



**CONESTOGA-ROVERS
& ASSOCIATES**

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February 6, 2014

Reference No. 007097

VIA EMAIL ONLY (PDF)

Mr. Peter Ramanauskas
U.S. Environmental Protection Agency, Region 5
77 West Jackson Blvd., LU-9J
Chicago, IL 60604-3590

Dear Mr. Ramanauskas:

Re: Comments and Responses

Conestoga-Rovers & Associates, Inc. (CRA) on behalf of Revitalizing Auto Communities Environmental Response (RACER) presents this response to United States Environmental Protection Agency (USEPA) email dated November 22, 2013. The USEPA requested updating either the October 2010 LUST Closure Report or the February 10, 2012 CRA letter to have a complete, updated closure request package that would include:

- All of the soil/groundwater data (tables/figures) for the area
- A figure showing groundwater flow direction in the area
- All soil boring and well construction logs (the 2010 LUST Closure report only seems to include MW34-01 through MW34-04)
- Rationale for excluding the GSI pathway including a description of the sewer depths relative to residual contamination
- Rationale for concluding soil has been fully delineated (identifying bounding criteria)
- Rationale for concluding there is no DNAPL/free product presence including a discussion of how the existing site soil data would compare to soil saturation screening levels adjusted to account for multiple contaminants

A letter report from CRA (on behalf of RACER) to the USEPA, dated February 4, 2014 and titled "Summary for AOI #50 -DUCO Stores – Building 34" (CRA, 2014) has been prepared to fulfill USEPA's request for an updated closure request package and is attached to this cover letter. The following are comments from the USEPA's e-mail and responses:

1. USEPA Comment

- All of the soil/groundwater data (tables/figures) for the area.

Response

Soil data from the 2007 through 2012 field investigations are presented in Table 1 of the attached letter report. Groundwater data from the 2009 through 2012 field investigations are presented in

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Table 2 of the attached letter report. The soil and groundwater data is compared against MDEQ Part 201 Cleanup Criteria.

2. USEPA Comment

- A figure showing groundwater flow direction in the area.

Response

An updated groundwater contour map from water levels collected on July 18, 2013 is presented as Figure 3 of the attached letter report.

3. USEPA Comment

- All soil boring and well construction logs (the 2010 LUST Closure report only seems to include MW34-01 through MW34-04).

Response

The soil boring logs from the 2008 and 2012 field investigations are presented in Attachment A and the monitoring well construction logs from MW34-01 through MW34-08 are presented in Attachment B of attached letter report.

4. USEPA Comment

- Rationale for excluding the GSI pathway including a description of the sewer depths relative to residual contamination.

Response

To be consistent with the October 2010 Leaking Underground Storage Tanks Closure Report for releases associated with AOI #50, the GSI pathway is not excluded from comparison to soil and groundwater analytical results. Therefore, the analytical results are compared against the Groundwater to Surface Water Interface (GSI) and Groundwater to Surface Water Interface Protection (GSIP) criteria in the attached letter report; however, it is unlikely that impacted groundwater or soil are or will negatively impact storm sewers, storm sewer bedding material, or ultimately a surface water body. A discussion of sewer depths relative to residual contamination is presented under the Section "Storm Sewer and Groundwater to Surface Water Evaluation" of the attached letter.



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5. USEPA Comment

- Rationale for concluding soil has been fully delineated (identifying bounding criteria).

Response

The locations (SB-4-08, SB-5-08, SB-7-08 and SB-1-12) exceeding applicable Part 201 Criteria were all delineated to the north, east, south and west. There is additional discussion regarding delineation of impacts and identification of applicable Part 201 Criteria in the attached letter report.

6. USEPA Comment

- Rationale for concluding there is no DNAPL/free product presence including a discussion of how the existing site soil data would compare to soil saturation screening levels adjusted to account for multiple contaminants.

Response

The rationale for concluding there is no NAPL present is based on multiple lines of evidence. The rationale is described in the attached letter.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Thomas M. Kinney

TMK/MJC/4/Det.

Encl. Letter report from CRA (on behalf of RACER) to the USEPA, dated February 4, 2014 and titled "Summary for AOI #50 -DUCO Stores – Building 34"; (CRA, 2014)

cc: Grant Trigger, RACER
Dave Favero, RACER



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Mr. Peter Ramanauskas
U.S. Environmental Protection Agency, Region 5
77 West Jackson Blvd., LU-9J
Chicago, IL 60604-3590

Dear Mr. Ramanauskas:

Re: Pontiac Centerpoint Campus (Pontiac West) RCRA Corrective
Action – USEPA Facility ID No. MID005356902
Summary for AOI #50 -DUCO Stores – Building 34
660 South Boulevard East, Pontiac, Oakland County, Michigan

This letter was prepared by Conestoga-Rovers & Associates, Inc. (CRA), on behalf of Revitalizing Auto Communities Environmental Response Trust (RACER), to provide the United States Environmental Protection Agency (USEPA) with a summary of available information for AOI #50 – DUCO Stores (at RACER's Pontiac West property, the "Site").

Background

In USEPA's August 3, 2006 Response to Comments and Final Decision for selection of final corrective action for the Pontiac Centerpoint Campus, closure of AOI #50 was identified as being addressed under Michigan Act 451, Part 213.

In order to move the DUCO Stores closure forward under Part 213, a Leaking Underground Storage Tank (LUST) Closure Report (Closure Report) was prepared by CRA, on behalf of Motors Liquidation Company (MLC), and submitted to the Michigan Department of Environmental Quality (MDEQ) in October 2010. MDEQ performed an audit of the October 2010 Closure Report and provided comments in letters dated April 20, 2011 and June 20, 2011. After finalization of a Settlement Agreement through the General Motors Corporation bankruptcy process, USEPA was identified as the Lead Agency for this property. Pursuant to discussion among USEPA, MDEQ, and RACER, as documented in an email dated March 14, 2012, RACER confirmed that the USEPA and MDEQ agreed that the confirmed LUST releases associated with DUCO Stores would be addressed through the RCRA Corrective Action process with USEPA as the Lead Agency. On February 10, 2012, CRA submitted a letter to the USEPA addressing the comments from the MDEQ audit of corrective actions. In response to the February 10, 2012 letter, USEPA requested an investigation of chlorinated volatile organic compound (VOC) impacts located west of the former UST excavation area in the former hazardous materials storage area and VOC impacts located east of the former UST footprint.

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On July 30, 31 and August 1, 2012, a field investigation was completed to further characterize VOC impacts located west of the former UST basin in the former hazardous materials storage area and VOC impacts located east of the former UST footprint. Analytical results indicated concentrations exceeded applicable Part 201 cleanup criteria at several soil boring locations; however, the exceedances were delineated at the Site (as discussed in the sections below). These results were provided to USEPA in a letter dated November 28, 2012.

At the request of USEPA, a groundwater monitoring event was conducted on July 18, 2013 to confirm historic groundwater analytical results. The results of the groundwater monitoring event were consistent with historical results and the results were provided to USEPA in a letter dated September 24, 2013.

Storm Sewer and Groundwater to Surface Water Evaluation

The main storm line in the area of DUCO Stores is orientated north and south with a diameter ranging from 8-48 inches and depth ranging from 13-15 feet within the area of DUCO Stores. The diameter and depth increases as it travels north, eventually increasing in diameter to 72 inches and a depth of approximately 21 feet below ground surface (bgs) as it leaves the Site (to the north). There appears to be a storm sewer lateral that runs east and west that intersects with the main storm line in the northern portion of the DUCO Stores former UST basin. Based on storm line flow maps (Figures 1 and 2), storm water from the area of DUCO Stores drains to the north and discharges into Murphy Creek located approximately 4,200 feet north of DUCO stores.

The groundwater throughout the area of DUCO Stores is generally inconsistent in depth and does not appear to be interconnected. However, a groundwater contour map was completed (Figure 3) with the assumption that the groundwater is interconnected throughout the DUCO Stores area and appears to have a gradient to the north-northeast direction. The depths to groundwater varied greatly from 4.46 to 20.20 feet bgs which is likely the result of fill material, discontinuous sand seams, and surface elevation changes. Upon review of the boring logs (Attachments A and B), most of the monitoring wells appear to be installed in a saturated interval ranging from 8 to 22 feet bgs and less than two feet thick with impermeable clay above and below. Specifically, the borehole water that exceeded GSI criteria from SB-3-08 (located 100 feet east of the storm line) and SB-4-08 (located 40 feet east of the storm line) were collected from approximately 12 to 15 feet bgs. Although the samples from the borehole water are from a similar depth interval as the storm sewer, the assumed groundwater flow direction is to the north or northeast and does not intersect with the storm lines. Additionally, no VOCs were detected at any down-gradient wells (MW34-07 and MW34-08). Further, Part 201 was significantly amended in 2012 (by Acts 190 and 446) with regards to obligations to address substances in groundwater that may impact surface water (the Groundwater to Surface water Interface or "GSI" pathway). The Act 190 amendments to Part 201 substantially changed the manner in which this condition can be addressed, in that it is no longer necessary for surface water criteria (promulgated as Part 201 GSI criteria) to be met



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in groundwater, provided that any venting of substances to surface water does not result in impairment of the protected uses of the receiving surface water body. Based on the nature and extent of the impacts in groundwater (dissolved phase petroleum hydrocarbons at relatively low concentrations within a defined and limited area) the potential for impacts to the storm sewer are low and more significantly, the potential for impacts to make it into a storm sewer, mix with storm water and travel nearly a mile to the nearest creek are even lower.

Although it is unlikely groundwater is impacting the storm lines and even less likely that there is a potential for impacts to surface water, to be consistent with the October 2010 Leaking Underground Storage Tanks Closure Report for releases associated with AOI #50 (DUCO Stores), the groundwater and soil analytical results are compared against the Groundwater to Surface Water Interface (GSI) and Groundwater to Surface Water Interface Protection (GSIP) criteria, respectively. A description of soil and groundwater impacts associated with the DUCO Stores in comparison to the GSI pathway is described below:

Soil:

Results from historical soil samples collected within the former DUCO Stores UST basin along the storm sewer line were below GSIP except for reported concentrations of naphthalene and xylenes in sample 45 (a sidewall sample collected at 6.5 ft bgs), which are not considered mobile constituents.

Soil samples collected during the 2008 investigation contained concentrations of various metals from SB-4-08 (10-12 feet bgs) at SB-5-08 (15-16 feet bgs) and SB-7-08 (10.5-12 feet bgs) that exceeded GSIP; however, they are not considered mobile constituents.

Soil samples collected during the 2008 and 2012 investigation contained concentrations of 1,1,1-trichloroethane (1-1-1 TCA), 1,1 – dichloroethene (1,1-DCE) and trichloroethene (TCE) that exceeded GSIP at SB-07-08 (10.5-12 feet bgs) and SB-1-12 (10-12 feet bgs). Both soil borings were located west of the main storm line with the closest boring (SB-1-12) located 45 feet west of the main storm line. In addition, SB-1-12 is located just south of the lateral line leading to the main storm line. Soil boring SB-19-12 was installed between SB-1-12 and the main storm line and soil results from SB-19-12 were below GSIP criteria. In general, the impacts above GSIP are unlikely to leach to groundwater and migrate to the main storm line. GSIP exceedances are delineated in all directions by borings SB-17-12, SB-18-12, SB-19-12 and SB-2-12. Figure 4 presents a Site map with soil boring and sample locations. Figure 5 presents a site map with 2007-2012 soil analytical results.

Groundwater:

Groundwater collected from borehole water at SB-3-08 and SB-4-08 exceeded GSI criteria. SB-3-08 contained an exceedance of isopropyl benzene and SB-4-08 had exceedances of 2-methynaphthalene, naphthalene, benzene and ethylbenzene. The impacted borehole water was collected from borings



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located approximately 100 feet east of the storm line (SB-3-08) and 40 feet east of the storm line (SB-4-08). Both borings were installed directly north of the former UST excavation. Monitoring wells MW34-05, MW34-07 and MW34-08 were installed to the northwest, north and northeast of SB-3-08 and SB-4-08 to delineate potential groundwater impacts. MW34-06 was installed in the former tank cavity to evaluate groundwater impacts in the source area. Based on the groundwater analytical results from monitoring wells MW34-05 through MW34-08, there were no exceedances of the generic Part 201/213 criteria. Therefore, based on current and historical data, it appears the impacted groundwater associated with soil borings SB-3-08 and SB-4-08 is limited in nature and extent. The impacted groundwater is unlikely to migrate to a surface water body via natural groundwater transport or via storm sewers. Figure 6 present site maps with 2008, 2009 and 2013 groundwater and borehole water analytical results.

Applicable Comparison Criteria for Investigations

The DUCO Stores UST systems have been removed from the ground and the former hazardous materials storage area is no longer used for hazmat storage, eliminating the apparent sources of the releases. Current and planned restrictions at the Site include the following:

- Restrict land use to industrial/commercial uses
- Restrict resource use to prevent shallow groundwater from being used for drinking water
- Prohibit construction of wells
- Restrict vapor intrusion by requiring soil vapor assessment and/or management near the former hazardous materials storage area as proposed in the November 28, 2012 letter titled "RCRA Corrective Action - Releases associated with AOI 50 and an UST near AOI 53"

These restrictions will prevent complete exposure pathways for all residential pathway criteria, the soil volatilization to indoor air criteria (SVIIC), groundwater volatilization to indoor air criteria (GVIIC), drinking water criteria (DWC) and drinking water protection criteria (DWPC). Therefore, no further action is required for residential exceedances and the SVIIC, GVIIC, DWC and DWPC pathway exceedances.

Based on the current and planned future Site restrictions, and Site specific characteristics described above, the following Non-Residential criteria are applicable for the Site:

Soil:

- Groundwater Contact Protection Criteria (GCPC)
- Groundwater Surface Water Interface Protection Criteria (GSIP)
- Direct Contact Criteria (DCC)



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- Soil Saturation Concentration Screening (Csat)

Groundwater:

- Groundwater Contact Criteria (GCC)
- Groundwater Surface Water Interface Criteria (GSI)
- Water Solubility
- Flammability/Explosivity Screening Level (FESL)

The analytical data for soil and groundwater compared to all generic Part 201/213 criteria are presented in Tables 1 and 2, respectively.

Summary of Soil Results

Positive Sudan IV jar tests were identified in the 2007 and 2008 soil investigation at SB-3-08 (12.5-13 feet bgs) and SB-4-08 (14-14.5 feet bgs). Groundwater samples were collected from these locations at similar depth intervals and analytical results did not contain concentrations indicative of potential solubility exceedances. Further, no evidence of NAPL was observed in either groundwater sampling location.

Upon review of soil analytical results from 2007-2012, constituents did not exceed applicable Part 201/2013 criteria except GSIP at SB-4-08 (10-12 feet bgs), SB-5-08 (15-16 feet bgs), SB-7-08 (10.5-12 feet bgs) and SB-1-12 (10-12 feet bgs) as identified below:

- SB-4-08 (10-12 feet bgs) exceeded GSIP for selenium
- SB-5-08 (15-16 feet bgs) exceeded GSIP for arsenic
- SB-7-08 (10.5-12 feet bgs) exceeded GSIP for selenium, arsenic, 1,1-DCE and 1,1,1-DCA
- SB-1-12 (10-12 feet bgs) exceeded GSIP for 1,1,1-DCA and TCE

Chlorinated VOC exceedances from SB-1-12 and SB-7-08 were delineated by soil borings SB-18-12, SB19-12, SB-2-12 and SB-17-12 to the north, east, south and west, respectively. Therefore, soil impacts with chlorinated VOCs above applicable Part 201/2013 criteria are delineated in the area of DUCCO Stores. The metal impacts at SB-04-08 and SB-5-08 are not considered mobile constituents and unlikely to leach to groundwater and migrate outside the area of DUCCO Stores. See Table 1 for analytical results from 2007-2012. See Figure 5 for a Site map with soil analytical results. See Attachment A for soil boring logs.



