 7/1/2013 7/11/13 4:11	SHEEN2 MSW-070113-SHEEN2-N SW N 7/1/2013 7/11/13 17:31
Cas-rn	Chemical Name	Analytic Method	Report Result Unit			
ARC-TPH-C10C20	C10-C20	M8015D	mg/kg	< 39 U	< 36 U	
ARC-TPH-C20C34	C20-C34	M8015D	mg/kg	32 J	47	
PHC610GRO	Total Petroleum Hydrocarbons (C6-C10) GRO	M8015V	mg/kg	<0.31 U	NA	

Abbreviations:

J - parameter concentration estimated
mg/kg - milligrams TPH per kilogram of net
mg/l - milligrams TPA per liter water
NA - not analyzed
TPA -
TPH - Total petroleum hydrocarbons
U - parameter not detected above reporting limit

**Table 5
Slug Test Results
RACER Trust
Pontiac North Campus
Pontiac, Michigan**

Well ID	Static Depth-to-Water (ft TOC)	Calculated Water Column (ft)	Estimated Aquifer Thickness (b, ft)	Test Type	Date	Initial Displacement (Ho, ft)	Analytical Solution	Estimated Hydraulic Conductivity (cm/sec)
TW-MD-01	3.98	6.02	6.02	Rising Head 1	8/5/2014	1.65	Bouwer-Rice (unconfined)	1.4E-03
				Rising Head 2	8/5/2014	1.38	Bouwer-Rice (unconfined)	1.4E-03
TW-MD-02	3.95	7.55	7.55	Rising Head 1	8/7/2014	1.73	Bouwer-Rice (unconfined)	3.2E-03
				Rising Head 2	8/7/2014	1.29	Bouwer-Rice (unconfined)	3.1E-03
TW-MD-03	4.05	8.95	8.95	Rising Head 1	8/7/2014	1.94	Bouwer-Rice (unconfined)	5.9E-04
				Rising Head 2	8/7/2014	1.85	Bouwer-Rice (unconfined)	6.4E-04
TW-MD-04	4.29	7.71	7.71	Rising Head 1	8/7/2014	1.46	Bouwer-Rice (unconfined)	3.0E-03
				Rising Head 2	8/7/2014	1.94	Bouwer-Rice (unconfined)	3.2E-03
TW-MD-05	4.03	8.97	8.97	Rising Head 2	8/7/2014	1.75	Bouwer-Rice (unconfined)	1.8E-03
				Rising Head 3	8/7/2014	1.83	Bouwer-Rice (unconfined)	1.7E-03
TW-MD-06	4.42	12.08	12.08	Rising Head 1	8/7/2014	1.87	Bouwer-Rice (unconfined)	1.1E-03
				Rising Head 2	8/7/2014	1.85	Bouwer-Rice (unconfined)	1.0E-03
TW-MD-07	4.4	11.10	11.10	Rising Head 1	8/7/2014	2.15	Bouwer-Rice (unconfined)	1.4E-03

General Note:

1. Aquifer thickness assumed equal to saturated water column.

Acronyms:

TOC Top of Casing
cm/sec centimeters per second
ft Feet
Ho Water level at time zero

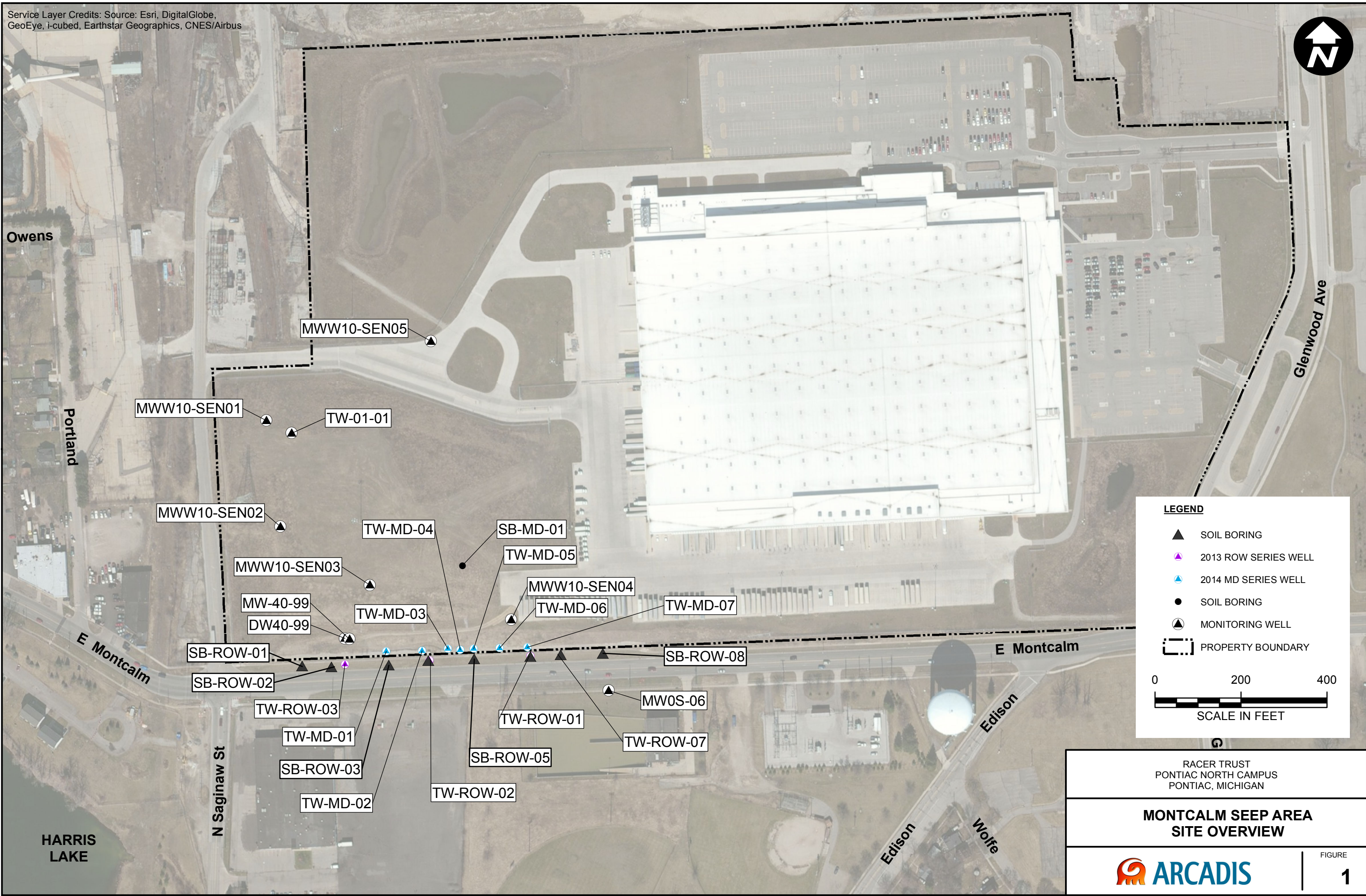
References:

Bouwer, H. and R.C. Rice, 1976. A slug test method for determining hydraulic conductivity of unconfined aquifers with completely or partially penetrating wells, *Water Resources Research*, vol. 12, no. 3, pp. 423-428.