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Summary of Groundwater Results

Upon review of groundwater analytical results from 2008-2013, constituents did not exceed applicable Part 201/2013 criteria except GSI from borehole water at SB-3-08 and SB-4-08 as identified below:

- SB-3-08 exceeded GSI for Isopropyl benzene
- SB-4-08 exceeded GSI for benzene, ethylbenzene, 2-methylnaphthalene and naphthalene

Groundwater samples collected from monitoring wells MW34-01, MW34-02, MW34-03, MW34-04, MW34-05, MW34-06, MW34-07 and MW34-08 were below the most restrictive Part 201/2013 criteria to the north, east, south and west. Therefore, groundwater impacts above applicable Part 201/2013 criteria are delineated in the area of DUCO Stores. See Table 2 for analytical results from 2009-2012. See Figure 6 for a Site map with groundwater analytical results. See Attachment B for monitoring well construction details for MW34-01 through MW34-08.

Rationale for Concluding There Is No DNAPL/Free Product Presence

In letters dated April 20, 2011 and June 20, 2011, the MDEQ completed an audit of corrective actions to the October 2010 DUCO Stores UST Closure Report and stated:

"An effort must be made to demonstrate free phase contamination is not present in soils remaining at the Site. Without such information, comparison to the generic criteria is not appropriate; and therefore, it could not be demonstrated that compliance with the applicable cleanup criteria has been achieved."

Based on recent changes to Michigan's Part 213, the "weight of evidence" approach utilized for this project (PID, visual/olfactory evidence, observations and gauging for presence of NAPL, standard analytical values, etc.) toward assessing presence of free phase constituents is an acceptable approach. During CRA's investigations at the DUCO Stores, no evidence of NAPL within the soil matrix was observed and based on "weight of evidence" from the field and analytical results; no evidence of free phase contamination was observed or verified. Further, based on data from the permanent groundwater monitoring wells and the borehole groundwater sampling points (temporary wells), no evidence of free product was observed or detected. Accordingly, comparison to generic criteria appears to be relevant and appropriate for evaluation of soil data collected at the DUCO Stores UST area.



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Conclusion

Based on data collected from the 2007 – 2013 investigations, soil and groundwater data confirm delineation of historic impacts associated with former DUCO Stores area, including the former hazardous materials storage area, and no further investigation is necessary.

No evidence of NAPL within the soil matrix was observed based on CRA's "weight of evidence" approach (Sudan IV jar test, PID, visual/olfactory evidence, standard analytical values, etc.) to assess the potential presence of free phase constituents. Accordingly, comparison to generic criteria appears to be relevant and appropriate for evaluation of soil data collected at the DUCO Stores UST area

No soil samples from 2007-2012 exceeded the Csat criteria at or near the DUCO Stores or former hazardous materials storage areas, and the only applicable criteria exceeded was GSIP. The locations (SB-4-08, SB-5-08, SB-7-08 and SB-1-12) with GSIP criteria exceedances of chlorinated VOCs were all delineated to the north, east, south and west.

Groundwater analytical results from MW34-01 thru MW34-08 are all below the most restrictive generic Part 201/213 criteria. Borehole water from SB-3-08 and SB-4-08 did exceed GSI criteria; however, monitoring wells MW34-05, MW34-07 and MW34-08 (installed down gradient of SB-3-08 and SB-4-08) have no exceedances of the generic Part 201/213 criteria. Based on the groundwater flow direction (north-northeast) and the analytical results, the impacted groundwater associated with the DUCO Stores and former hazardous materials storage area releases is not migrating and is not expected to migrate off Site.

CRA, on behalf of RACER, recommends that the June 2011 Request for RCRA CACC be updated to include the findings of the 2012 - 2013 field activities associated with DUCO Stores and the additional Restrictive Covenant be filed for the property. Following USEPA acceptance of the updated Request for CACC, it is anticipated that USEPA will provide direction on the next steps to be taken, such as a public notice period and/or USEPA final decision document.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Thomas M. Kinney

TMK/MJC/4/Det.



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Encl. Figure 1 – Site overview with relationship to sewers and streams
 Figure 2 – Site map with monitoring well locations, sewers and storm sewer directional flow
 Figure 3 – Groundwater contour map – July 18, 2013
 Figure 4 – Site map with soil boring and sample locations
 Figure 5 – 2007-2012 Soil analytical results
 Figure 6 – 2008, 2009 and 2013 Groundwater and borehole water analytical results

Table 1 – Soil Analytical Results 2007-2012

Table 2 – Groundwater Analytical Results 2008-2013

Attachment A – Soil Boring Logs

Attachment B – Monitoring Well Installation Logs

cc: Grant Trigger, RACER
 Dave Favero, RACER

FIGURES

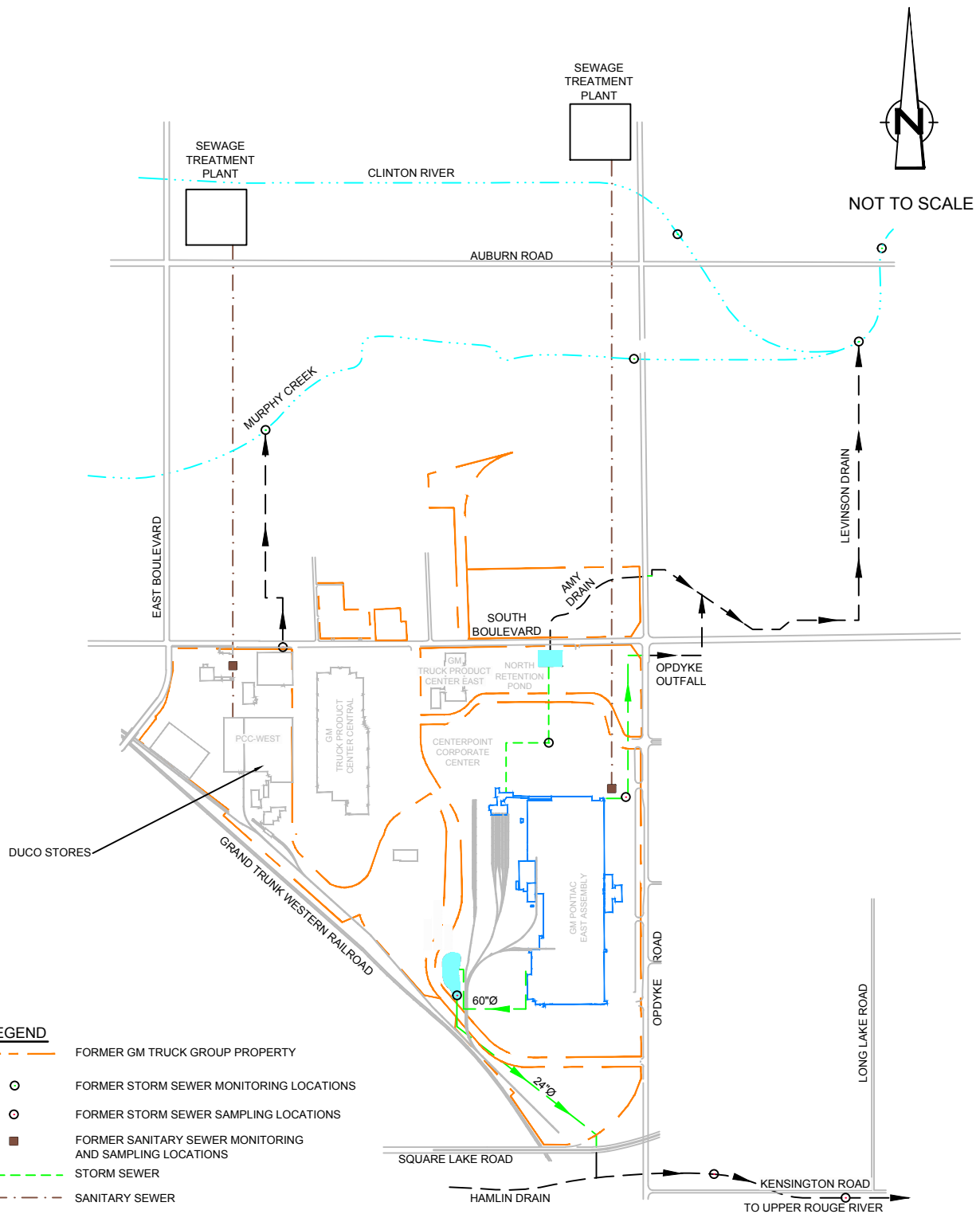
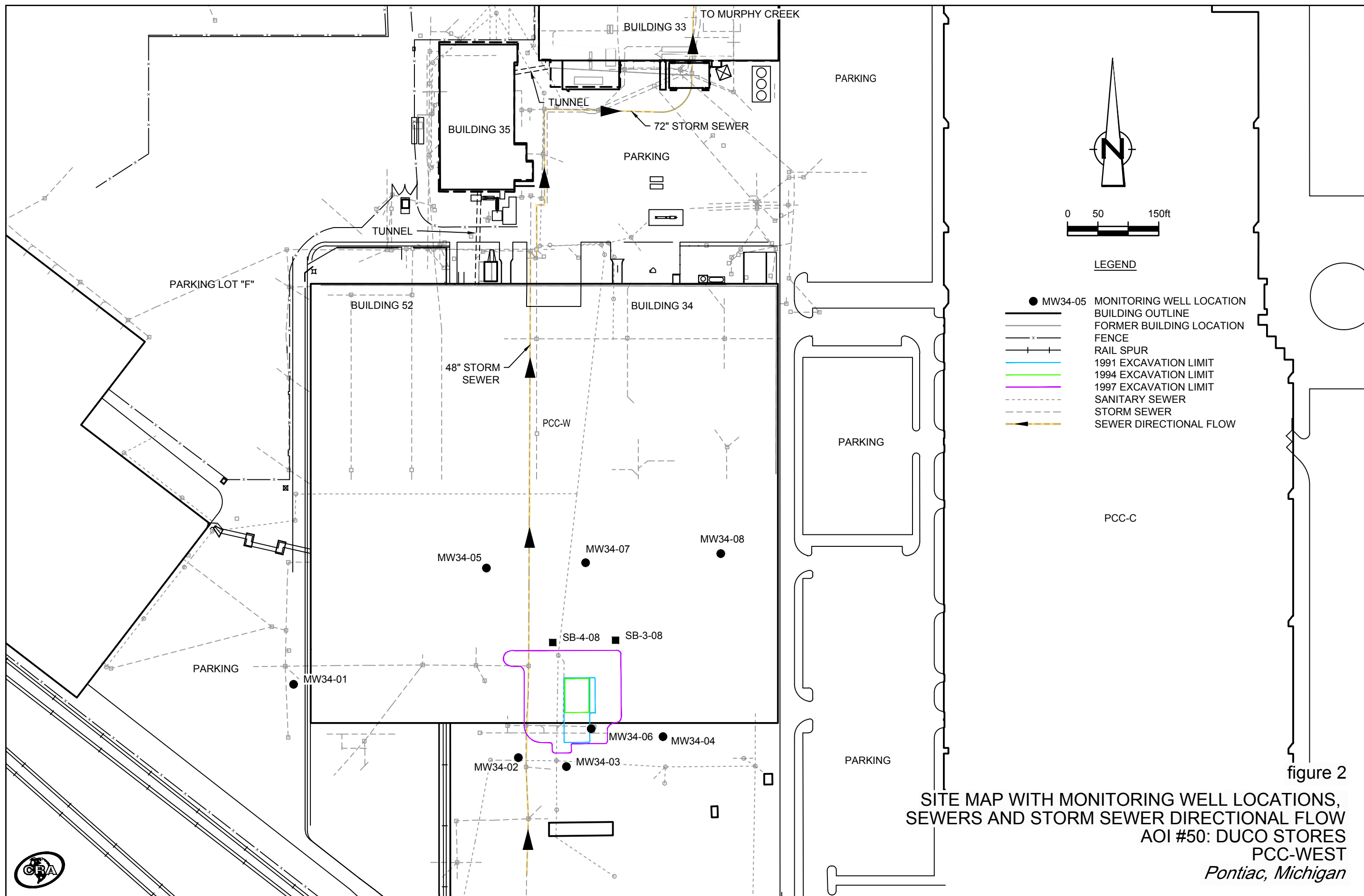


figure 1
 SITE OVERVIEW WITH RELATIONSHIP TO SEWERS AND STREAMS
 AOI #50: DUCO STORES
 PCC-WEST
 Pontiac, Michigan





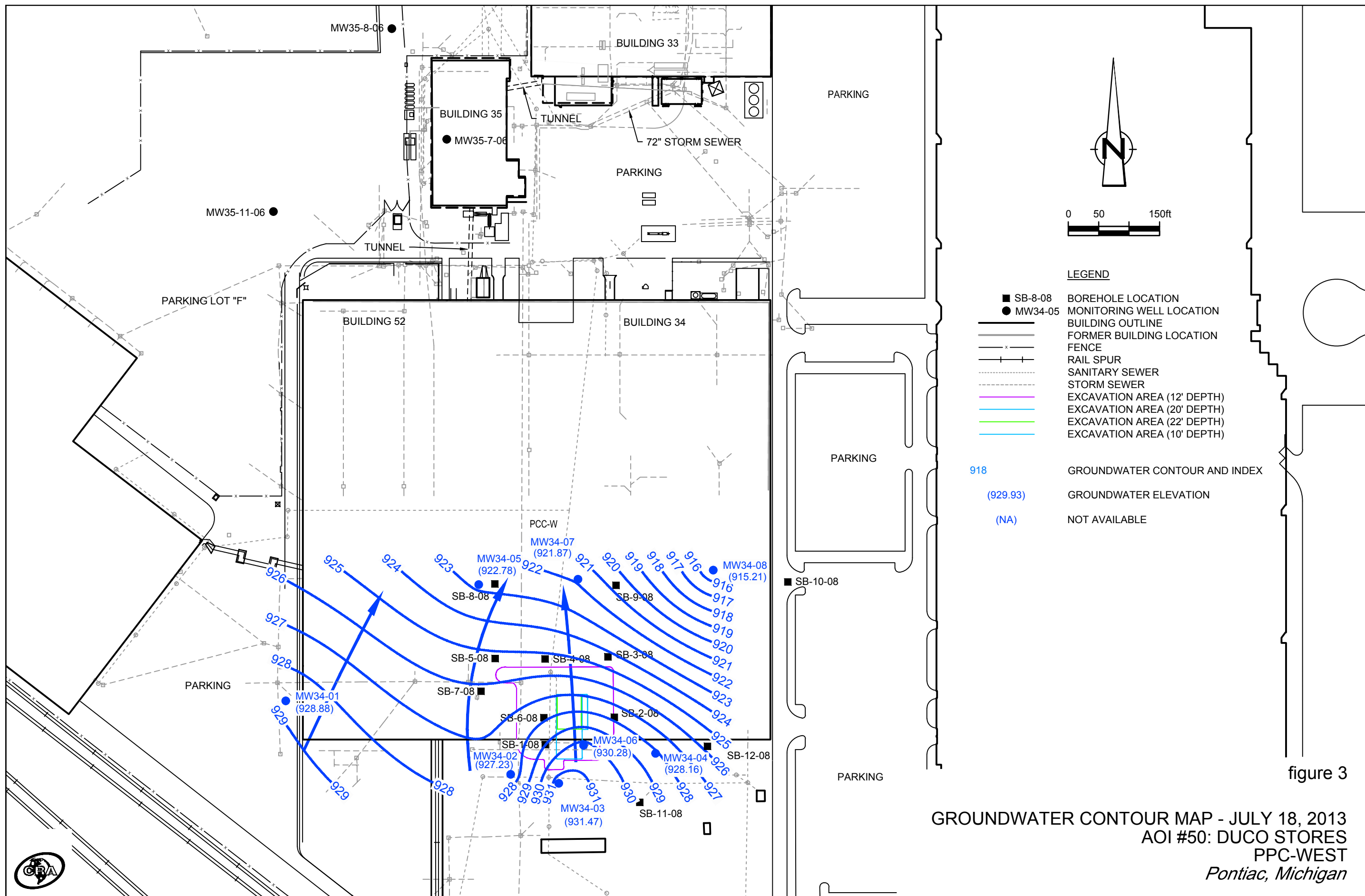


figure 3

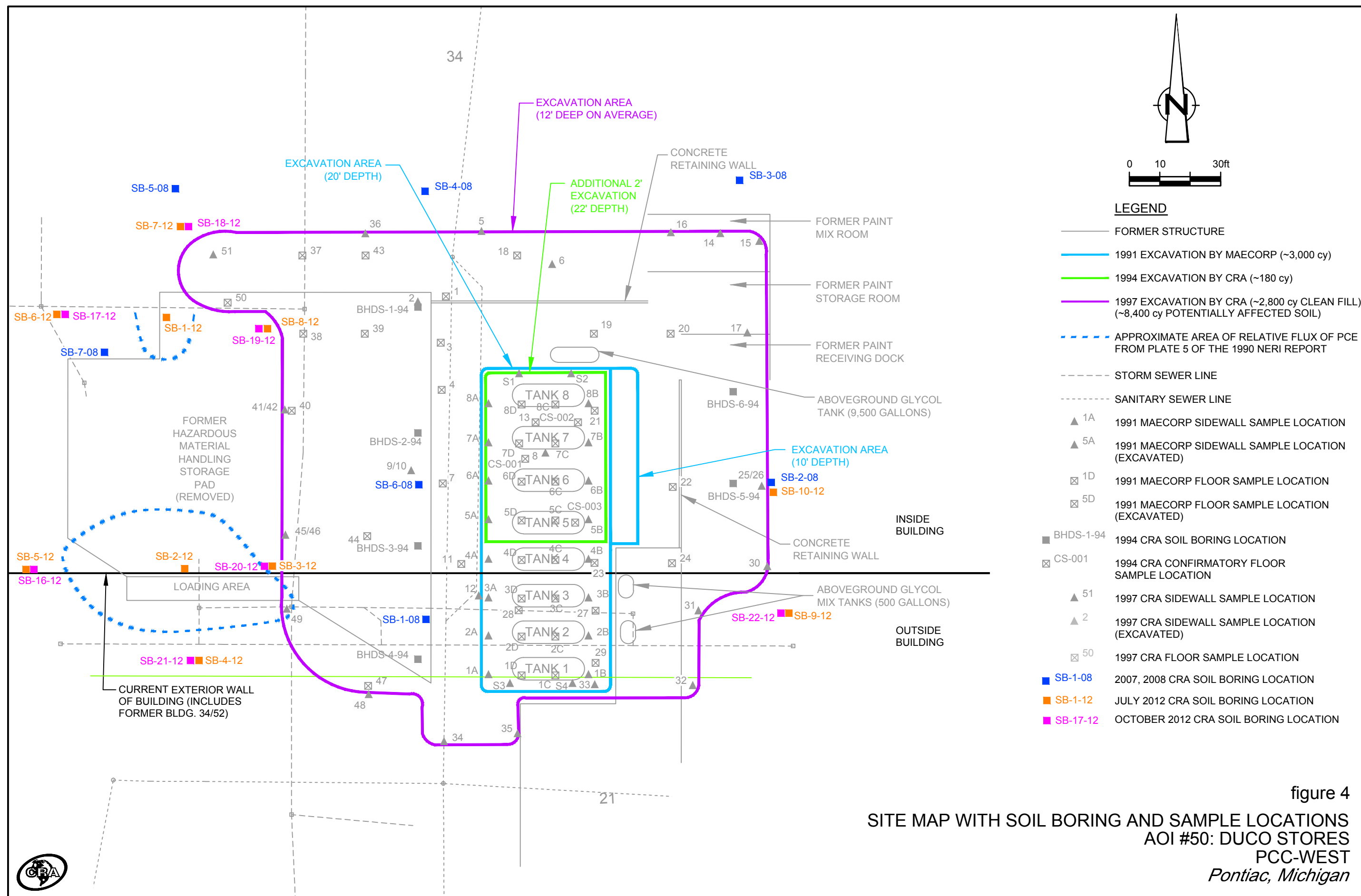


figure 4
 SITE MAP WITH SOIL BORING AND SAMPLE LOCATIONS
 AOI #50: DUCO STORES
 PCC-WEST
 Pontiac, Michigan



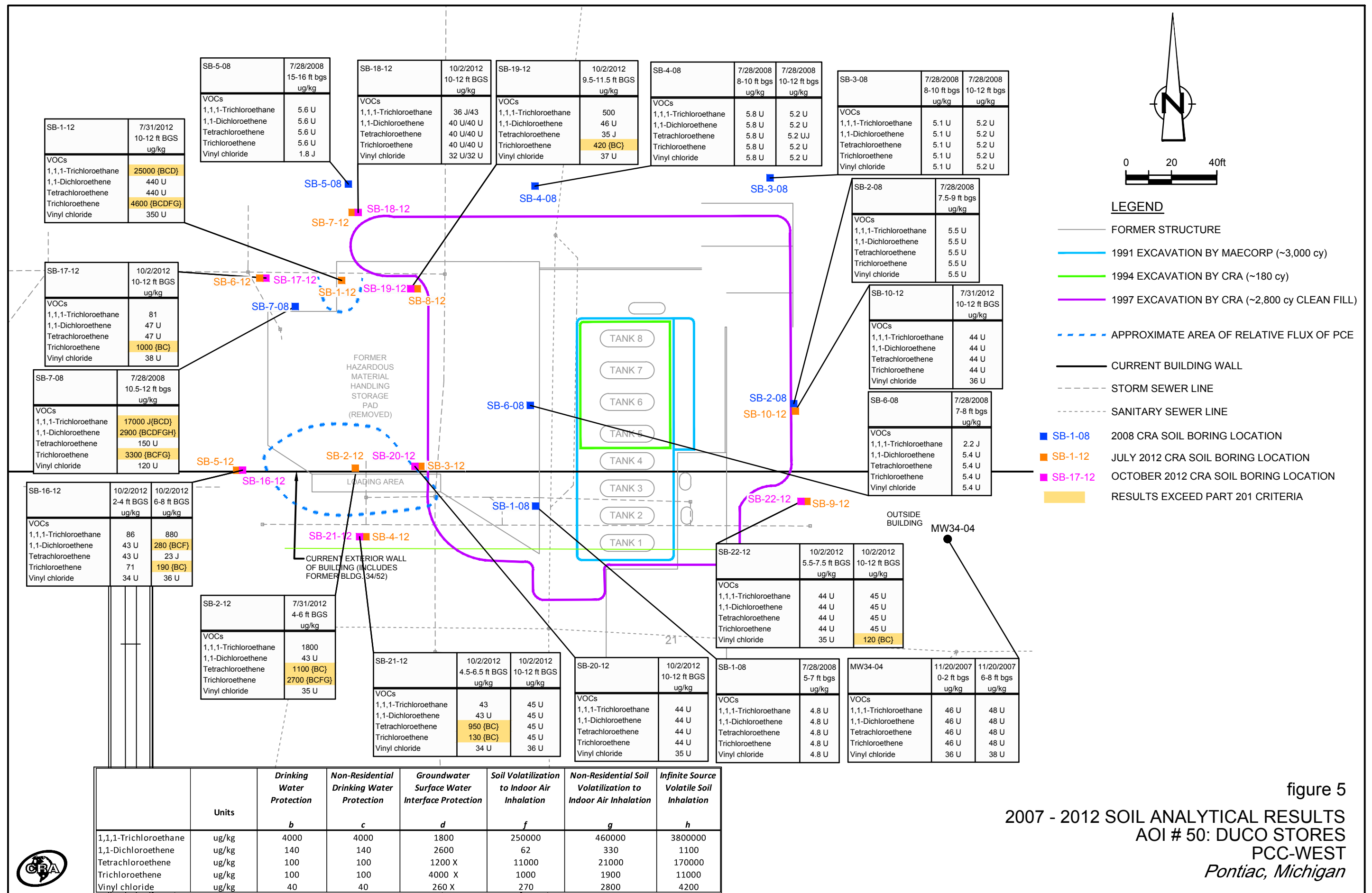
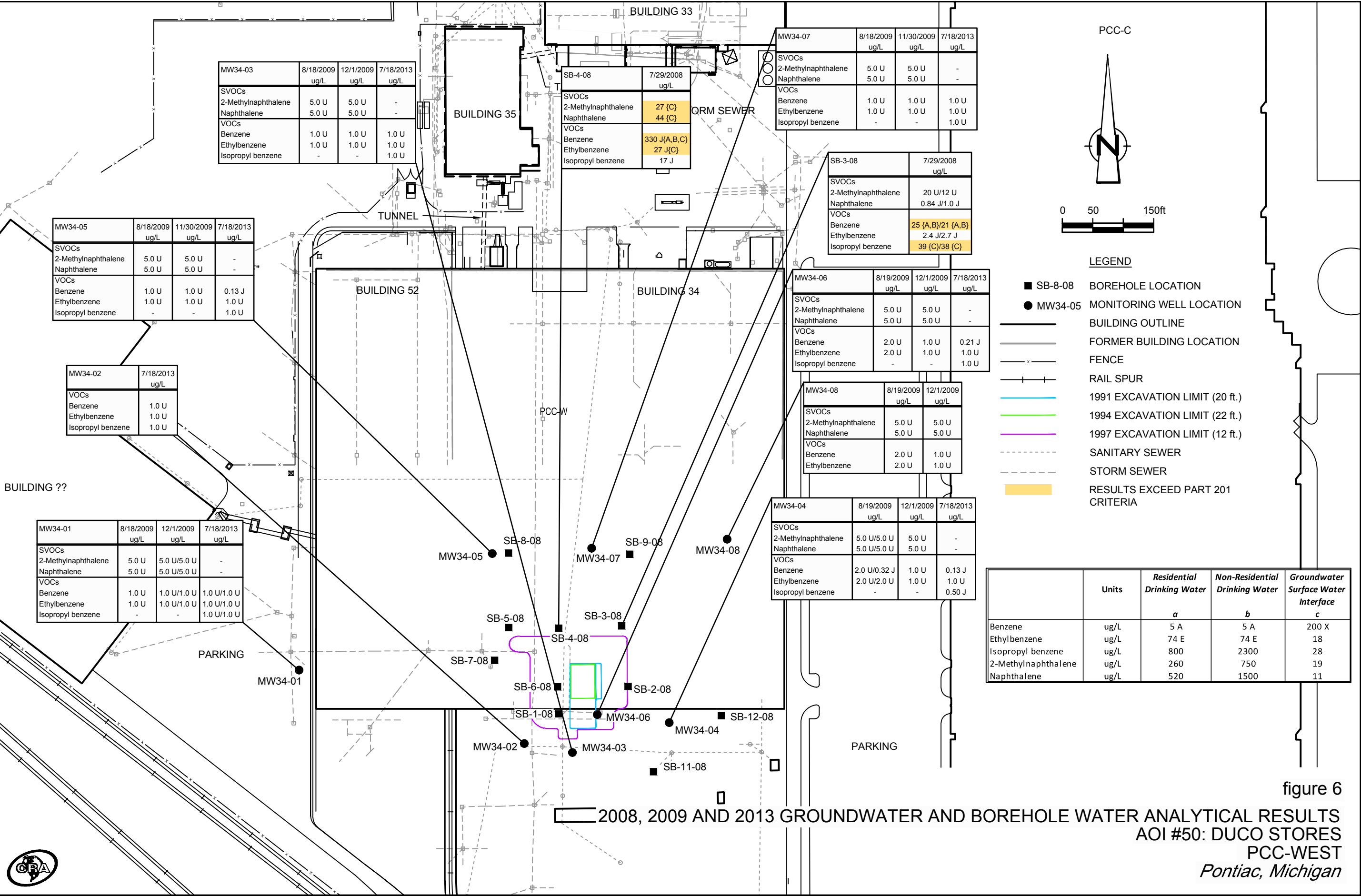


figure 5
2007 - 2012 SOIL ANALYTICAL RESULTS
AOI # 50: DUCO STORES
PCC-WEST
Pontiac, Michigan