Butler, J.J., Jr., 1998. The Design, Performance, and Analysis of Slug Tests, Lewis Publishers, Boca Raton, 252p.

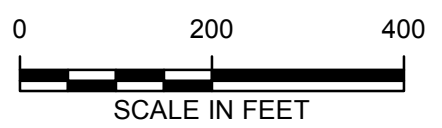


: [i fYg



LEGEND

- ▲ SOIL BORING
- ▲ 2013 ROW SERIES WELL
- ▲ 2014 MD SERIES WELL
- SOIL BORING
- ▲ MONITORING WELL
- - - PROPERTY BOUNDARY



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**MONTCALM SEEP AREA
SITE OVERVIEW**

ARCADIS

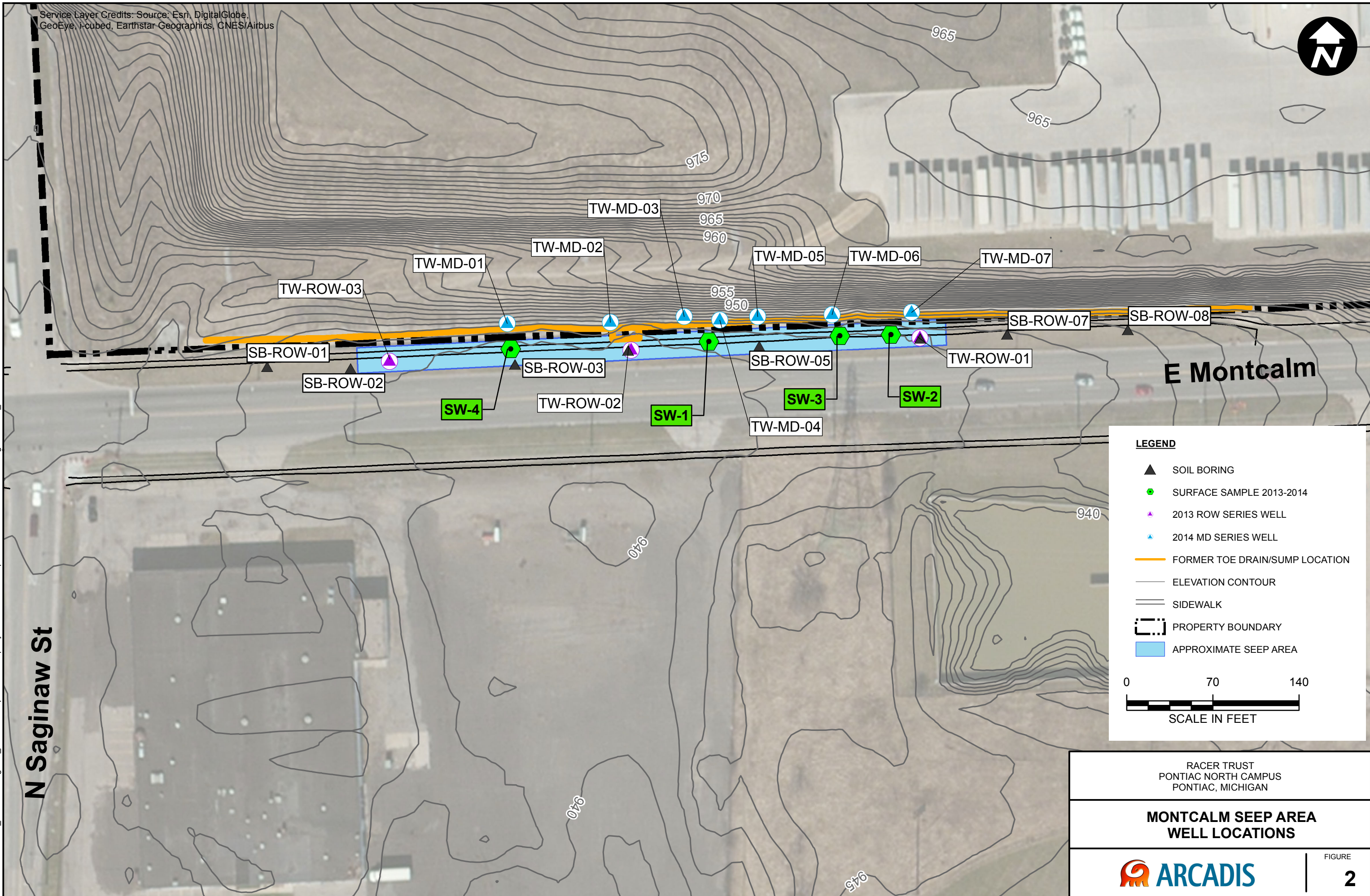
FIGURE
1



CITY: Novi DIV: ENV DB: TRY PIC: PM: TM: TR: PROJECT NUMBER: COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Z:\GIS\PROJECTS\ENV\Novi\Brighton_ILM\MotorsLiquidation\Company\Pontiac\NorthCampus\Documents\2014-Memo Figures\FIG2_Montcalm Site\features.mxd PLOTTED: 10/29/2014 11:45:11 AM BY: Akens

N Saginaw St

E Montcalm



LEGEND

- ▲ SOIL BORING
- SURFACE SAMPLE 2013-2014
- ▲ 2013 ROW SERIES WELL
- ▲ 2014 MD SERIES WELL
- FORMER TOE DRAIN/SUMP LOCATION
- ELEVATION CONTOUR
- SIDEWALK
- ▭ PROPERTY BOUNDARY
- APPROXIMATE SEEP AREA