2008, 2009 AND 2013 GROUNDWATER AND BOREHOLE WATER ANALYTICAL RESULTS
AOI #50: DUCO STORES
PCC-WEST
Pontiac, Michigan



TABLES

TABLE 1																									
SOIL ANALYTICAL RESULTS 2007-2012																									
DUCCO STORES																									
PCC-WEST																									
PONTIAC, MICHIGAN																									
Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria (1)																									
Sample Location: Sample Depth: Sample Date: Sample Type: Parameters	Drinking Water Protection	Non-Residential Drinking Water Protection	Groundwater Surface Water Interface Protection	Groundwater Contact Protection	Soil Volatilization to Indoor Air Inhalation	Non-Residential Soil Volatilization to Indoor Air Inhalation	Infinite Source Volatile Soil Inhalation	MW34-04 0-2 ft bgs 11/20/2007	MW34-04 6-8 ft bgs 11/20/2007	SB-1-08 5-7 ft bgs 07/28/2008	SB-2-08 7.5-9 ft bgs 07/28/2008	SB-3-08 8-10 ft bgs 07/28/2008	SB-3-08 10-12 ft bgs 07/28/2008	SB-4-08 8-10 ft bgs 07/28/2008	SB-4-08 10-12 ft bgs 07/28/2008	SB-5-08 15-16 ft bgs 07/28/2008	SB-6-08 7-8 ft bgs 07/28/2008	SB-7-08 10.5-12 ft bgs 07/28/2008	SB-1-12 10-12 ft BGS 07/31/2012	SB-2-12 4-6 ft BGS 07/31/2012	SB-10-12 10-12 ft BGS 07/31/2012	SB-11-12 6-8 ft BGS 07/30/2012	SB-11-12 6-8 ft BGS 07/30/2012 Duplicate	SB-12-12 6-8 ft BGS 07/30/2012	
Units	b	c	d	e	f	g	h																		
VOCs*																									
1,1,1-Trichloroethane	ug/kg	4000	4000	1800	460000 C	250000	460000	3800000	46 U	48 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	2.2 J	17000 ^{bcd}	25000 ^{bcd}	1800	44 U	42 U	43 U	41 U
1,1,2,2-Tetrachloroethane	ug/kg	170	700	1600 X	94000	4300	23000	10000	46 U	48 U	4.8 U	5.5 U	5.1 U	5.2 UJ	5.8 U	5.2 UJ	5.6 U	5.4 U	150 UJ	440 U	43 U	44 U	42 U	43 U	41 U
1,1,2-Trichloroethane	ug/kg	100	100	6600 X	420000	4600	24000	17000	46 U	48 U	4.8 UJ	5.5 U	5.1 UJ	5.2 UJ	5.8 UJ	5.2 UJ	5.6 U	5.4 U	150 U	440 U	43 U	44 U	42 U	43 U	41 U
1,1-Dichloroethane	ug/kg	18000	50000	15000	890000 C	230000	430000	2100000	46 U	48 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	0.47 J	5.4 U	470	11000	43 U	44 U	42 U	43 U	41 U
1,1-Dichloroethene	ug/kg	140	140	2600	220000	62	330	1100	46 U	48 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	2900 ^{bcdffgh}	440 U	43 U	44 U	42 U	43 U	41 U
1,2,4-Trichlorobenzene	ug/kg	4200	4200	5900 X	1100000 C	1100000 C	1100000 C	28000000	230 U	240 U	4.8 U	5.5 U	5.1 U	5.2 UJ	5.8 U	5.2 UJ	5.6 U	5.4 U	770 UJ	2200 U	220 U	220 U	210 U	210 U	210 U
1,2,4-Trimethylbenzene	ug/kg	2100	2100	570	110000 C	110000 C	110000 C	21000000	36 J	80 J	4.8 U	5.5 U	5.1 U	5.2 UJ	5.8 U	5.2 UJ	5.6 U	5.4 U	310 U	180 J	87 U	89 U	85 U	85 U	82 U
1,3,5-Trimethylbenzene	ug/kg	1800	1800	1100	94000 C	94000 C	94000 C	16000000	91 U	60 J	4.8 U	5.5 U	5.1 U	5.2 UJ	5.8 U	5.2 UJ	5.6 U	5.4 U	310 U	870 U	87 U	89 U	85 U	85 U	82 U
1,3-Dichlorobenzene	ug/kg	170	480	680	51000	26000	48000	79000	91 U	95 U	4.8 U	5.5 U	5.1 U	5.2 UJ	5.8 U	5.2 UJ	5.6 U	5.4 U	310 U	870 U	87 U	89 U	85 U	85 U	82 U
1,4-Dichlorobenzene	ug/kg	1700	1700	360	140000	19000	100000	77000	91 U	95 U	4.8 U	5.5 U	5.1 U	5.2 UJ	5.8 U	5.2 UJ	5.6 U	5.4 U	310 U	870 U	87 U	89 U	85 U	85 U	82 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/kg	260000	760000	44000	27000000 C	27000000 C	27000000 C	29000000	680 U	710 U	19 U	22 U	20 U	21 U	23 U	21 U	22 U	22 U	2300 U	6600 U	650 U	670 U	630 U	640 U	620 U
Benzene	ug/kg	100	100	4000 X	220000	1600	8400	13000	46 U	14 J	4.8 U	5.5 U	5.1 U	0.29 J	5.8 U	5.2 U	5.6 U	5.4 U	150 U	440 U	43 U	44 U	42 U	43 U	41 U
cis-1,2-Dichloroethene	ug/kg	1400	1400	12000	640000 C	22000	41000	180000	46 U	48 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	79 J	440 U	23 J	44 U	42 U	43 U	41 U
cis-1,3-Dichloropropene	ug/kg	NA	NA	NA	NA	NA	NA	NA	46 U	48 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	150 UJ	440 U	43 U	44 U	42 U	43 U	41 U
Ethylbenzene	ug/kg	1500	1500	360	140000 C	87000	140000 C	720000	46 U	18 J	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 UJ	5.6 U	5.4 U	150 U	440 U	43 U	44 U	42 U	43 U	41 U
Methyl tert butyl ether (MTBE)	ug/kg	800	800	140000 X	5900000 C	5900000 C	5900000 C	25000000	230 U	240 U	19 U	22 U	20 U	21 U	23 U	21 U	22 U	22 U	770 U	2200 U	220 U	220 U	210 U	210 U	210 U
PNAs																									
Styrene	ug/kg	2700	2700	2100 X	270000	250000	520000 C	970000	46 U	48 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 UJ	5.6 U	5.4 U	150 U	440 U	43 U	44 U	42 U	43 U	41 U
Tetrachloroethene	ug/kg	100	100	1200 X	88000 C	11000	21000	170000	46 U	48 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 UJ	5.6 U	5.4 U	150 U	440 U	1100 ^{bc}	44 U	42 U	43 U	41 U
Toluene	ug/kg	16000	16000	5400	250000 C	250000 C	250000 C	2800000	91 U	95 U	0.50 J	0.61 J	5.1 U	0.36 J	5.8 U	5.2 UJ	5.6 U	5.4 U	310 U	870 U	87 U	89 U	85 U	85 U	82 U
trans-1,2-Dichloroethene	ug/kg	2000	2000	30000 X	1400000 C	23000	43000	280000	46 U	48 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	150 U	440 U	43 U	44 U	42 U	43 U	41 U
trans-1,3-Dichloropropene	ug/kg	NA	NA	NA	NA	NA	NA	NA	46 UJ	48 UJ	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 UJ	5.6 U	5.4 U	150 UJ	440 U	43 U	44 U	42 U	43 U	41 U
Trichloroethene	ug/kg	100	100	4000 X	440000	1000	1900	11000	46 U	48 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	3300 ^{bcdffg}	4600 ^{bcdffg}	2700 ^{bcdffg}	44 U	42 U	43 U	41 U
Vinyl chloride	ug/kg	40	40	260 X	20000	270	2800	4200	36 U	38 U	4.8 U	5.5 U	5.1 U	5.2 U	5.8 U	5.2 U	5.6 U	5.4 U	120 U	350 U	35 U	36 U	34 U	34 U	33 U
Xylenes (total)	ug/kg	5600	5600	820	150000 C	150000 C	150000 C	46000000	140 U	130 J	9.6 U	11 U	10 U	10 U	12 U	10 UJ	11 U	11 U	460 U	130 J	130 U	130 U	130 U	130 U	120 U
SVOCs																									
2-Methylnaphthalene	ug/kg	57000	170000	4200	5500000	2700000	4900000	1500000	300 U	6300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U	--	--	--	--	--	--
Acenaphthene	ug/kg	300000	880000	8700	970000	190000000	350000000	810000000	300 U	6300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U	--	--	--	--	--	--
Acenaphthylene	ug/kg	5900	17000	ID	440000	1600000	3000000	2200000	300 U	6300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U	--	--	--	--	--	--
Anthracene	ug/kg	41000	41000	ID	41000	10000000000 D	10000000000 D	14000000000	300 U	6300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U	--	--	--	--	--	--
Benzo(a)anthracene	ug/kg	NLL	NLL	NLL	NLL	NLV	NLV	NLV	300 U	6300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U	--	--	--	--	--	--
Benzo(a)pyrene	ug/kg	NLL	NLL	NLL	NLL	NLV	NLV	NLV	300 U	6300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U	--	--	--	--	--	--
Benzo(b)fluoranthene	ug/kg	NLL	NLL	NLL	NLL	ID	ID	ID	300 U	6300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U	--	--	--	--	--	--
Benzo(g,h,i)perylene	ug/kg	NLL	NLL	NLL	NLL	NLV	NLV	NLV	300 U	6300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U	--	--	--	--	--	--
Benzo(k)fluoranthene	ug/kg	NLL	NLL	NLL	NLL	NLV	NLV	NLV	300 U	6300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U	--	--	--	--	--	--
Chrysene	ug/kg	NLL	NLL	NLL	NLL	ID	ID	ID	300 U	6300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U	--	--	--	--	--	--
Dibenz(a,h)anthracene	ug/kg	NLL	NLL	NLL	NLL	NLV	NLV	NLV	300 U	6300 U	280 U	290 UJ	280 U	270 U	310 U	300 U	300 U	290 U	290 U	--	--	--	--	--	--
Fluoranthene	ug/kg	730000	73000																						

TABLE 1																						
SOIL ANALYTICAL RESULTS 2007-2012																						
DUCCO STORES																						
PCC-WEST																						
PONTIAC, MICHIGAN																						
Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria (1)																						
Sample Location: Sample Depth: Sample Date: Sample Type: Parameters	Drinking Water Protection	Non-Residential Drinking Water Protection	Groundwater Surface Water Interface Protection	Groundwater Contact Protection	Soil Volatilization to Indoor Air Inhalation	Non-Residential Soil Volatilization to Indoor Air Inhalation	Infinite Source Volatile Soil Inhalation	SB-13-12 6-8 ft BGS 07/31/2012	SB-14-12 6-8 ft BGS 07/31/2012	SB-15-12 4-6 ft BGS 07/30/2012	SB-16-12 2-4 ft BGS 10/02/2012	SB-16-12 6-8 ft BGS 10/02/2012	SB-17-12 10-12 ft BGS 10/02/2012	SB-18-12 10-12 ft BGS 10/02/2012	SB-18-12 10-12 ft BGS 10/02/2012	SB-19-12 9.5-11.5 ft BGS 10/02/2012	SB-20-12 10-12 ft BGS 10/02/2012	SB-21-12 4.5-6.5 ft BGS 10/02/2012	SB-21-12 10-12 ft BGS 10/02/2012	SB-22-12 5.5-7.5 ft BGS 10/02/2012	SB-22-12 10-12 ft BGS 10/02/2012	
Units	b	c	d	e	f	g	h															
VOCs*																						
1,1,1-Trichloroethane	ug/kg	4000	4000	1800	460000 C	250000	460000	3800000	--	--	39 U	86	880	81	36 J	43	500	44 U	43	45 U	44 U	45 U
1,1,2,2-Tetrachloroethane	ug/kg	170	700	1600 X	94000	4300	23000	10000	--	--	39 U	43 U	44 U	47 U	40 U	40 U	46 U	44 U	43 U	45 U	44 U	45 U
1,1,2-Trichloroethane	ug/kg	100	100	6600 X	420000	4600	24000	17000	--	--	39 U	43 U	44 U	47 U	40 U	40 U	46 U	44 U	43 U	45 U	44 U	45 U
1,1-Dichloroethane	ug/kg	18000	50000	15000	890000 C	230000	430000	2100000	--	--	39 U	36 J	140	47 U	40 U	40 U	46 U	44 U	43 U	45 U	44 U	45 U
1,1-Dichloroethene	ug/kg	140	140	2600	220000	62	330	1100	--	--	39 U	43 U	280 ^{bcf}	47 U	40 U	40 U	46 U	44 U	43 U	45 U	44 U	45 U
1,2,4-Trichlorobenzene	ug/kg	4200	4200	5900 X	1100000 C	1100000 C	1100000 C	28000000	--	--	190 U	210 U	220 U	240 U	200 U	200 U	230 U	220 U	210 U	230 U	220 U	230 U
1,2,4-Trimethylbenzene	ug/kg	2100	2100	570	110000 C	110000 C	110000 C	21000000	84 U	85 U	200	77 J	18 J	95 U	81 U	80 U	93 U	88 U	86 U	18 J	87 U	71 J
1,3,5-Trimethylbenzene	ug/kg	1800	1800	1100	94000 C	94000 C	94000 C	16000000	84 U	85 U	74 J	85 U	89 U	95 U	81 U	80 U	93 U	88 U	86 U	90 U	87 U	21 J
1,3-Dichlorobenzene	ug/kg	170	480	680	51000	26000	48000	79000	--	--	78 U	85 U	89 U	95 U	81 U	80 U	93 U	88 U	86 U	90 U	87 U	91 U
1,4-Dichlorobenzene	ug/kg	1700	1700	360	140000	19000	100000	77000	--	--	78 U	85 U	89 U	95 U	81 U	80 U	93 U	88 U	86 U	90 U	87 U	91 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/kg	260000	760000	44000	27000000 C	27000000 C	27000000 C	29000000	--	--	580 U	640 U	670 U	710 U	610 U	600 U	690 U	660 U	640 U	680 U	650 U	680 U
Benzene	ug/kg	100	100	4000 X	220000	1600	8400	13000	42 U	42 U	39 U	43 U	44 U	47 U	40 U	40 U	46 U	44 U	43 U	45 U	44 U	45 U
cis-1,2-Dichloroethene	ug/kg	1400	1400	12000	640000 C	22000	41000	180000	--	--	39 U	43 U	44 U	47 U	40 U	40 U	46 U	44 U	43 U	45 U	44 U	45 U
cis-1,3-Dichloropropene	ug/kg	NA	NA	NA	NA	NA	NA	NA	--	--	39 U	43 U	44 U	47 U	40 U	40 U	46 U	44 U	43 U	45 U	44 U	45 U
Ethylbenzene	ug/kg	1500	1500	360	140000 C	87000	140000 C	720000	42 U	42 U	19 J	10 J	44 U	47 U	40 U	40 U	46 U	44 U	43 U	45 U	44 U	45 U
Methyl tert butyl ether (MTBE)	ug/kg	800	800	140000 X	5900000 C	5900000 C	5900000 C	25000000	210 U	210 U	190 U	210 U	220 U	240 U	200 U	200 U	230 U	220 U	210 U	230 U	220 U	230 U
PNAs																						
Styrene	ug/kg	2700	2700	2100 X	270000	250000	520000 C	970000	--	--	8.8 J	43 U	44 U	47 U	40 U	40 U	46 U	44 U	43 U	45 U	44 U	45 U
Tetrachloroethene	ug/kg	100	100	1200 X	88000 C	11000	21000	170000	--	--	39 U	43 U	23 J	47 U	40 U	40 U	35 J	44 U	950 ^{bc}	45 U	44 U	45 U
Toluene	ug/kg	16000	16000	5400	250000 C	250000 C	250000 C	2800000	84 U	85 U	18 J	85 U	25 J	95 U	81 U	80 U	93 U	88 U	86 U	90 U	87 U	91 U
trans-1,2-Dichloroethene	ug/kg	2000	2000	30000 X	1400000 C	23000	43000	280000	--	--	39 U	43 U	44 U	47 U	40 U	40 U	46 U	44 U	43 U	45 U	44 U	45 U
trans-1,3-Dichloropropene	ug/kg	NA	NA	NA	NA	NA	NA	NA	--	--	39 U	43 U	44 U	47 U	40 U	40 U	46 U	44 U	43 U	45 U	44 U	45 U
Trichloroethene	ug/kg	100	100	4000 X	440000	1000	1900	11000	--	--	39 U	71	190 ^{bc}	1000 ^{bc}	40 U	40 U	420 ^{bc}	44 U	130 ^{bc}	45 U	44 U	45 U
Vinyl chloride	ug/kg	40	40	260 X	20000	270	2800	4200	--	--	31 U	34 U	36 U	38 U	32 U	32 U	37 U	35 U	34 U	36 U	35 U	120 ^{bc}
Xylenes (total)	ug/kg	5600	5600	820	150000 C	150000 C	150000 C	46000000	130 U	130 U	78 J	59 J	53 J	140 U	120 U	120 U	140 U	130 U	130 U	140 U	130 U	140 U
SVOCs																						
2-Methylnaphthalene	ug/kg	57000	170000	4200	5500000	2700000	4900000	1500000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	ug/kg	300000	880000	8700	970000	190000000	350000000	81000000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	ug/kg	5900	17000	ID	440000	1600000	3000000	2200000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	ug/kg	41000	41000	ID	41000	1000000000 D	1000000000 D	1400000000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	ug/kg	NLL	NLL	NLL	NLL	NLV	NLV	NLV	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	ug/kg	NLL	NLL	NLL	NLL	NLV	NLV	NLV	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	ug/kg	NLL	NLL	NLL	NLL	ID	ID	ID	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	ug/kg	NLL	NLL	NLL	NLL	NLV	NLV	NLV	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	ug/kg	NLL	NLL	NLL	NLL	NLV	NLV	NLV	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	ug/kg	NLL	NLL	NLL	NLL	ID	ID	ID	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenz(a,h)anthracene	ug/kg	NLL	NLL	NLL	NLL	NLV	NLV	NLV	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	ug/kg	730000	730000	5500	730000	1000000000 D	1000000000 D	740000000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	ug/kg	390000	890000	5300	890000	580000000	1000000000 D	130000000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	ug/kg	NLL	NLL	NLL	NLL	NLV	NLV	NLV	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	ug/kg	35000	100000	730	2100000	250000	470000	300000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	ug/kg	56000	160000	2100	1100000	2800000	5100000	160000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	ug/kg	480000	480000	ID	480000	1000000000 D	1000000000 D	650000000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals*																						
Aluminum	ug/kg	1000	1000	NA	1000000000 D	NLV	NLV	NLV	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	ug/kg	4300	4300	94000 X	49000000	NLV	NLV	NLV	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	ug/kg	4600	4600	4600	2000000	NLV	NLV	NLV	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	ug/kg	30000	30000	3300	140000000	NLV	NLV	NLV	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	ug/kg	5800000	5800000	G	1000000000 D	NLV	NLV	NLV	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	ug/kg	6000	6000	NA	1000000000 D	NLV	NLV	NLV	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	ug/kg	700000	700000	G, X	ID	NLV	NLV	NLV	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	ug/kg	1000	1000	G, X	180000000	NLV	NLV	NLV	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	ug/kg	1700	1700	50 M	47000	48000	89000	52000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	ug/kg	4000	4000	400	78000000	NLV	NLV	NLV	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	ug/kg	4500	13000	100 M	20000000																	

TABLE 2

GROUNDWATER ANALYTICAL RESULTS (2008-2013)
DUCO STORES
PCC-WEST
PONTIAC, MICHIGAN

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria (1)																		
Sample Location: Sample Date: Sample Type: Parameters	Residential Drinking Water	Non-Residential Drinking Water	Groundwater Surface Water Interface	SB-3-08 07/29/2008	SB-3-08 07/29/2008 Duplicate	SB-4-08 07/29/2008	MW34-01 08/18/2009	MW34-01 12/01/2009	MW34-01 12/01/2009 Duplicate	MW34-01 07/18/2013	MW34-01 07/18/2013 Duplicate	MW34-02 07/18/2013	MW34-03 08/18/2009	MW34-03 12/01/2009	MW34-03 07/18/2013	MW34-04 08/19/2009	MW34-04 08/19/2009 Duplicate	
Units	a	b	c															
VOCs*																		
1,2,4-Trimethylbenzene	ug/L	63 E	63 E	17	1.5	0.79 J	17 U	0.41 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.05 A	0.05 A	5.7 X	1.0 U	1.0 U	17 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	
1,2-Dichloroethane	ug/L	5 A	5 A	360 X	1.0 U	1.0 U	17 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	
1,3,5-Trimethylbenzene	ug/L	72 E	72 E	45	1.0 U	0.22 J	17 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	
Benzene	ug/L	5 A	5 A	200 X	21 ^{ab}	25 ^{ab}	330 J ^{abc}	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	0.32 J	
cis-1,2-Dichloroethene	ug/L	70 A	70 A	620	1.0 UJ	1.0 UJ	17 UJ	--	--	--	1.0 U	1.0 U	1.0 U	--	--	1.0 U	--	
Ethylbenzene	ug/L	74 E	74 E	18	2.4 J	2.7 J	27 J ^c	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	
Isopropyl benzene	ug/L	800	2300	28	38 ^c	39 ^c	17 J	--	--	--	1.0 U	1.0 U	1.0 U	--	--	1.0 U	--	
Toluene	ug/L	790 E	790 E	270	0.88 J	1.1	7.4 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	
Xylenes (total)	ug/L	280 E	280 E	41	2.0	2.0	11 J	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	4.0 U	4.0 U	
SVOCs																		
2-Methylnaphthalene	ug/L	260	750	19	20 U	12 U	27 ^c	5.0 U	5.0 U	5.0 U	--	--	--	5.0 U	5.0 U	--	5.0 U	
Acenaphthene	ug/L	1300	3800	38	20 U	12 U	1.0 J	5.0 U	5.0 U	5.0 U	--	--	--	5.0 U	5.0 U	--	5.0 U	
Acenaphthylene	ug/L	52	150	ID	20 U	12 U	10 U	5.0 U	5.0 U	5.0 U	--	--	--	5.0 U	5.0 U	--	5.0 U	
Anthracene	ug/L	43 S	43 S	ID	20 U	12 U	10 U	5.0 U	5.0 U	5.0 U	--	--	--	5.0 U	5.0 U	--	5.0 U	
Benzo(a)anthracene	ug/L	2.1	8.5	ID	4.0 U	2.5 U	2.0 U	1.0 U	1.0 U	1.0 U	--	--	--	1.0 U	1.0 U	--	1.0 U	
Benzo(a)pyrene	ug/L	5 A	5 A	ID	4.0 U	2.5 U	2.0 U	1.0 U	1.0 U	1.0 U	--	--	--	1.0 U	1.0 U	--	1.0 U	
Benzo(b)fluoranthene	ug/L	1.5 S,AA	1.5 S,AA	ID	4.0 U	2.5 U	2.0 U	1.0 U	1.0 U	1.0 U	--	--	--	1.0 U	1.0 U	--	1.0 U	
Benzo(g,h,i)perylene	ug/L	1 M	1 M	NA	4.0 U	2.5 U	2.0 U	1.0 U	1.0 U	1.0 U	--	--	--	1.0 U	1.0 U	--	1.0 U	
Benzo(k)fluoranthene	ug/L	1 M	1 M	NA	4.0 U	2.5 U	2.0 U	1.0 U	1.0 U	1.0 U	--	--	--	1.0 U	1.0 U	--	1.0 U	
Chrysene	ug/L	1.6 S	1.6 S	ID	4.0 U	2.5 U	2.0 U	1.0 U	1.0 U	1.0 U	--	--	--	1.0 U	1.0 U	--	1.0 U	
Dibenz(a,h)anthracene	ug/L	2 M	2 M	ID	8.0 U	5.0 U	4.0 U	2.0 U	2.0 U	2.0 U	--	--	--	2.0 U	2.0 U	--	2.0 U	
Fluoranthene	ug/L	210 S	210 S	1.6	4.0 U	2.5 U	2.0 U	1.0 U	1.0 U	1.0 U	--	--	--	1.0 U	1.0 U	--	1.0 U	
Fluorene	ug/L	880	2000 S	12	20 U	12 U	10 U	5.0 U	5.0 U	5.0 U	--	--	--	5.0 U	5.0 U	--	5.0 U	
Indeno(1,2,3-cd)pyrene	ug/L	2 M	2 M	ID	8.0 U	5.0 U	4.0 U	2.0 U	2.0 U	2.0 U	--	--	--	2.0 U	2.0 U	--	2.0 U	
Naphthalene	ug/L	520	1500	11	1.0 J	0.84 J	44 ^c	5.0 U	5.0 U	5.0 U	--	--	--	5.0 U	5.0 U	--	5.0 U	
Phenanthrene	ug/L	52	150	2 M	8.0 U	5.0 U	1.8 J	2.0 U	2.0 U	2.0 U	--	--	--	2.0 U	2.0 U	--	2.0 U	
Pyrene	ug/L	140 S	140 S	ID	20 U	12 U	10 U	5.0 U	5.0 U	5.0 U	--	--	--	5.0 U	5.0 U	--	5.0 U	
Metals																		
Lead	ug/L	4 L	4 L	G,X	--	--	--	3.0 U	3.0 U	3.0 U	--	--	--	3.0 U	3.0 U	--	3.0 U	
Petroleum Hydrocarbons																		
Ethylene glycol					10000 U	10000 U	10000 U	--	--	--	--	--	--	--	--	--	--	
Propylene glycol	ug/L	NA	NA	NA	10000 U	10000 U	10000 U	--	--	--	--	--	--	--	--	--	--	

Notes:

NA - Criteria not available

ID - Insufficient data available to calculate risk based criterion

U - Not present at or above the associated value.

J - Indicates an estimated value.

UB - The analyte / compound was detected in the associated blank.

(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.

-- Not analyzed

ug/L - microgram per liter

* - Not all VOCs shown because results were either ND or not analyzed (--)

TABLE 2

GROUNDWATER ANALYTICAL RESULTS (2008-2013)
DUCO STORES
PCC-WEST
PONTIAC, MICHIGAN

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria (1)																	
Sample Location: Sample Date: Sample Type: Parameters	Residential Drinking Water	Non-Residential Drinking Water	Groundwater Surface Water Interface	MW34-04 12/01/2009	MW34-04 07/18/2013	MW34-05 08/18/2009	MW34-05 11/30/2009	MW34-05 07/18/2013	MW34-06 08/19/2009	MW34-06 12/01/2009	MW34-06 07/18/2013	MW34-06 08/18/2009	MW34-07 11/30/2009	MW34-07 07/18/2013	MW34-07 08/19/2009	MW34-08 12/01/2009	MW34-08 12/01/2009
Units	a	b	c														
VOCs*																	
1,2,4-Trimethylbenzene	ug/L	63 E	63 E	17	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.05 A	0.05 A	5.7 X	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
1,2-Dichloroethane	ug/L	5 A	5 A	360 X	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
1,3,5-Trimethylbenzene	ug/L	72 E	72 E	45	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
Benzene	ug/L	5 A	5 A	200 X	1.0 U	0.13 J	1.0 U	1.0 U	0.13 J	2.0 U	1.0 U	0.21 J	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	70 A	70 A	620	--	1.0 U	--	--	1.0 U	--	--	1.3	--	--	1.0 U	--	--
Ethylbenzene	ug/L	74 E	74 E	18	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
Isopropyl benzene	ug/L	800	2300	28	--	0.50 J	--	--	1.0 U	--	--	1.0 U	--	--	1.0 U	--	--
Toluene	ug/L	790 E	790 E	270	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
Xylenes (total)	ug/L	280 E	280 E	41	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	4.0 U	2.0 U
SVOCs																	
2-Methylnaphthalene	ug/L	260	750	19	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U
Acenaphthene	ug/L	1300	3800	38	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U
Acenaphthylene	ug/L	52	150	ID	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U
Anthracene	ug/L	43 S	43 S	ID	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U
Benzo(a)anthracene	ug/L	2.1	8.5	ID	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U
Benzo(a)pyrene	ug/L	5 A	5 A	ID	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U
Benzo(b)fluoranthene	ug/L	1.5 S,AA	1.5 S,AA	ID	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U
Benzo(g,h,i)perylene	ug/L	1 M	1 M	NA	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U
Benzo(k)fluoranthene	ug/L	1 M	1 M	NA	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U
Chrysene	ug/L	1.6 S	1.6 S	ID	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U
Dibenz(a,h)anthracene	ug/L	2 M	2 M	ID	2.0 U	--	2.0 U	2.0 U	--	2.0 U	2.0 U	--	2.0 U	2.0 U	--	2.0 U	2.0 U
Fluoranthene	ug/L	210 S	210 S	1.6	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U
Fluorene	ug/L	880	2000 S	12	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U
Indeno(1,2,3-cd)pyrene	ug/L	2 M	2 M	ID	2.0 U	--	2.0 U	2.0 U	--	2.0 U	2.0 U	--	2.0 U	2.0 U	--	2.0 U	2.0 U
Naphthalene	ug/L	520	1500	11	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U
Phenanthrene	ug/L	52	150	2 M	2.0 U	--	2.0 U	2.0 U	--	2.0 U	2.0 U	--	2.0 U	2.0 U	--	2.0 U	2.0 U
Pyrene	ug/L	140 S	140 S	ID	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U
Metals																	
Lead	ug/L	4 L	4 L	G,X	3.0 U	--	3.0 U	3.0 U	--	3.0 U	3.0 U	--	3.0 U	3.0 U	--	3.0 U	3.0 U
Petroleum Hydrocarbons																	
Ethylene glycol					--	--	--	--	--	--	--	--	--	--	--	--	--
Propylene glycol	ug/L	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
NA - Criteria not available
ID - Insufficient data available to calculate risk based criterion
U - Not present at or above the associated value.
J - Indicates an estimated value.
UB - The analyte / compound was detected in the associated blank.
(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.
-- Not analyzed
ug/L - microgram per liter
* - Not all VOCs shown because results were either ND or not analyzed (--)

ATTACHMENT A
SOIL BORING LOGS



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: BUILDING 33 IM INVESTIGATION

HOLE DESIGNATION: SB-1-08

PROJECT NUMBER: 7097-08

DATE COMPLETED: July 28, 2008

CLIENT: ENCORE

DRILLING METHOD: GEOPROBE

LOCATION: PONTIAC, MI

FIELD PERSONNEL: E. VARNAS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	
0	ASPHALT	0.30						
2	GW-GRAVELLY SANDS (aggregate base for asphalt), fine gravels, fine grained sands, poorly graded, gray, dry	1.50						
4	SP-SANDS, fine grained, poorly graded, medium brown, moist, clean fill			1GP		70		
6	- trace silts at 3.5ft BGS							
8	- wet at 7.0ft BGS							
10	END OF BOREHOLE @ 10.0ft BGS	10.00						
12								
14								
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097.GPJ CRA_CORP.GDT 8/7/08



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: BUILDING 33 IM INVESTIGATION

HOLE DESIGNATION: SB-2-08

PROJECT NUMBER: 7097-08

DATE COMPLETED: July 28, 2008

CLIENT: ENCORE

DRILLING METHOD: GEOPROBE

LOCATION: PONTIAC, MI

FIELD PERSONNEL: E. VARNAS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	
0.50	CONCRETE	0.50						
0.70	GP/SP-GRAVELLY SAND BASE (aggregate base)	0.70						
2	CL-SANDY CLAYS, fine grained, low plasticity, stiff, medium to dark brown, dry			1GP		100		
4	- moist at 1.5ft BGS							
	- trace fine gravels, trace fine sands at 2.0ft BGS							
6		6.60						
	CL-SILTY CLAYS, trace fine sands, low plasticity, stiff, dark brown, moist	7.40		2GP		100		
8	SP-SANDS, trace silts, fine to medium grained, poorly graded, dark brown, very moist			7.5-9'-002				
10	- 0.2' with silts, very faint odor at 8.4ft BGS							
	- wet at 9.5ft BGS							
	- very fine to fine grained at 10.5ft BGS							
12	CL-SILTY CLAYS, low plasticity, firm, gray to dark brown, very moist	11.80		3GP		80		
14	- moist at 12.5ft BGS							
15.00	END OF BOREHOLE @ 15.0ft BGS	15.00						
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097.GPJ CRA CORP.GDT 8/7/08



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: BUILDING 33 IM INVESTIGATION