0 70 140
SCALE IN FEET

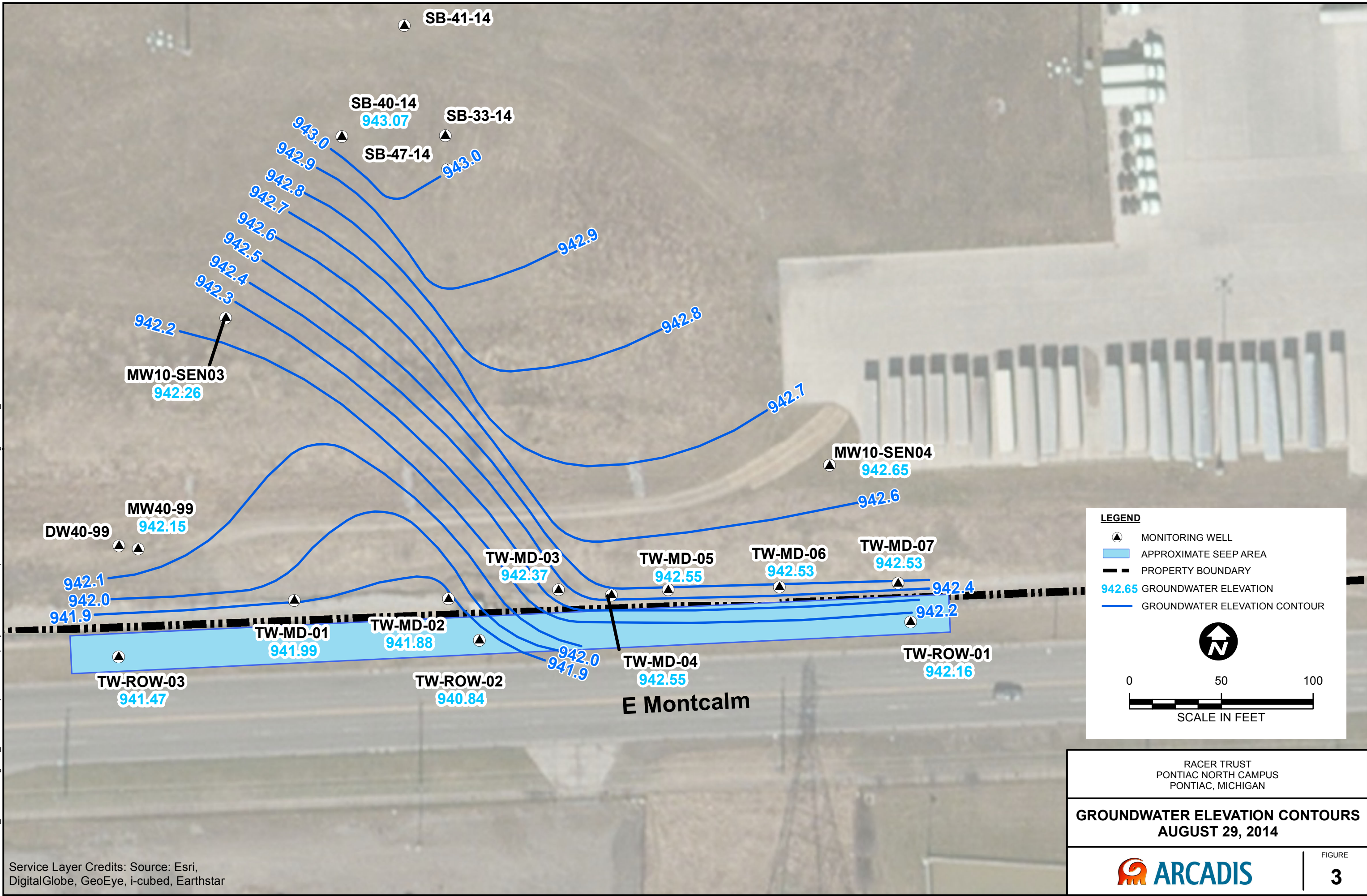
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PONTIAC, MICHIGAN

**MONTCALM SEEP AREA
WELL LOCATIONS**

ARCADIS

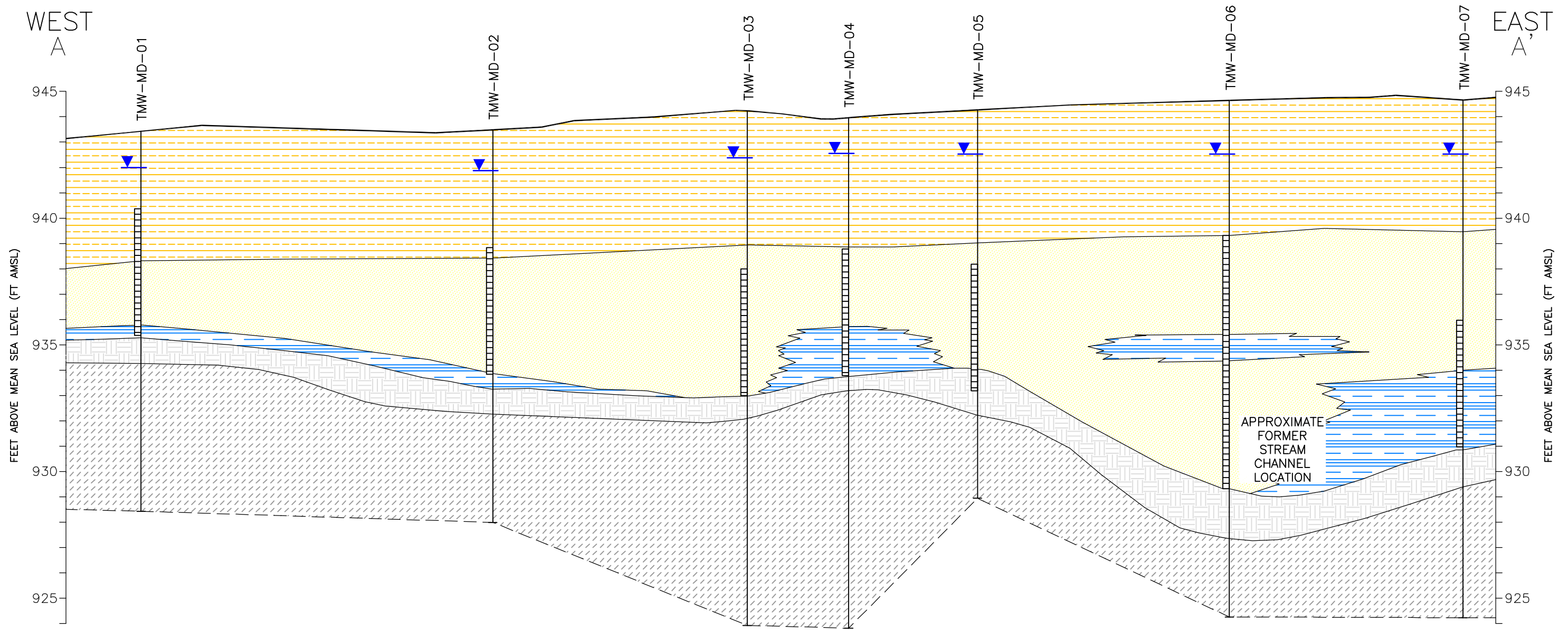
FIGURE
2

CITY: Novi DIV: ENV DB: TRY PIC: PM: TM: TR: PROJECT NUMBER: COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet
 Z:\GIS\PROJECTS\ENV\Novi\Brighton_MIMotorsLiquidation\Company\PontiacNorthCampus\Documents\2014-Memo Figures\FIG3_2014RACER PNC GW CONTOURS.mxd PLOTTED: 10/28/2014 4:40:59 PM BY: Akens