HOLE DESIGNATION: SB-3-08

PROJECT NUMBER: 7097-08

DATE COMPLETED: July 28, 2008

CLIENT: ENCORE

DRILLING METHOD: GEOPROBE

LOCATION: PONTIAC, MI

FIELD PERSONNEL: E. VARNAS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	N' VALUE	
2	CONCRETE	0.50		1GP		60		
4	SC-CLAYEY SANDS, trace fine gravels, fine grained, poorly graded, medium brown, moist	4.40						
6	CL-SILTY CLAYS, trace fine sands, low plasticity, firm, medium brown, moist	6.00		2GP		90		
8	SP-SANDS, trace silts, fine grained, poorly graded, medium brown, moist							
10	- 0.2' with silts, almost clayey sands at 7.0ft BGS							
12								
14	- fine with some medium grained at 12.2ft BGS							
16	- grayish brown, wet, strong odor at 12.5ft BGS							
18	- trace silts, very fine to fine grained, gray at 12.8ft BGS							
20	- with silts, black and gray banding at 14.5ft BGS	15.00						
22	END OF BOREHOLE @ 15.0ft BGS							
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097.GPJ CRA CORP.GDT 8/7/08



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: BUILDING 33 IM INVESTIGATION

HOLE DESIGNATION: SB-4-08

PROJECT NUMBER: 7097-08

DATE COMPLETED: July 28, 2008

CLIENT: ENCORE

DRILLING METHOD: GEOPROBE

LOCATION: PONTIAC, MI

FIELD PERSONNEL: E. VARNAS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	
2	CONCRETE	0.50		1GP		70		
4	CL-SANDY CLAYS, fine grained, low plasticity, firm, medium brown, moist							
6	- 0.2' black at 4.6ft BGS			2GP		70		
8								
10	SP-SANDS, trace silts, fine to medium grained, poorly graded, brown, very moist	9.50			8-10' -005			
12	- wet, odor at 12.0ft BGS				10-12' -006			
14	CL-SILTY CLAYS, trace fine sands, low plasticity, firm, gray, wet	12.60		3GP		100		
16	SP-SANDS, medium grained, poorly graded, gray, strong odor	13.60						
18	- trace fine gravels at 14.0ft BGS	15.00						
20	END OF BOREHOLE @ 15.0ft BGS							
22	NOTE: 14-14.5' INTERVAL TESTED POSITIVE FOR PRODUCT USING SUDAN IV JAR TEST							
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097.GPJ CRA_CORP.GDT 8/7/08



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: BUILDING 33 IM INVESTIGATION

HOLE DESIGNATION: SB-5-08

PROJECT NUMBER: 7097-08

DATE COMPLETED: July 28, 2008

CLIENT: ENCORE

DRILLING METHOD: GEOPROBE

LOCATION: PONTIAC, MI

FIELD PERSONNEL: E. VARNAS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	
2	CONCRETE (3/4" rebar at base of concrete)	0.70	 6-1/4" BOREHOLE BACKFILLED WITH SOIL CUTTINGS	1GP		50		
4	SC-CLAYEY SANDS, fine grained, poorly graded, brown, moist			2GP		20		
6				3GP		40		
8	CL-SILTY CLAYS, trace fine sands, low plasticity, firm, brown and gray, moist	11.00		4GP		60		
10								
12								
14								
16	- gray at 15.0ft BGS							
18	SP-SANDS, fine to medium grained, poorly graded, gray, wet	16.40						
20	- brown at 18.5ft BGS - with silts at 18.8ft BGS							
22	END OF BOREHOLE @ 20.0ft BGS	20.00						
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097.GPJ CRA_CORP.GDT 8/7/08



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: BUILDING 33 IM INVESTIGATION

HOLE DESIGNATION: SB-6-08

PROJECT NUMBER: 7097-08

DATE COMPLETED: July 28, 2008

CLIENT: ENCORE

DRILLING METHOD: GEOPROBE

LOCATION: PONTIAC, MI

FIELD PERSONNEL: E. VARNAS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	
2	CONCRETE	0.50	 6-1/4" BOREHOLE BACKFILLED WITH SOIL CUTTINGS	1GP		60		
4	SP-SANDS, trace silts, fine grained, poorly graded, brown, moist - with silts at 1.5ft BGS							
6	- trace fine gravels at 5.0ft BGS							
8	- wet at 8.4ft BGS			2GP 7-8' -008		100		
10	END OF BOREHOLE @ 10.0ft BGS	10.00						
12								
14								
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097.GPJ CRA_CORP.GDT 8/7/08



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: BUILDING 33 IM INVESTIGATION

HOLE DESIGNATION: SB-7-08

PROJECT NUMBER: 7097-08

DATE COMPLETED: July 28, 2008

CLIENT: ENCORE

DRILLING METHOD: GEOPROBE

LOCATION: PONTIAC, MI

FIELD PERSONNEL: E. VARNAS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	
2	CONCRETE	0.50		1GP		60		
4	SP-SANDS, trace silts, fine grained, poorly graded, brown, moist							
6	- trace fine gravels at 1.0ft BGS							
8	- dark brown at 7.5ft BGS			2GP		30		
10	- gray/brown at 10.5ft BGS							
12	- fine grained, with some medium grained at 11.5ft BGS							
14	- wet at 12.5ft BGS							
14	CL-SILTY CLAYS, trace fine grained sands, low plasticity, firm, gray, wet	13.20						
16	- moist at 14.2ft BGS							
16	END OF BOREHOLE @ 15.0ft BGS	15.00						
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097.GPJ CRA CORP.GDT 8/7/08



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: BUILDING 33 IM INVESTIGATION

HOLE DESIGNATION: SB-8-08

PROJECT NUMBER: 7097-08

DATE COMPLETED: July 30, 2008

CLIENT: ENCORE

DRILLING METHOD: GEOPROBE

LOCATION: PONTIAC, MI

FIELD PERSONNEL: E. VARNAS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	N' VALUE	PID (ppm)
	CONCRETE	0.80						
2	CL-SILTY CLAYS, with fine gravels, trace fine sands, low plasticity, firm, medium brown, moist	1.80						1.1
4	SP-SANDS, with silts, with fine gravels, fine to medium grained, poorly graded, brown, moist			1GP		50		0.4
6	CL-SILTY CLAYS, trace fine sands, low plasticity, firm, gray, moist	4.50						
8	SC-CLAYEY SANDS, trace fine gravels, fine to medium grained, poorly graded, brown, moist	6.50						0.0
10	CL-SILTY CLAYS, trace fine sands, low plasticity, firm, gray, moist - more like SANDY CLAYS, brown at 9.2ft BGS	7.20		2GP		70		0.0
12	- wet at 10.3ft BGS							
14	GP-GRAVELLY SANDS, wet	10.50						0.0
16	CL-SILTY CLAYS, trace fine sands, low plasticity, firm, gray, wet - moist at 11.8ft BGS	11.50		3GP		30		0.0
18								
20								
22								
24								
26								
28								
30								
32								
34								
	END OF BOREHOLE @ 15.0ft BGS	15.00						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097.GPJ CRA CORP.GDT 8/7/08



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: BUILDING 33 IM INVESTIGATION

HOLE DESIGNATION: SB-9-08

PROJECT NUMBER: 7097-08

DATE COMPLETED: July 29, 2008

CLIENT: ENCORE

DRILLING METHOD: GEOPROBE

LOCATION: PONTIAC, MI

FIELD PERSONNEL: N. SHANKS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	N' VALUE	PID (ppm)
2	CONCRETE	0.50		1GP		60		0.0
4	SC-CLAYEY SANDS, trace fine gravels, compact, fine to medium grained, poorly graded, tan, moist	4.00						0.0
6	CL-SILTY CLAYS, trace fine grained sands, firm, low plasticity, brown, moist			2GP		70		0.0
8	- 2" sand lens at 7.5ft BGS							0.0
10	SP-SANDS, trace silts, compact, fine to medium grained, poorly graded, brown, moist	9.00		3GP		80		0.0
12	CL-CLAYS, trace silts and fine grained sands, firm, low plasticity, gray, moist	12.00						0.0
14				4GP		100		0.0
16	- with silts at 15.0ft BGS							0.0
18								0.0
20	END OF BOREHOLE @ 20.0ft BGS	20.00						0.0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097.GPJ CRA CORP.GDT 8/7/08



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: BUILDING 33 IM INVESTIGATION

HOLE DESIGNATION: SB-10-08

PROJECT NUMBER: 7097-08

DATE COMPLETED: July 31, 2008

CLIENT: ENCORE

DRILLING METHOD: GEOPROBE

LOCATION: PONTIAC, MI

FIELD PERSONNEL: E. VARNAS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
2	SP-SANDS, with silts, trace fine to medium gravels, fine grained, poorly graded, medium brown, moist							0.0
4	CL-CLAYS, trace fine sands, trace fine gravels, low plasticity, firm, medium brown, moist - stiff at 4.0ft BGS	2.50	6-1/4" BOREHOLE	1GP				
6			BACKFILLED WITH SOIL CUTTINGS					0.0
8	- brownish gray at 8.5ft BGS			2GP	7.5-9.5'	100		
10	- 0.4' SP-SANDS seam, wet at 9.8ft BGS - with sands at 10.2ft BGS				-017 -018			
12				3GP		60		0.0
14		15.00						
16	END OF BOREHOLE @ 15.0ft BGS							
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097.GPJ CRA CORP.GDT 8/7/08



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: BUILDING 33 IM INVESTIGATION

HOLE DESIGNATION: SB-11-08

PROJECT NUMBER: 7097-08

DATE COMPLETED: July 30, 2008

CLIENT: ENCORE

DRILLING METHOD: GEOPROBE

LOCATION: PONTIAC, MI

FIELD PERSONNEL: E. VARNAS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
2	CONCRETE (bluish/gray)	1.00		1GP		40		0.0
4	SM-SILTY SANDS, trace fine gravels, fine to medium grained, poorly graded, brown, moist							0.0
6	- medium grained, trace coarse grained at 3.5ft BGS							0.8
8	CL-SILTY CLAYS, trace fine grained sands, low plasticity, firm, gray, moist	6.00						0.8
10	- 0.5' with fine to medium gravels at 6.5ft BGS - 0.4' crushed concrete at 7.8ft BGS	8.60						0.8
12	GW-GRAVELLY SANDS, medium to coarse grained, well graded, dark brown, wet	10.00						
14	- REFUSAL, bent sampler tube at 10.0ft BGS							
16	END OF BOREHOLE @ 10.0ft BGS							
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097.GPJ CRA CORP.GDT 8/7/08



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: BUILDING 33 IM INVESTIGATION

HOLE DESIGNATION: SB-12-08

PROJECT NUMBER: 7097-08

DATE COMPLETED: July 30, 2008

CLIENT: ENCORE

DRILLING METHOD: GEOPROBE

LOCATION: PONTIAC, MI

FIELD PERSONNEL: E. VARNAS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
2	CONCRETE	1.20	 6-1/4" BOREHOLE BACKFILLED WITH SOIL CUTTINGS	1GP		50		2.2
4	CL-SANDY CLAYS, trace fine gravels, low plasticity, firm, brown, moist							3.0
6	SP-SANDS, medium to coarse grained, poorly graded, grayish brown, moist	6.00						3.5
8	CL-SILTY CLAYS, trace fine gravels, trace red brick, trace fine sands, low plasticity, stiff, moist - gray at 9.0ft BGS	7.00		2GP		70		1.6
10								2.5
12	- 1' SANDY CLAYS at 11.0ft BGS							3.2
14	- very moist to wet at 13.0ft BGS - trace sands, moist at 13.5ft BGS							
16	END OF BOREHOLE @ 15.0ft BGS	15.00						
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097.GPJ CRA CORP.GDT 8/7/08



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: RACER - PCC WEST

HOLE DESIGNATION: SB-1-12

PROJECT NUMBER: 007097

DATE COMPLETED: July 31, 2012

CLIENT: RACER

DRILLING METHOD: GEOPROBE

LOCATION: PONTIAC, MI

FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	CONCRETE							
2	SP/GP-SAND AND GRAVEL (FILL), fine to coarse sand, fine to coarse gravel, poorly graded, compact, brown, moist	1.50 2.00 2.50		1GP		85		0.3
4	SC-CLAYEY SAND (FILL), trace gravel, fine to medium sand, fine to coarse gravel, poorly graded, compact, brown, moist							0.1
6	CL-SANDY CLAY (FILL), with silt, trace gravel, fine to coarse sand, fine to coarse gravel, low plasticity, stiff, brown, moist - trace asphalt debris at 3.5ft BGS - no asphalt debris at 4.0ft BGS			2GP		65		1.0
8								0.5
10	SC-CLAYEY SAND (FILL), trace gravel, fine to medium sand, fine to coarse gravel, poorly graded, compact, brown, moist	8.50 9.00		3GP		50		0.4
12	CL-SILTY CLAY, trace fine sand, low plasticity, firm, gray, moist							0.2
12	END OF BOREHOLE @ 12.0ft BGS	12.00						
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OVERBURDEN LOG 7097-PCC WEST.GPJ CRA_CORP.GDT 11/19/12

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS





STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: RACER - PCC WEST

HOLE DESIGNATION: SB-2-12

PROJECT NUMBER: 007097

DATE COMPLETED: July 31, 2012

CLIENT: RACER

DRILLING METHOD: GEOPROBE

LOCATION: PONTIAC, MI

FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	CONCRETE							0.9
2		2.00		1GP		90		
	SP/GP-SAND AND GRAVEL (FILL), fine to coarse sand, fine to coarse gravel, moderately graded, loose to compact, brown, moist	2.50						2.5
4		3.50						
	CL-SILTY CLAY (FILL), with sand, trace gravel, fine to medium sand, fine gravel, low plasticity, stiff, brown, moist							0.7
6		6.00				70		
	SP-SAND (FILL), trace silt, fine to medium grained, poorly graded, compact, brown, moist	7.00						0.2
8		8.00						
	SC-CLAYEY SAND (FILL), trace gravel, fine to medium sand, fine to coarse gravel, poorly graded, loose to compact, brown, wet							
10								
	CL-SILTY CLAY, trace fine sand, low plasticity, stiff, gray, moist							
12								
	- very moist at 7.5ft BGS							
14								
	END OF BOREHOLE @ 8.0ft BGS							
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097-PCC WEST.GPJ CRA_CORP.GDT 11/19/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: RACER - PCC WEST

HOLE DESIGNATION: SB-3-12

PROJECT NUMBER: 007097

DATE COMPLETED: July 30, 2012

CLIENT: RACER

DRILLING METHOD: GEOPROBE

LOCATION: PONTIAC, MI

FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	CONCRETE							1.5
2	CL-CLAY (FILL), with sand, trace gravel, fine sand, fine to coarse gravel, low plasticity, stiff, brown, moist	1.50 2.00		1GP		70		1.7
4	SP-SAND (FILL), trace silt and gravel, fine sand, fine gravel, poorly graded, compact, brown, moist							0.2
6	- 2-1/2" silty clay lens, with fine to medium sand at 6.7ft BGS	6.90		2GP		80		0.1
8	SC-CLAYEY SAND (FILL), trace gravel, fine to medium sand, fine to coarse gravel, poorly graded, loose to compact, brown, wet	8.00						0.1
10	CL-SILTY CLAY, trace fine sand, low plasticity, soft, gray, moist			3GP		90		0.2
12	- firm at 12.0ft BGS							0.1
14				4GP		100		0.1
16	END OF BOREHOLE @ 16.0ft BGS	16.00						
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097-PCC WEST.GPJ CRA_CORP.GDT 11/19/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: RACER - PCC WEST

PROJECT NUMBER: 007097

CLIENT: RACER

LOCATION: PONTIAC, MI

HOLE DESIGNATION: SB-4-12

DATE COMPLETED: July 30, 2012

DRILLING METHOD: GEOPROBE

FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	ASPHALT	0.40						
2	SP-GRAVELLY SAND (FILL), fine sand, fine to coarse gravel, poorly graded, compact, brown, moist - with silt, trace fine gravel at 2.8ft BGS			1GP		75		1.8
4	SC-CLAYEY SAND (FILL), trace gravel, fine to medium sand, fine to coarse gravel, loose to compact, brown	4.00						0.7
6	SP-SAND (FILL), trace silt and gravel, fine to medium sand, fine gravel, poorly graded, compact, brown, wet	6.00		4-6'-004 2GP		75		0.1
8	CH-SILTY CLAY, trace fine sand, low plasticity, soft, gray, moist - firm at 7.5ft BGS	7.00						0.0
10								0.0
12	END OF BOREHOLE @ 12.0ft BGS	12.00		10-12'-003 3GP		85		0.0
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097-PCC WEST.GPJ CRA_CORP.GDT 11/19/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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PROJECT NAME: RACER - PCC WEST

HOLE DESIGNATION: SB-5-12

PROJECT NUMBER: 007097

DATE COMPLETED: July 31, 2012

CLIENT: RACER

DRILLING METHOD: GEOPROBE

LOCATION: PONTIAC, MI

FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	CONCRETE							
2	SP/GP-SAND AND GRAVEL (FILL), trace concrete debris, fine to medium sand, fine to coarse gravel, poorly graded, compact, brown, moist	1.25		1GP		70		0.9
4	CL-SANDY CLAY (FILL), trace gravel, fine to medium sand, fine to coarse gravel, low plasticity, stiff, brown, moist - mottled, trace staining at 3.25ft BGS - with silt, not mottled, no staining at 3.5ft BGS - no silt, firm at 4.0ft BGS - soft at 7.0ft BGS	3.00		2-4' -016				9.9
6								
8		7.85		2GP 5.5-7.5' -017		65		0.2
10	SP/GP-SAND AND GRAVEL (FILL), trace concrete debris, fine to medium sand, fine to coarse gravel, poorly graded, compact, brown, wet	9.00 9.25						0.1
12	SP-SAND, with silt, fine to medium grained, poorly graded, compact, gray, wet			3GP		75		0.1
14	CL-SILTY CLAY, trace fine sand, low plasticity, stiff, gray, very moist - moist at 10.0ft BGS	12.00						0.0
16	END OF BOREHOLE @ 12.0ft BGS							
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097-PCC WEST.GPJ CRA_CORP.GDT 11/19/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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PROJECT NAME: RACER - PCC WEST
PROJECT NUMBER: 007097
CLIENT: RACER
LOCATION: PONTIAC, MI

HOLE DESIGNATION: SB-6-12
DATE COMPLETED: July 31, 2012
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	CONCRETE							
2	GP-GRAVEL (FILL), coarse grained, compact, gray, moist	1.50 2.00		1GP		75		0.1
4	SC-CLAYEY SAND (FILL), trace gravel, fine to medium sand, fine gravel, poorly graded, compact, brown, moist							0.1
6				2GP	50			0.0
8								0.0
10				3GP 9-11' -014	60			0.0
12	CL-SILTY CLAY, trace sand and gravel, fine sand, fine to coarse gravel, low plasticity, firm, brown, moist	11.00 11.50 12.00						0.0
14	SM-SILTY SAND, fine grained, compact, brown, wet							
	END OF BOREHOLE @ 12.0ft BGS							
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097-PCC WEST.GPJ CRA_CORP.GDT 11/19/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: RACER - PCC WEST

HOLE DESIGNATION: SB-7-12

PROJECT NUMBER: 007097

DATE COMPLETED: July 31, 2012

CLIENT: RACER

DRILLING METHOD: GEOPROBE

LOCATION: PONTIAC, MI

FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	CONCRETE	0.50						
2	SP-SAND (FILL), trace silt and gravel, fine to coarse sand, fine to coarse gravel, poorly graded, loose to compact, brown, moist			1GP		70		0.1
4								0.1
6				2GP		70		0.1
8								0.1
10				3GP		65		0.0
12	SP-SAND, with silt, trace gravel, fine to medium sand, fine to coarse gravel, poorly graded, loose to compact, brown, moist - wet at 12.0ft BGS	11.50		10-12' -020				0.1
14				4GP		60		0.0
16	END OF BOREHOLE @ 16.0ft BGS	16.00						0.0
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097-PCC WEST.GPJ CRA_CORP.GDT 11/19/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: RACER - PCC WEST
PROJECT NUMBER: 007097
CLIENT: RACER
LOCATION: PONTIAC, MI

HOLE DESIGNATION: SB-8-12
DATE COMPLETED: July 30, 2012
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	CONCRETE							2.8
2	SP-SAND (FILL), trace silt and gravel, fine sand, fine to coarse gravel, poorly graded, compact, brown, moist	1.50		1GP		85		2.9
4	- with silt at 4.8ft BGS							0.7
6				2GP		60		0.2
8								0.1
10								0.1
12	- wet at 11.5ft BGS	11.85		3GP		45		0.1
14	CL-SILTY CLAY, trace sand and gravel, fine to medium sand, fine gravel, low plasticity, firm, brown, moist	12.00		9.5-11.5"				
16	END OF BOREHOLE @ 12.0ft BGS							
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097-PCC WEST.GPJ CRA_CORP.GDT 11/19/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: RACER - PCC WEST
PROJECT NUMBER: 007097
CLIENT: RACER
LOCATION: PONTIAC, MI

HOLE DESIGNATION: SB-9-12
DATE COMPLETED: July 30, 2012
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	ASPHALT							
2	SP-SAND (FILL), with gravel, fine sand, fine to coarse gravel, poorly graded, compact, brown, moist - trace silt and gravel at 1.2ft BGS	0.65		1GP		75		1.5
4								0.0
6								0.1
8	SC-CLAYEY SAND (FILL), trace gravel, fine to medium sand, fine to coarse gravel, loose to compact, brown, wet	7.50 8.00		2GP 5.5-7.5' -005	55			0.1
10	SP-SAND (FILL), trace silt and gravel, fine to medium sand, fine gravel, poorly graded, compact, brown, wet	9.50		3GP 10-12' -006	80			0.1
12	CL-SILTY CLAY, trace fine sand, low plasticity, firm, gray, moist END OF BOREHOLE @ 12.0ft BGS	12.00						
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097-PCC WEST.GPJ CRA_CORP.GDT 11/19/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: RACER - PCC WEST
PROJECT NUMBER: 007097
CLIENT: RACER
LOCATION: PONTIAC, MI

HOLE DESIGNATION: SB-10-12
DATE COMPLETED: July 31, 2012
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	CONCRETE	0.50 0.70						
2	SP/GP-SAND AND GRAVEL (FILL), fine to medium sand, fine to coarse gravel, poorly graded, compact, brown, moist			1GP		80		0.0
4	CL-SANDY CLAY (FILL), with silt, trace gravel, fine to medium sand, fine to coarse gravel, low plasticity, stiff, brown, moist							0.0
6		6.00		2GP		90		0.0
8	SP-SAND (FILL), trace silt and gravel, fine to medium sand, fine to coarse gravel, poorly graded, compact, brown, moist - with clay at 6.5ft BGS - fine to coarse sand at 7.5ft BGS							0.0
10				3GP		65		0.0
12	CL-SILTY CLAY, trace fine sand, low plasticity, firm, gray, moist	10.75		10-12 -021				0.0
12	END OF BOREHOLE @ 12.0ft BGS	12.00						
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097-PCC WEST.GPJ CRA_CORP.GDT 11/19/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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PROJECT NAME: RACER - PCC WEST
PROJECT NUMBER: 007097
CLIENT: RACER
LOCATION: PONTIAC, MI

HOLE DESIGNATION: SB-16-12
DATE COMPLETED: October 2, 2012
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: M. CORAM

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	CONCRETE	0.60						
2	SP/GP-SAND AND GRAVEL, trace concrete, medium to fine grained, poorly graded, brown, moist							0.6
	- staining at 3.3ft BGS	3.00		1GP 2-4' -026				
4	CL-CLAY, trace gravel, medium to fine grained, stiff, moist							0.9
6								0.5
8	SP/GP-SAND AND GRAVEL, coarse debris, gravel, brown, wet	8.00		6-8' -027 2GP				0.1
10	END OF BOREHOLE @ 10.0ft BGS	10.00						
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097-PCC WEST.GPJ CRA_CORP.GDT 11/19/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: RACER - PCC WEST
PROJECT NUMBER: 007097
CLIENT: RACER
LOCATION: PONTIAC, MI

HOLE DESIGNATION: SB-17-12
DATE COMPLETED: October 2, 2012
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: M. CORAM

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
2	CONCRETE	0.83		1GP				0.1
4	SC-CLAYEY SAND, trace gravel, medium to fine grained, fine gravel, poorly graded, brown, moist		BACKFILLED WITH BENTONITE CHIPS					
6			2-1/4" BOREHOLE	2GP				0.1
8								
10								
12	SP-SAND, medium to fine grained, gray, moist	12.00						
14	CL-CLAY, moderate plasticity, gray	13.00		3GP				0.2
16	END OF BOREHOLE @ 15.0ft BGS	15.00						
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097-PCC WEST.GPJ CRA_CORP.GDT 11/19/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: RACER - PCC WEST

HOLE DESIGNATION: SB-18-12

PROJECT NUMBER: 007097

DATE COMPLETED: October 2, 2012

CLIENT: RACER

DRILLING METHOD: GEOPROBE

LOCATION: PONTIAC, MI

FIELD PERSONNEL: M. CORAM

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	CONCRETE	0.50						
2	SP-SAND, trace silt, trace gravel, medium to fine grained, brown, moist			1GP				0.6
4								0.5
6								0.5
8				2GP				0.6
10								0.5
12								
14								
16	END OF BOREHOLE @ 15.0ft BGS	15.00						
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097-PCC WEST.GPJ CRA_CORP.GDT 11/19/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: RACER - PCC WEST
PROJECT NUMBER: 007097
CLIENT: RACER
LOCATION: PONTIAC, MI

HOLE DESIGNATION: SB-19-12
DATE COMPLETED: October 2, 2012
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: M. CORAM

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	CONCRETE							1.5
2	SP-SAND, trace silt, trace gravel, medium to fine grained, brown, moist	1.50		1GP				1.2
4	CI-CLAY, trace sand, gravel, firm, moderate plasticity	3.50						0.7
6	SP-SAND, trace silt, trace gravel, medium to fine grained, brown, moist	4.00						0.6
8				2GP				0.5
10								0.2
12	CL-SILTY CLAY, trace silt, trace gravel, medium to fine grained, moderate plasticity, firm, gray, moist	11.50		3GP				0.1
14								
16	END OF BOREHOLE @ 15.0ft BGS	15.00						
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097-PCC WEST.GPJ CRA_CORP.GDT 11/19/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: RACER - PCC WEST
PROJECT NUMBER: 007097
CLIENT: RACER
LOCATION: PONTIAC, MI

HOLE DESIGNATION: SB-20-12
DATE COMPLETED: October 2, 2012
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: M. CORAM

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	CONCRETE							
2	CL-CLAY, with sand, trace gravel, medium to fine grained, low plasticity, stiff, brown	1.00		1GP				1.5
4	SP-SAND, trace silt, trace gravel, medium to fine grained, brown, moist	3.50						1.0
6								1.2
8	CI-CLAY, trace silt, trace gravel, moderately soft, moderate plasticity, gray, moist	8.00		2GP				1.4
10								1.5
12	- firm at 12.0ft BGS							
14	SP-SAND, with gravel, medium grained, gray/brown, wet	14.00		3GP				0.7
16	END OF BOREHOLE @ 15.0ft BGS	15.00						
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

OVERBURDEN LOG 7097-PCC WEST.GPJ CRA_CORP.GDT 11/19/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: RACER - PCC WEST
PROJECT NUMBER: 007097
CLIENT: RACER
LOCATION: PONTIAC, MI

HOLE DESIGNATION: SB-21-12
DATE COMPLETED: October 2, 2012
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: M. CORAM

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
2	ASPHALT			1GP				1.1
4								1.2
6	SP-SAND, trace silt, trace gravel, medium to fine grained, brown, moist	5.00		4.5-6.5'-033				1.3
8	CI-CLAY, trace silt, trace gravel, firm, moderate plasticity, gray, moist	7.00		2GP				0.7
10								0.6
12				10-12'-034				0.6
14				3GP				0.4
16	END OF BOREHOLE @ 15.0ft BGS	15.00						
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 7097-PCC WEST.GPJ CRA_CORP.GDT 11/19/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: RACER - PCC WEST
PROJECT NUMBER: 007097
CLIENT: RACER
LOCATION: PONTIAC, MI

HOLE DESIGNATION: SB-22-12
DATE COMPLETED: October 2, 2012
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: M. CORAM

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	ASPHALT/PAVEMENT	0.50						
2	SP-SAND, trace gravel, medium to fine grained, brown, moist			1GP				1.5
4								1.2
6								1.5
8	SC-CLAYEY SAND, grave, medium to fine sand, brown, wet	7.50		2GP				1.9
10	CI-SILTY CLAY, trace sand, trace gravel, gray, moist	8.00						1.6
12								1.2
14				3GP				1.0
16	END OF BOREHOLE @ 15.0ft BGS	15.00						
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

OVERBURDEN LOG 7097-PCC WEST.GPJ CRA_CORP.GDT 11/19/12

ATTACHMENT B

MONITORING WELL INSTALLATION LOGS



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DUCO STORES

PROJECT NUMBER: 7097-10

CLIENT: ENCORE

LOCATION: PONTIAC, MI

HOLE DESIGNATION: MW34-01

DATE COMPLETED: October 1, 2007

DRILLING METHOD: 4-1/4" HSA

FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	ASPHALT	0.50	CONCRETE					0.0
2	SC-CLAYEY SANDS, with gravels, medium grained sands, fine to coarse gravels, trace fine to coarse sands, moderately graded, loose, brown, moist	1.50	BENTONITE CHIPS	1HSA		80		0.0
4	SP-SANDS, fine grained, with medium to coarse grained, trace fine gravels, poorly graded, loose, brown, moist	3.50	2" PVC WELL CASING					0.0
6	CL-CLAYS, with sands, fine grained, trace medium grained, poorly graded, low plasticity, firm, black, moist			2HSA		70		0.3
8	- with fine to coarse gravels at 5.0ft BGS							0.0
10	- no gravels, trace fine sands, soft, brown, very moist to saturated at 8.5ft BGS	10.00		3HSA		100		0.0
12	- with fine sands, trace fine gravels, firm, black, moist at 9.5ft BGS	12.50						0.0
14	CH-CLAYS, with sands, fine grained, trace fine gravels, poorly graded, high plasticity, olive green, very moist to moist		4-1/4" BOREHOLE	4HSA		100		0.0
16	CI-CLAYS, with silts, trace fine sands and fine gravels, poorly graded, moderate plasticity, stiff, brown, moist, mottled		2" PVC WELL SCREEN					0.0
18		18.00	SAND PACK	5HSA		45		0.0
20	SP-SANDS, medium grained with fine grained, poorly graded, loose, gray, very moist to saturated			6HSA		15		0.0
22	- fine grained at 20.0ft BGS							0.0
24								0.0
26	- fine to medium grained at 22.5ft BGS							0.0
28								0.0
30	END OF BOREHOLE @ 30.0ft BGS	30.00						0.0