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar

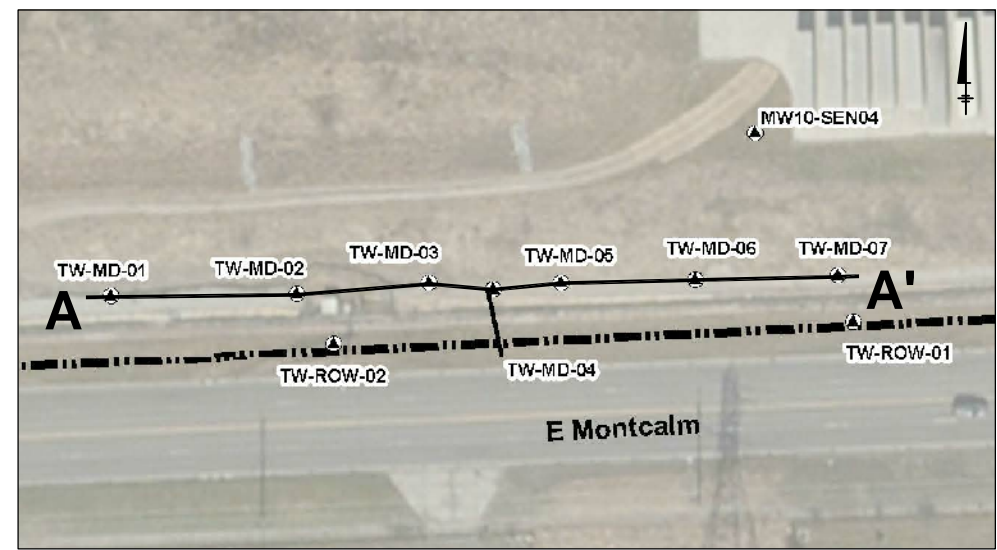
CITY/BRIGHTON DIV/GROUP:141 DBA/FOX LD(Opt) PIC(Opt) TM(Opt) LYR(Opt)ON=OFF=REF*
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 PNC Montcalm X-sec.jpg



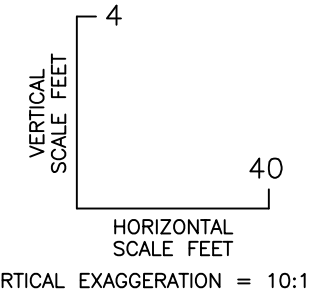
LEGEND

- TOPSOIL & SAND-SILT-CLAY-FILL
- SANDY FILL
- CLAY
- PEAT
- MARL
- MONITORING WELL
- GROUNDWATER ELEVATION
- SCREENED INTERVAL
- END OF BORING
- DEPTH EXPLORED
- APPROXIMATE GEOLOGIC CONTACT

NOTE:
 1. MONITORING WELL ELEVATIONS PROVIDED IN FEET ABOVE MEAN SEA LEVEL (NAD 1983).



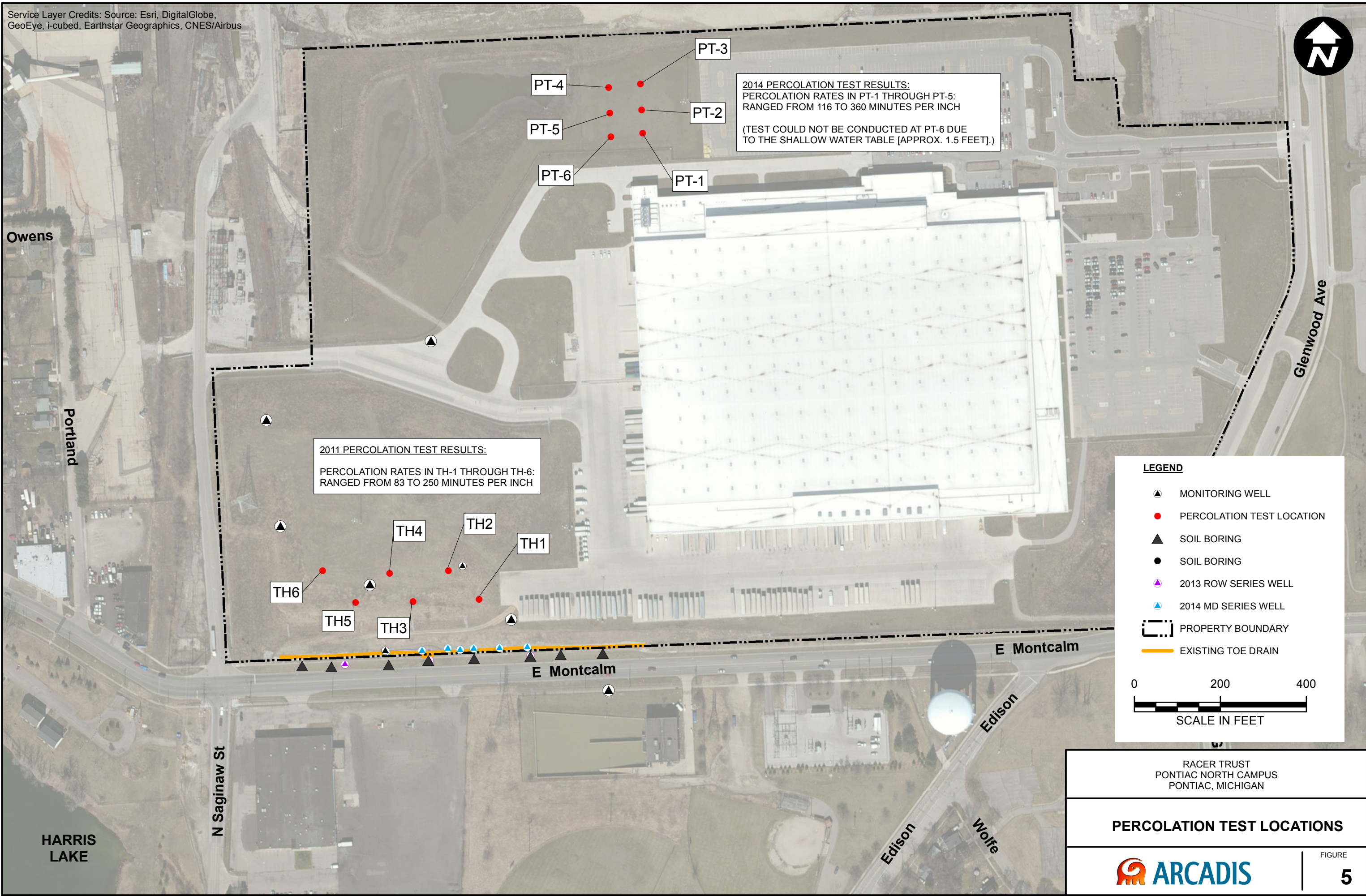
CROSS SECTION LOCATION



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GEOLOGIC CROSS SECTION A-A'
 (WEST-EAST)

FIGURE
4

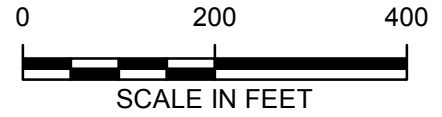


2014 PERCOLATION TEST RESULTS:
PERCOLATION RATES IN PT-1 THROUGH PT-5:
RANGED FROM 116 TO 360 MINUTES PER INCH

(TEST COULD NOT BE CONDUCTED AT PT-6 DUE
TO THE SHALLOW WATER TABLE [APPROX. 1.5 FEET].)