WELL DETAILS

Screened interval:

15.00 to 25.00ft BGS

Length: 10ft

Diameter: 2in

Slot Size: 0.010

Material: PVC

Sand Pack:

13.00 to 30.00ft BGS

Material: SAND

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 7097-DUCO STORES.GPJ CRA CORP.GDT 3/30/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DUCO STORES

PROJECT NUMBER: 7097-10

CLIENT: ENCORE

LOCATION: PONTIAC, MI

HOLE DESIGNATION: MW34-02

DATE COMPLETED: October 1, 2007

DRILLING METHOD: 4-1/4" HSA

FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	ASPHALT	0.50	CONCRETE					
2	SW-SANDS AND GRAVELS, fine sands, fine to coarse gravels with medium to coarse sands, moderately graded, loose, brown, moist	0.75	BENTONITE CHIPS	1HSA		100		-
4	CI-CLAYS, with coarse gravels, poorly graded, low plasticity, stiff, brown, moist	1.25	2" PVC WELL CASING	2HSA		100		0.0
6	SP-SANDS, fine grained, poorly graded, loose, brown, moist	5.50		3HSA		100		0.1
8	- with coarse sands and fine to coarse gravels at 3.0ft BGS							0.0
10	- fine gravels, trace coarse sands at 3.8ft BGS		4-1/4" BOREHOLE					0.0
12	- with clays, very moist at 4.5ft BGS		2" PVC WELL SCREEN					0.0
14	CH-CLAYS, with sands, fine grained, trace fine gravels, poorly graded, high plasticity, firm to stiff, gray, moist		SAND PACK	4HSA		100		0.0
16	- decrease in sands, stiff at 10.0ft BGS							0.0
18	- with fine to coarse gravels at 15.0ft BGS			5HSA		100		0.0
20	SP-SANDS, fine to medium grained, with fine to coarse gravels, poorly graded, loose, gray, very moist	18.50						0.0
22	CH-CLAYS, with sands, fine grained, trace fine to coarse gravels, poorly graded, high plasticity, stiff, gray, moist	19.00		6HSA		100		0.0
24								0.0
26								0.0
28				7HSA		100		0.0
30								0.0
32				8HSA		100		0.0
34								0.0
36	END OF BOREHOLE @ 35.0ft BGS	35.00						0.0
38								
40								
42								
44								

WELL DETAILS

Screened interval:

8.50 to 23.50ft BGS

Length: 15ft

Diameter: 2in

Slot Size: 0.010

Material: PVC

Sand Pack:

6.50 to 35.00ft BGS

Material: SAND

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 7097-DUCO STORES.GPJ CRA CORP.GDT 3/30/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DUCO STORES

PROJECT NUMBER: 7097-10

CLIENT: ENCORE

LOCATION: PONTIAC, MI

HOLE DESIGNATION: MW34-03

DATE COMPLETED: October 2, 2007

DRILLING METHOD: 4-1/4" HSA

FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	ASPHALT	0.50	CONCRETE					-
2	SW/GW-SANDS AND GRAVELS, fine sands, fine to coarse gravels, trace coarse sands, moderately graded, loose, brown, moist	2.50	BENTONITE CHIPS	1HSA		80		3.1
4	SP-SANDS, fine sands, fine grained, trace medium grained, poorly graded, loose, brown, moist		2" PVC WELL CASING					0.8
6			4-1/4" BOREHOLE	2HSA		60		0.0
8			2" PVC WELL SCREEN					0.1
10	- very moist at 9.0ft BGS - medium grained with fine grained at 10.0ft BGS	10.20	SAND PACK	3HSA		100		0.0
12	CH-CLAYS, with fine sands and coarse gravels, poorly graded, high plasticity, firm, gray, very moist - stiff at 12.0ft BGS							0.0
14				4HSA		100		0.0
16	- firm to stiff at 15.0ft BGS							0.0
18								0.0
20								0.0
22				5HSA		100		0.7
24								0.3
26	END OF BOREHOLE @ 25.0ft BGS	25.00						

WELL DETAILS

Screened interval:

7.00 to 22.00ft BGS

Length: 15ft

Diameter: 2in

Slot Size: 0.010

Material: PVC

Sand Pack:

5.00 to 25.00ft BGS

Material: SAND

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 7097-DUCO STORES.GPJ CRA CORP.GDT 3/30/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DUCO STORES

PROJECT NUMBER: 7097-10

CLIENT: ENCORE

LOCATION: PONTIAC, MI

HOLE DESIGNATION: MW34-04

DATE COMPLETED: November 20, 2007

DRILLING METHOD: 6-1/4" HSA

FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	CONCRETE							
2	CL-SANDY CLAYS, fine grained, trace coarse grained, poorly graded, low plasticity, soft, brown, moist to very moist	1.00	CONCRETE	0-2' -001				0.3
4	- decrease in sands, trace coarse grained and fine gravels, stiff, moist at 2.0ft BGS		BENTONITE CHIPS	1HSA		50		0.8
	- increase in sands, soft at 3.0ft BGS		2" PVC WELL CASING					
6	SP-SANDS, fine to medium grained, poorly graded, loose, brown, moist	5.50	6-1/4" BOREHOLE					1.2
8	- medium grained, with fine and coarse grained and fine to coarse gravels, moderately graded, gray, saturated, slight petroleum-like odor, sheen at 6.5ft BGS	8.20	2" PVC WELL SCREEN	6-8' -002		85		29.6
			SAND PACK	2HSA				3.7
10	CL-CLAYS, with sands, fine grained, trace coarse grained and fine gravels, poorly graded, low plasticity, firm, gray, moist							1.4
12	- trace fine to coarse gravels at 11.0ft BGS			3HSA		90		1.4
14	- trace fine sands at 12.5ft BGS							
16	SP-SANDS, fine grained with fine gravels, poorly graded, compact, gray, moist	14.50						1.6
18	CH-CLAYS, trace fine sands and fine to coarse gravels, poorly graded, high plasticity, firm, gray, moist	15.00		4HSA		75		1.0
20								1.0
22				5HSA		80		1.2
24								0.9
26				6HSA		85		0.6
28								0.2
30	END OF BOREHOLE @ 30.0ft BGS	30.00						
32	NOTE: 6-8' INTERVAL TESTED POSITIVE USING SUDAN IV JAR TEST							
34								
36								

WELL DETAILS

Screened interval:
4.00 to 19.00ft BGS
Length: 15ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
2.00 to 30.00ft BGS
Material: SAND

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

OVERBURDEN LOG 7097-DUCO STORES.GPJ CRA CORP.GDT 3/30/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DUCO STORES

PROJECT NUMBER: 7097-10

CLIENT: ENCORE

LOCATION: PONTIAC, MI

HOLE DESIGNATION: MW34-05

DATE COMPLETED: July 24, 2009

DRILLING METHOD: GEOPROBE

FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	CONCRETE		CONCRETE					
2	SP-SANDS, fine grained, trace coarse grained and fine to coarse gravels, poorly graded, loose, brown, moist	1.00	BENTONITE CHIPS	1GP		70		1.2
4			2" PVC WELL CASING					0.9
6	GP-GRAVELS, coarse grained, with fine grained and fine sands, poorly graded, loose, gray, moist	5.00						
8	CL-CLAYS, trace fine sands and fine gravels, poorly graded, low plasticity, firm, brown, moist	5.50		2GP		65		2.1
10	- no gravels, slight increase in plasticity, firm to soft, grayish brown, moist to very moist at 10.0ft BGS		8" BOREHOLE					2.1
12			SAND PACK	3GP		80		2.4
14								2.0
16			2" PVC WELL SCREEN					0.2
18	- decrease in plasticity, firm, gray, moist at 18.5ft BGS			4GP		90		1.1
20								0.0
22				5GP		75		0.0
24	SP-SANDS, fine grained, with medium grained, poorly graded, loose, gray, saturated	22.50						
26	CL-CLAYS, trace fine sands, poorly graded, low plasticity, firm to stiff, gray, moist	23.25						0.0
28	END OF BOREHOLE @ 25.0ft BGS	25.00						
30	NOTE: WATER TABLE OBSERVED AT ~ 14' BGS IN TEMP WELL							
32								
34								

WELL DETAILS

Screened interval:

12.00 to 22.00ft BGS

Length: 10ft

Diameter: 2in

Slot Size: 0.010

Material: PVC

Seal:

1.00 to 9.50ft BGS

Material: BENTONITE CHIPS

Sand Pack:

9.50 to 22.00ft BGS

Material: SAND PACK

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ∇

OVERBURDEN LOG 7097-DUCO STORES.GPJ CRA CORP.GDT 3/30/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DUCO STORES

PROJECT NUMBER: 7097-10

CLIENT: ENCORE

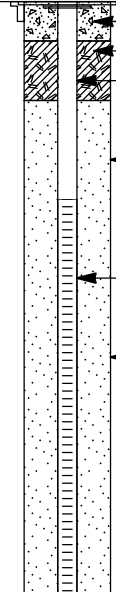
LOCATION: PONTIAC, MI

HOLE DESIGNATION: MW34-06

DATE COMPLETED: July 20, 2009

DRILLING METHOD: GEOPROBE

FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
0	ASPHALT	0.40	 CONCRETE BENTONITE CHIPS 2" PVC WELL CASING 8" BOREHOLE 2" PVC WELL SCREEN SAND PACK <u>WELL DETAILS</u> Screened interval: 5.00 to 15.00ft BGS Length: 10ft Diameter: 2in Slot Size: 0.010 Material: PVC Seal: 1.00 to 2.50ft BGS Material: BENTONITE CHIPS Sand Pack: 2.50 to 15.00ft BGS Material: SAND PACK	1GP		80		0.0
2	SP-GRAVELLY SANDS, fine grained sand, fine to coarse gravels, poorly graded, loose, brown, moist							0.0
4	- with clays, loose to compact at 3.5ft BGS							0.0
6	SP-SANDS, fine grained, trace medium grained and fine to coarse gravels, poorly graded, loose, brown, moist	4.75		2GP		35		0.0
8								0.0
10	- saturated at 9.9ft BGS							0.0
12				3GP		55		0.0
14								0.0
16	CI-CLAYS, with gravels, fine to coarse gravels, trace fine sands, poorly graded, moderate plasticity, firm, gray, moist	15.00		4GP		100		0.0
18								0.0
20								0.0
22				5GP		95		0.0
24								0.0
26	END OF BOREHOLE @ 25.0ft BGS	25.00						
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 7097-DUCO STORES.GPJ CRA CORP.GDT 3/30/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DUCO STORES

PROJECT NUMBER: 7097-10

CLIENT: ENCORE

LOCATION: PONTIAC, MI

HOLE DESIGNATION: MW34-07

DATE COMPLETED: July 21, 2009

DRILLING METHOD: GEOPROBE

FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	CONCRETE		CONCRETE					
2	CL-SANDY CLAYS, fine grained, trace medium grained and fine gravels, poorly graded, low plasticity, stiff, brown, moist	0.80	BENTONITE CHIPS	1GP		100		0.0
4	SP-SANDS, fine grained, with medium to coarse grained and fine gravels, poorly graded, loose to compact, brown, moist - compact at 5.0ft BGS	2.50	2" PVC WELL CASING					0.0
6								0.0
8	- dense at 8.0ft BGS		8" BOREHOLE	2GP		65		0.0
10								0.0
12	CL-SANDY CLAYS, fine grained, trace medium grained and fine gravels, poorly graded, low plasticity, firm, brown, moist to very moist	10.50	2" PVC WELL SCREEN					0.0
14	SP-SANDS, fine grained, with medium to coarse grained and fine gravels, poorly graded, compact, brown, moist to very moist	12.50	SAND PACK	3GP		60		0.0
16	CL-SANDY CLAYS, fine grained, poorly graded, low plasticity, firm, gray, moist to very moist	13.50						0.0
18	SP-SANDS, fine grained, with medium to coarse grained and fine gravels, poorly graded, compact, brown, moist to very moist	14.00						0.0
20	CI-CLAYS, trace fine to coarse sands and fine gravels, poorly graded, moderate plasticity, soft to firm, gray, moist to very moist	14.75		4GP		95		0.0
22								0.0
24				5GP		90		0.0
26	END OF BOREHOLE @ 25.0ft BGS	25.00						
28	NOTE: WELL SCREEN SET TO CAPTURE MOIST TO VERY MOIST SAND INTERVALS							
30								
32								
34								

WELL DETAILS

Screened interval:

9.00 to 19.00ft BGS

Length: 10ft

Diameter: 2in

Slot Size: 0.010

Material: PVC

Seal:

1.00 to 6.50ft BGS

Material: BENTONITE CHIPS

Sand Pack:

6.50 to 19.00ft BGS

Material: SAND PACK

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 7097-DUCO STORES.GPJ CRA CORP.GDT 3/30/12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: DUCO STORES

HOLE DESIGNATION: MW34-08

PROJECT NUMBER: 7097-10

DATE COMPLETED: July 24, 2009

CLIENT: ENCORE

DRILLING METHOD: GEOPROBE

LOCATION: PONTIAC, MI

FIELD PERSONNEL: C. BONDY

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
2	CONCRETE	0.40	CONCRETE	1GP		75		3.3
4	CL-CLAYS, with gravels, fine to coarse grained, trace fine to medium sands, poorly graded, low plasticity, firm, brown, moist		BENTONITE CHIPS					3.9
6	- trace fine to coarse gravels and fine sands, stiff, slightly mottled at 5.0ft BGS		2" PVC WELL CASING					3.9
8				2GP		85		4.1
10	- 2" sand lens at 9.3ft BGS	9.40	8" BOREHOLE					4.0
12	CL-SANDY CLAYS, fine grained, trace coarse gravels and silts, poorly graded, low plasticity, firm, brown, moist	10.50						3.4
14	SP-SANDS, fine grained, trace medium grained, poorly graded, loose, brown, moist	11.00	2" PVC WELL SCREEN	3GP		70		2.6
16	CL-SANDY CLAYS, fine grained, trace coarse gravels and silts, trace sand lenses, poorly graded, low plasticity, firm, brown, moist		SAND PACK					2.7
18	- no sand lenses, gray at 15.0ft BGS			4GP		90		1.0
20								1.2
22	- increase in sands, soft to firm, very moist at 21.0ft BGS			5GP		80		
24	- decrease in sands, firm, moist to very moist at 21.8ft BGS							
26	- stiff at 23.5ft BGS							
28	END OF BOREHOLE @ 25.0ft BGS	25.00						
30	NOTE: WATER TABLE OBSERVED AT ~ 17' BGS IN TEMP WELL							
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ∇

OVERBURDEN LOG 7097-DUCO STORES.GPJ CRA CORP.GDT 3/30/12

WELL DETAILS
Screened interval:
11.00 to 21.00ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Seal:
1.00 to 8.50ft BGS
Material: BENTONITE CHIPS
Sand Pack:
8.50 to 21.00ft BGS
Material: SAND PACK