2011 PERCOLATION TEST RESULTS:
PERCOLATION RATES IN TH-1 THROUGH TH-6:
RANGED FROM 83 TO 250 MINUTES PER INCH

- LEGEND**
- ▲ MONITORING WELL
 - PERCOLATION TEST LOCATION
 - ▲ SOIL BORING
 - SOIL BORING
 - ▲ 2013 ROW SERIES WELL
 - ▲ 2014 MD SERIES WELL
 - ▭ PROPERTY BOUNDARY
 - EXISTING TOE DRAIN



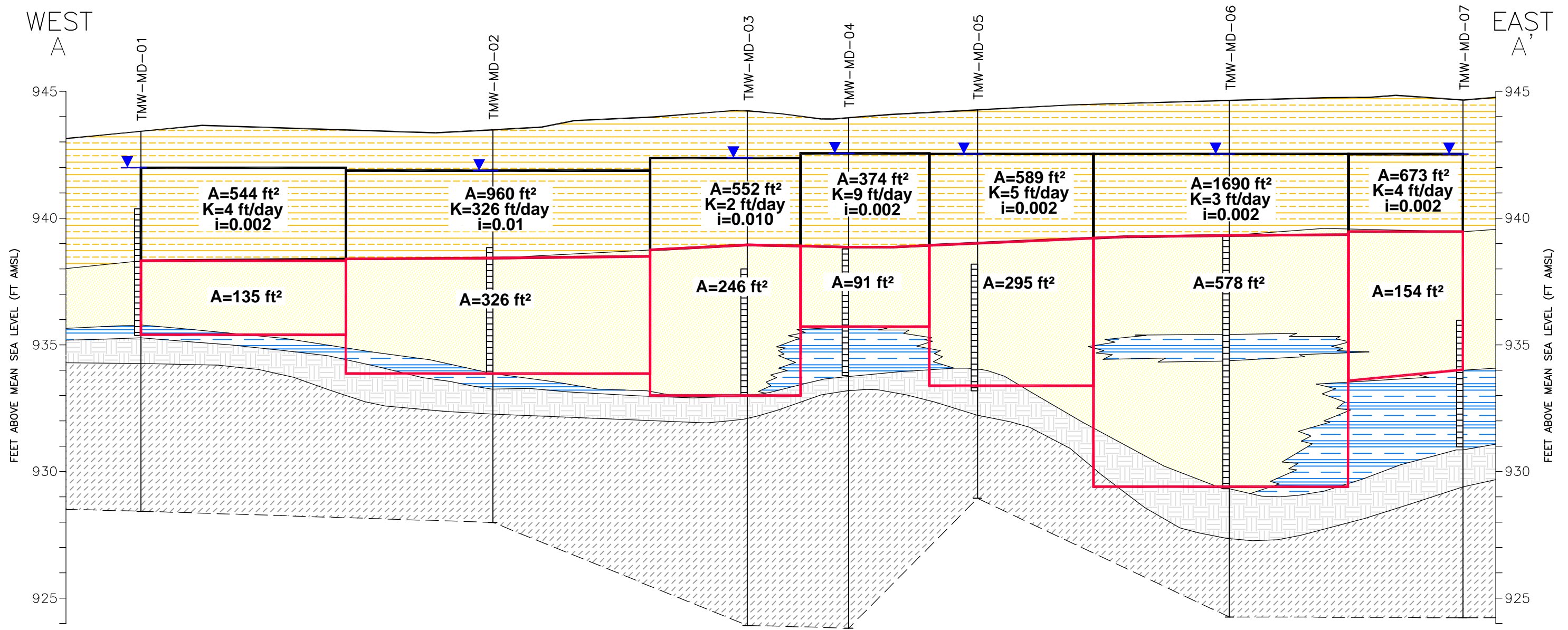
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PERCOLATION TEST LOCATIONS

ARCADIS

FIGURE **5**

CITY=BRIGHTON DIV=GROUP:141 DB=AF0X LD=OP1 PIC=OP1 TM=OP1 LXR=OP1ON=OFF=REF*
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 Groundwater Discharge Flux Draft.jpg
 PVC Montcalm X-sec.jpg

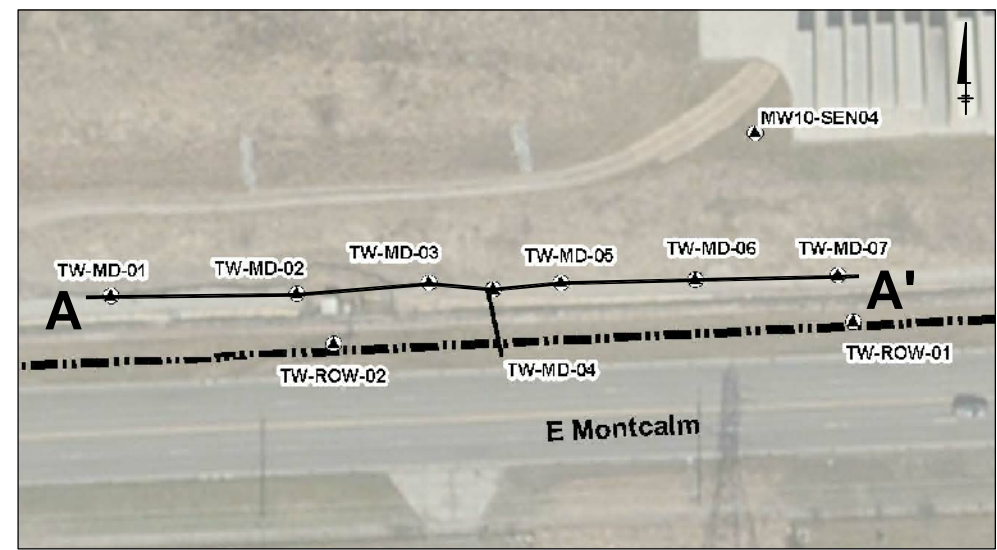


LEGEND

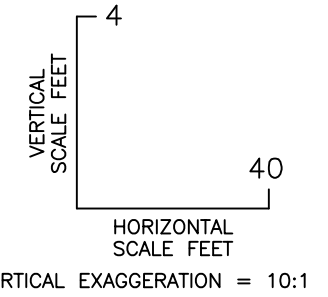
- TOPSOIL/SILT/CLAY/FILL
- SAND
- CLAY
- PEAT
- MARL
- MONITORING WELL
- GROUNDWATER ELEVATION
- SCREENED INTERVAL
- END OF BORING
- DEPTH EXPLORED
- APPROXIMATE GEOLOGIC CONTACT
- AREA 1 - MORE PERMEABLE SAND UNIT
- AREA 2 - TOTAL SATURATED THICKNESS (SAND/FILL)

NOTES:

- GROUND SURFACE ELEVATIONS ESTIMATED.
- ALL ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL



CROSS SECTION LOCATION



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GROUNDWATER DISCHARGE

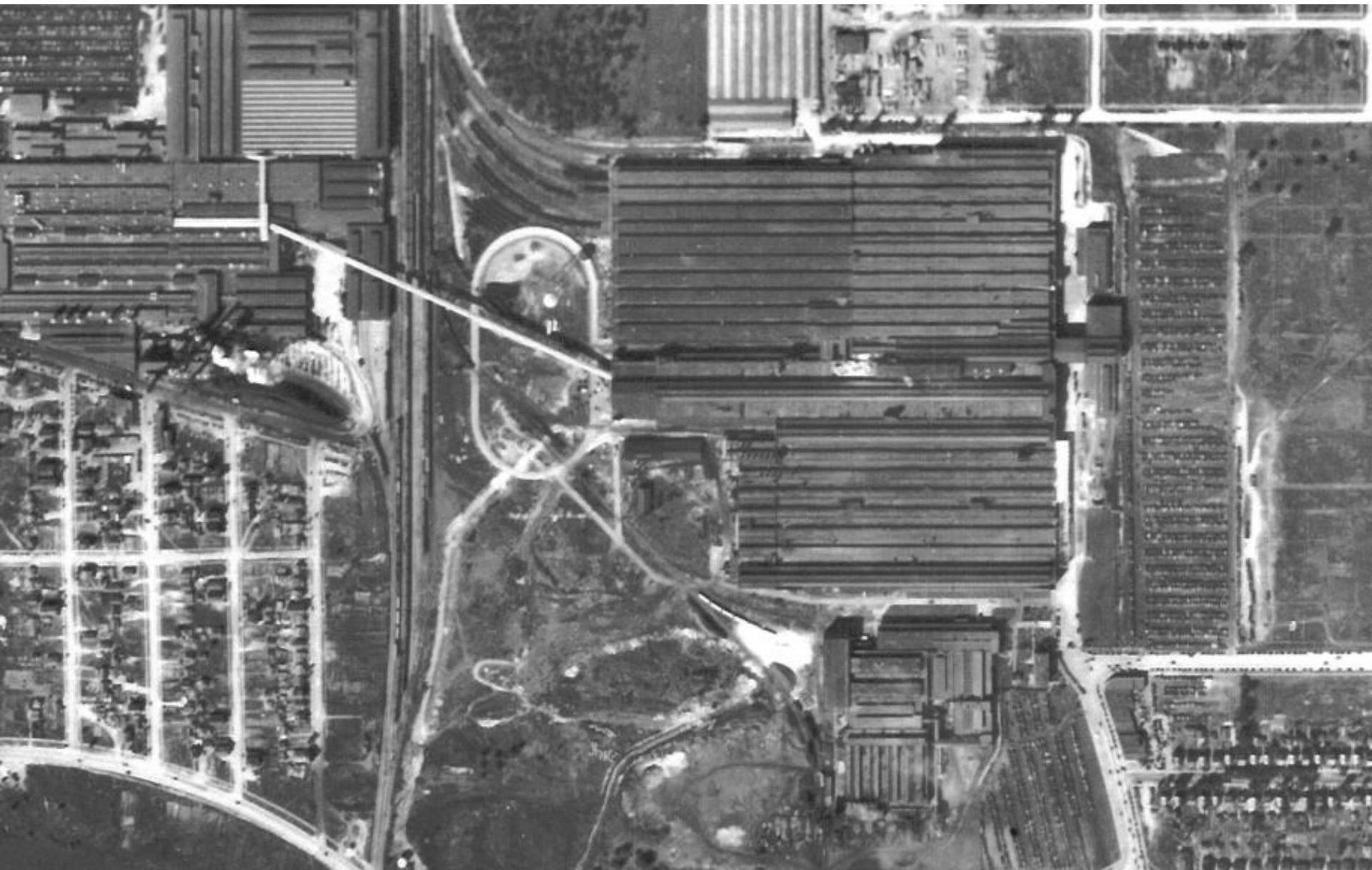
FIGURE
6



Attachment 1

Historical Aerial Photographs and
Topographic Maps

1937



1940



1951



1967



1993



2005



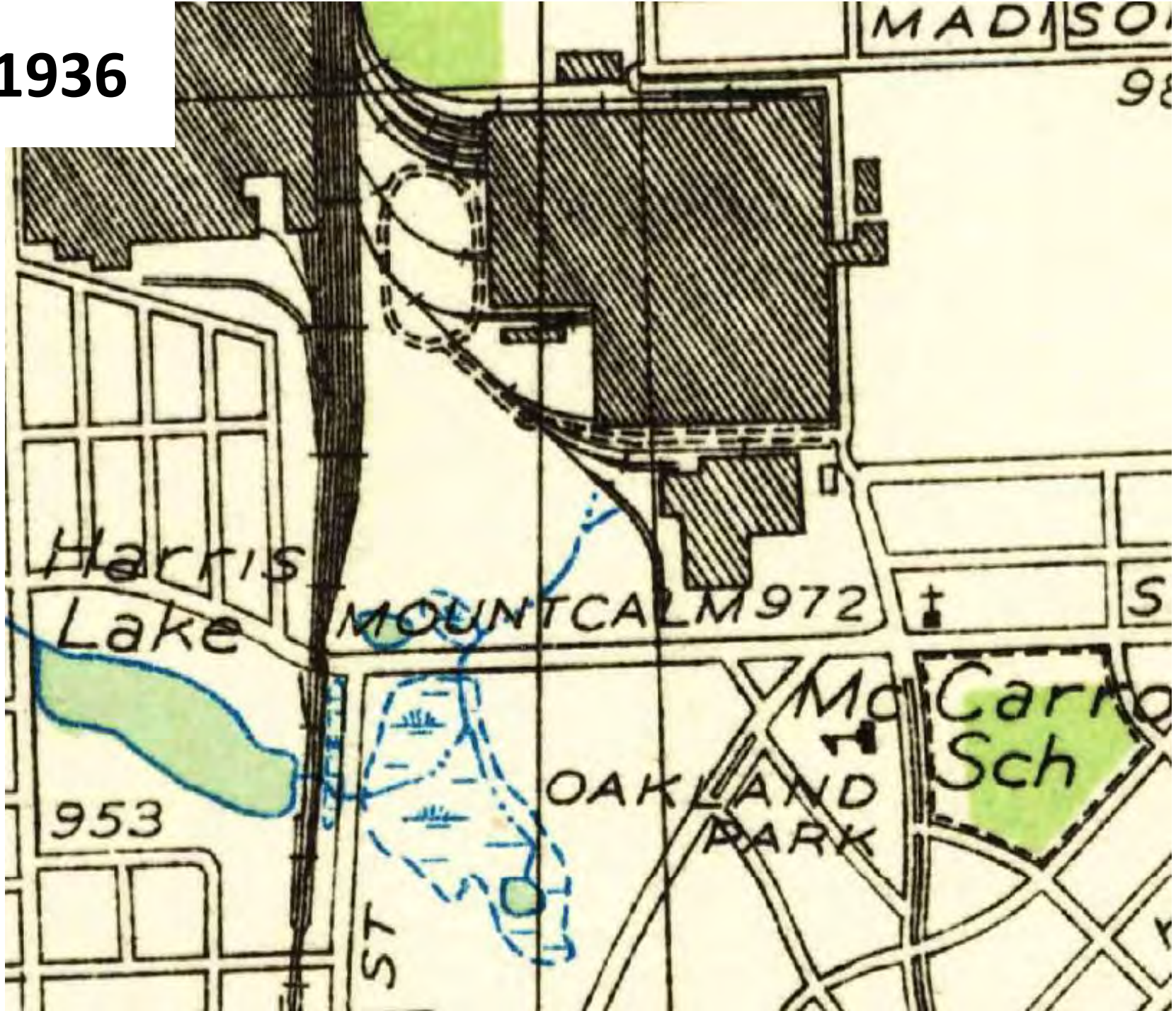
2010



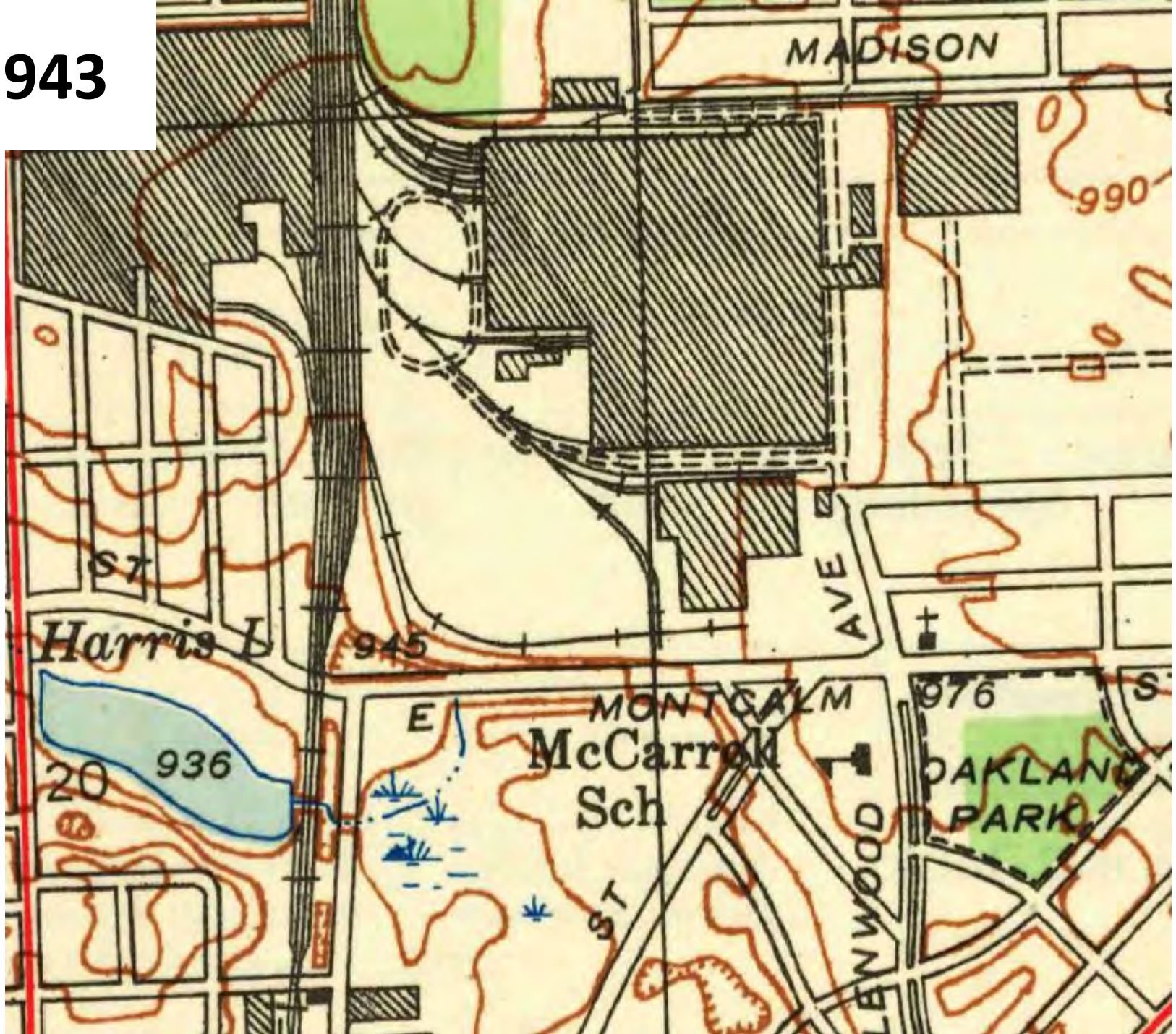
1907



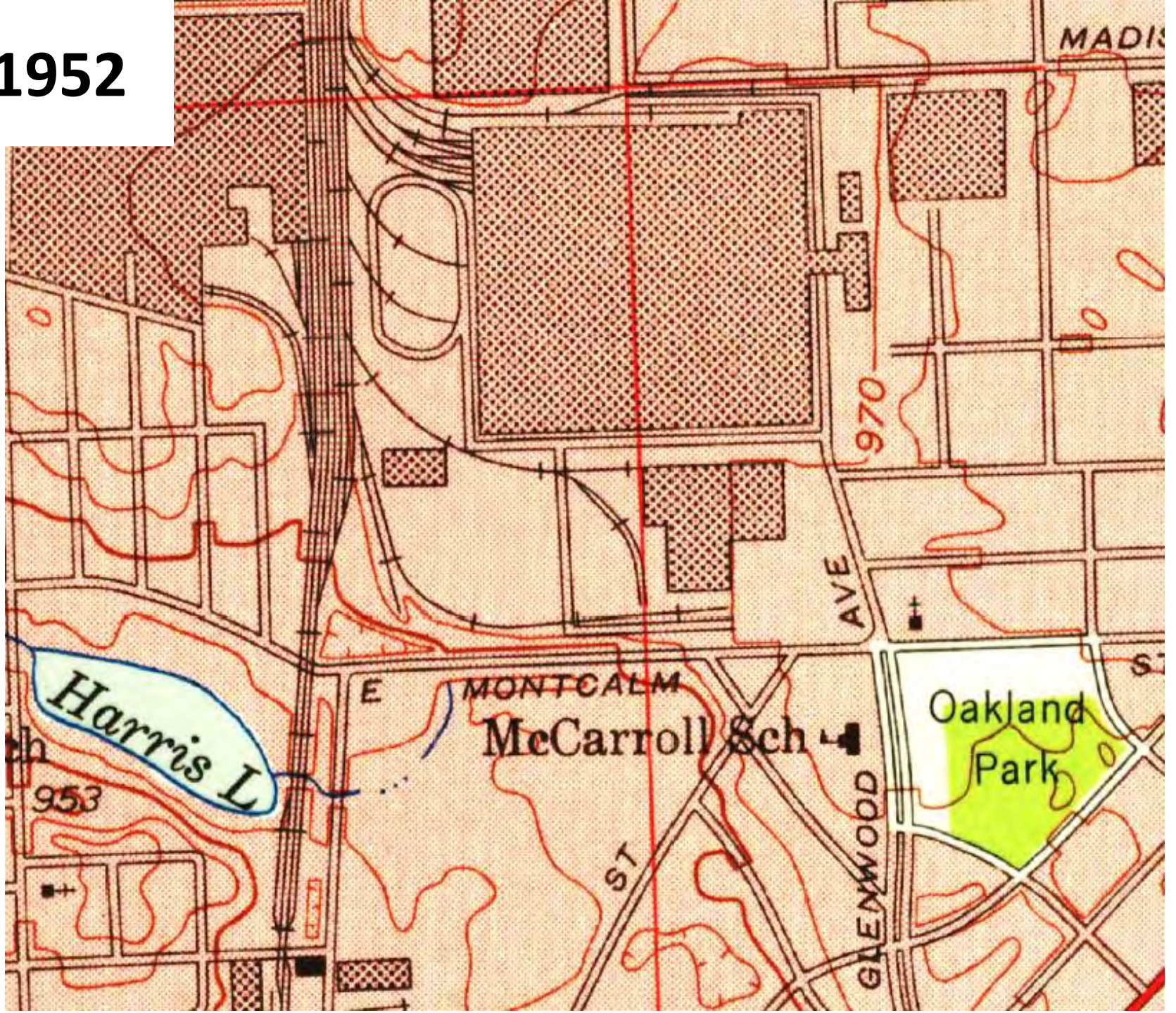
1936



1943



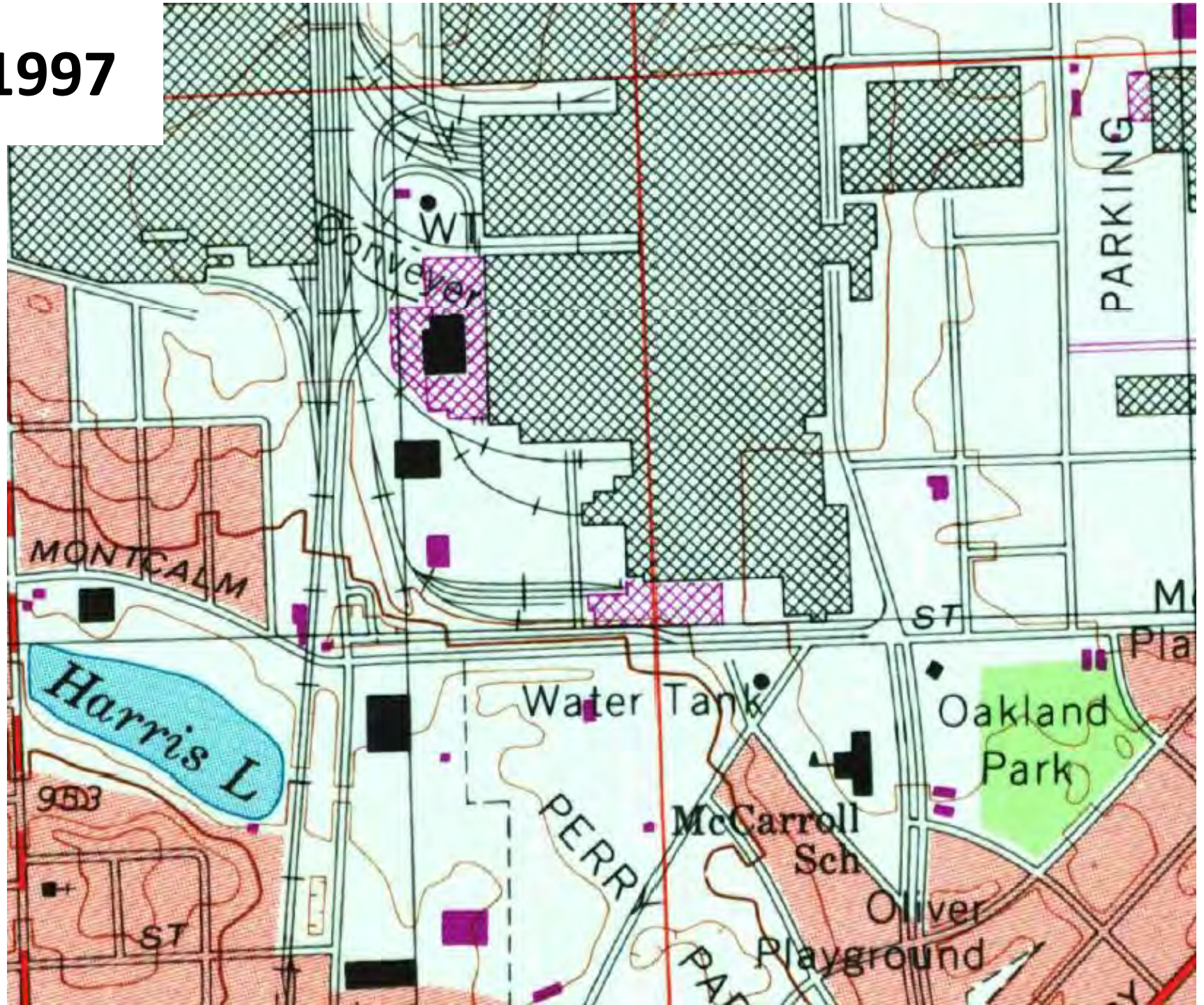
1952



1973



1997





Attachment 2

Well Construction and Soil Boring
Logs (on CD)



Attachment 3

2013-2014 Groundwater Laboratory
Analytical Reports (on CD)



Attachment (

2013-2014 Surface Water
Laboratory Analytical Reports
(on CD)



Attachment 5

Forensic Sheen Interpretation
Memo (on CD)



Attachment 6

Schleede Hampton Lab Report
(on CD)



Attachment 7

Slug Test Data (on CD)